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Automated Report

Technical Report for

Arcadis-US, Inc

Castner Firing Range; Ft Bliss, TX

06261038.0001.00400

SGS Accutest Job Number: FA35653

Sampling Dates: 07/15/16 - 07/21/16

Report to:

Arcadis-US, Inc
401 E Main St Suite 400
El Paso, TX 79901
(b) (6)

ATTN: (b) (6)

Total number of pages in report: **149**

NELAP ACCREDITED TNI LABORATORY

(b) (6)

Technical Director

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Client Service contact: (b) (6)

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (2937), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

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Test results relate only to samples analyzed.

Sections: 1 2 3 4 5 6 7 8

Table of Contents

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **5**
Section 4: Sample Results **6**
4.1: FA35653-1: FTBL-SS-B42-0-6-071516-QA 7
4.2: FA35653-2: FTBL-SS-B50-12-24-071816-QA 8
4.3: FA35653-3: FTBL-SS-B45-0-6-071916-QA 9
4.4: FA35653-4: FTBL-SS-B18-0-6-072016-QA 10
4.5: FA35653-5: FTBL-SS-B03-0-6-072116-QA 11
Section 5: Misc. Forms **12**
5.1: Chain of Custody 13
5.2: QC Evaluation: DOD QSM5 Limits 16
Section 6: Metals Analysis - QC Data Summaries **17**
6.1: Inst QC MA13319: Sb,Cu,Pb,Zn 18
6.2: Inst QC MA13320: Sb,Cu,Pb,Zn 40
6.3: Prep QC MP30665: Sb,Cu,Pb,Zn 54
6.4: IDL and Linear Range Summaries 60
Section 7: Metals Analysis - Raw Data **64**
7.1: Raw Data MA13319 65
7.2: Raw Data MA13320 116
7.3: Prep Logs 147
Section 8: General Chemistry - QC Data Summaries **148**
8.1: Percent Solids Raw Data Summary 149

Sample Summary

Arcadis-US, Inc

Job No: FA35653

Castner Firing Range; Ft Bliss, TX
Project No: 06261038.0001.00400

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA35653-1	07/15/16	12:20	AG	07/23/16	SO	Soil	FTBL-SS-B42-0-6-071516-QA
FA35653-2	07/18/16	13:35	AG	07/23/16	SO	Soil	FTBL-SS-B50-12-24-071816-QA
FA35653-3	07/19/16	11:25	AG	07/23/16	SO	Soil	FTBL-SS-B45-0-6-071916-QA
FA35653-4	07/20/16	12:15	AG	07/23/16	SO	Soil	FTBL-SS-B18-0-6-072016-QA
FA35653-5	07/21/16	12:10	AG	07/23/16	SO	Soil	FTBL-SS-B03-0-6-072116-QA

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Arcadis-US, Inc **Job No:** FA35653

Site: Castner Firing Range; Ft Bliss, TX **Report Date:** 8/4/2016 9:37:10 AM

5 Sample(s) were collected on/ between 07/15/2016 and 07/21/2016 and were received at SGS Accutest Southeast (SASE) on 07/23/2016 properly preserved, at 3.6 Deg. C and intact. These Samples received an SASE job number of FA35653. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Metals By Method SW846 6010C

Matrix: SO **Batch ID:** MP30665

All samples were digested within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA35738-10DUP, FA35738-10MS, FA35738-10MSD, FA35738-10PS, FA35738-10SDL were used as the QC samples for metals.

Matrix Spike Recovery(s) for Antimony, Lead are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for Antimony, Copper, Lead are outside control limits. Probable cause is due to matrix interference.

Matrix Spike /Matrix Spike Duplicate Recovery(s) for Zinc are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

RPD(s) for Duplicate for Lead, Antimony are outside control limits for sample MP30665-D1. High RPD due to possible sample non-homogeneity.

RPD(s) for MSD for Lead, Zinc are outside control limits for sample MP30665-S2. High RPD due to possible sample non-homogeneity.

RPD(s) for Serial Dilution for Antimony, Copper, Zinc are outside control limits for sample MP30665-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Sample(s) FA35653-1, FA35653-2, FA35653-3, FA35653-4, FA35653-5 are for Antimony, Copper, Zinc, Antimony have elevated reporting limit(s) due to matrix interference.

MP30665-S1 for Antimony: Spike recovery indicates possible matrix interference and/or sample non-homogeneity.
MP30665-S1 for Lead: Spike recovery indicates possible matrix interference and/or sample non-homogeneity.

MP30665-PS1 for Lead: Spike recovery indicates matrix interference and/or outside control limits due to high level in sample relative to spike amount.

MP30665-D1 for Antimony: RPD acceptable due to low duplicate and sample concentrations.

MP30665-SD1 for Copper: Serial dilution indicates possible matrix interference.

MP30665-SD1 for Zinc: Serial dilution indicates possible matrix interference.

Wet Chemistry By Method SM19 2540G

Matrix: SO **Batch ID:** GN71798

Sample(s) FA35647-22DUP were used as the QC samples for Solids, Percent.

SGS Accutest (SASE) certifies that this report meets the project requirements for analytical data produced for the samples as received at SASE and as stated on the COC. SASE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SASE Quality Manual except as noted above. This report is to be used in its entirety. SASE is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

_____

Kim Benham, Client Services (signature on file)

Date: August 4, 2016

Summary of Hits

Job Number: FA35653
Account: Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX
Collected: 07/15/16 thru 07/21/16

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA35653-1	**FTBL-SS-B42-0-6-071516-QA**					
Copper [a]		24.4	4.1	0.33	mg/kg	SW846 6010C
Lead		102	0.83	0.17	mg/kg	SW846 6010C
Zinc [a]		61.8	3.3	0.83	mg/kg	SW846 6010C
FA35653-2	**FTBL-SS-B50-12-24-071816-QA**					
Copper [a]		8.4	5.2	0.41	mg/kg	SW846 6010C
Lead		15.2	1.0	0.21	mg/kg	SW846 6010C
Zinc [a]		35.9	4.1	1.0	mg/kg	SW846 6010C
FA35653-3	**FTBL-SS-B45-0-6-071916-QA**					
Antimony [a]		2.1 J	4.0	1.0	mg/kg	SW846 6010C
Copper [a]		17.3	5.0	0.40	mg/kg	SW846 6010C
Lead		215	4.0	0.80	mg/kg	SW846 6010C
Zinc [a]		48.1	4.0	1.0	mg/kg	SW846 6010C
FA35653-4	**FTBL-SS-B18-0-6-072016-QA**					
Copper [a]		14.6	3.7	0.30	mg/kg	SW846 6010C
Lead		22.4	0.74	0.15	mg/kg	SW846 6010C
Zinc [a]		39.3	3.0	0.74	mg/kg	SW846 6010C
FA35653-5	**FTBL-SS-B03-0-6-072116-QA**					
Copper [a]		9.8 J	14	1.1	mg/kg	SW846 6010C
Lead		25.7	1.1	0.23	mg/kg	SW846 6010C
Zinc [a]		52.3	11	2.8	mg/kg	SW846 6010C

(a) Elevated reporting limit(s) due to matrix interference.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	FTBL-SS-B42-0-6-071516-QA		
Lab Sample ID:	FA35653-1	**Date Sampled:**	07/15/16
Matrix:	SO - Soil	**Date Received:**	07/23/16
		Percent Solids:	91.7
Project:	Castner Firing Range; Ft Bliss, TX		

Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony [a]	0.83 U	3.3	0.83	0.21	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]
Copper [a]	24.4	4.1	0.33	0.17	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]
Lead	102	0.83	0.17	0.041	mg/kg	1	08/01/16	08/02/16	LM	SW846 6010C [1]	SW846 3050B [3]
Zinc [a]	61.8	3.3	0.83	0.50	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA13319
(2) Instrument QC Batch: MA13320
(3) Prep QC Batch: MP30665

(a) Elevated reporting limit(s) due to matrix interference.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection J = Indicates a result > = DL (MDL) but < LOQ

Report of Analysis

Client Sample ID:	FTBL-SS-B50-12-24-071816-QA		
Lab Sample ID:	FA35653-2	**Date Sampled:**	07/18/16
Matrix:	SO - Soil	**Date Received:**	07/23/16
		Percent Solids:	94.0
Project:	Castner Firing Range; Ft Bliss, TX		

Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony [a]	1.0 U	4.1	1.0	0.27	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]
Copper [a]	8.4	5.2	0.41	0.21	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]
Lead	15.2	1.0	0.21	0.052	mg/kg	1	08/01/16	08/02/16	LM	SW846 6010C [1]	SW846 3050B [3]
Zinc [a]	35.9	4.1	1.0	0.62	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA13319
(2) Instrument QC Batch: MA13320
(3) Prep QC Batch: MP30665

(a) Elevated reporting limit(s) due to matrix interference.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection J = Indicates a result > = DL (MDL) but < LOQ

Report of Analysis

Client Sample ID:	FTBL-SS-B45-0-6-071916-QA		
Lab Sample ID:	FA35653-3	**Date Sampled:**	07/19/16
Matrix:	SO - Soil	**Date Received:**	07/23/16
		Percent Solids:	89.3
Project:	Castner Firing Range; Ft Bliss, TX		

Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony [a]	2.1 J	4.0	1.0	0.26	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [1]	SW846 3050B [2]
Copper [a]	17.3	5.0	0.40	0.20	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [1]	SW846 3050B [2]
Lead	215	4.0	0.80	0.20	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [1]	SW846 3050B [2]
Zinc [a]	48.1	4.0	1.0	0.60	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA13320
(2) Prep QC Batch: MP30665

(a) Elevated reporting limit(s) due to matrix interference.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection J = Indicates a result > = DL (MDL) but < LOQ

Report of Analysis

Client Sample ID:	FTBL-SS-B18-0-6-072016-QA		
Lab Sample ID:	FA35653-4	**Date Sampled:**	07/20/16
Matrix:	SO - Soil	**Date Received:**	07/23/16
		Percent Solids:	96.8
Project:	Castner Firing Range; Ft Bliss, TX		

Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony [a]	0.74 U	3.0	0.74	0.19	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]
Copper [a]	14.6	3.7	0.30	0.15	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]
Lead	22.4	0.74	0.15	0.037	mg/kg	1	08/01/16	08/02/16	LM	SW846 6010C [1]	SW846 3050B [3]
Zinc [a]	39.3	3.0	0.74	0.44	mg/kg	4	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA13319
(2) Instrument QC Batch: MA13320
(3) Prep QC Batch: MP30665

(a) Elevated reporting limit(s) due to matrix interference.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection J = Indicates a result > = DL (MDL) but < LOQ

Report of Analysis

Client Sample ID: FTBL-SS-B03-0-6-072116-QA
Lab Sample ID: FA35653-5
Matrix: SO - Soil
Project: Castner Firing Range; Ft Bliss, TX

Date Sampled: 07/21/16
Date Received: 07/23/16
Percent Solids: 75.1

Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony [a]	2.8 U	11	2.8	0.73	mg/kg	10	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]
Copper [a]	9.8 J	14	1.1	0.56	mg/kg	10	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]
Lead	25.7	1.1	0.23	0.056	mg/kg	1	08/01/16	08/02/16	LM	SW846 6010C [1]	SW846 3050B [3]
Zinc [a]	52.3	11	2.8	1.7	mg/kg	10	08/01/16	08/03/16	LM	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA13319
(2) Instrument QC Batch: MA13320
(3) Prep QC Batch: MP30665

(a) Elevated reporting limit(s) due to matrix interference.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection J = Indicates a result > = DL (MDL) but < LOQ

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5 Limits

ACCUTEST LABORATORIES

Accutest Laboratories Southeast
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.accutest.com

FA35653

ACCUTEST JOB # : PAGE 1 OF 1

Accutest Quote #	SKIFF #

Client / Reporting Information

Per contract terms

Project Information

Project Name: Closed Cartner Firing Range
Street: 401 East Main Street, Suite 400
City: El Paso State: Texas
Project #: 06261038.0001.00400
Phone #: ~~915-433-1761~~ 915-433-1761
Client Purchase Order #: IC

Sampler(s) Name(s) (Printed): Ana Gutierrez
Sampler 1: Sampler 2:

Analytical Information

Metals (Cu, Pb, Sb, Zn) / TCLP Lead (1,10)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

Accutest Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZNAC	DI WATER	MEOH	Metals (Cu, Pb, Sb, Zn)	TCLP Lead (1,10)	LAB USE ONLY
1	FTBL-SS-B42-0-6-071516-QA	7-15-16	1220	AG	S	1		X								X	X	
2	FTBL-SS-B50-12-24-071816-QA	7-18-16	1335	AG	S	1		X								X	X	
3	FTBL-SS-B45-0-6-071916-QA	7-19-16	1125	AG	S	1		X								X	X	
4	FTBL-SS-B18-0-6-072016-QA	7-20-16	1215	AG	S	1		X								X	X	
5	FTBL-SS-B03-0-6-072116-QA	7-21-16	1210	AG	S	1		X								X	X	

Turnaround Time (Business days)

Std. 10 Business Days
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Emergency or Rush T/A Data Available VIA Email or Lablink

Approved By: / Date/Rush Code:

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

Comments / Remarks

*TCLP hold on all pending results. Please contact Garett Ferguson before running!. 915-433-1761

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 AT / Arcadis	7-22-16/1500	2 FX	3 FX	7-23-16	4 J. Copar (Alse) 11:45
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Custody Seal In Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: 1 Cooler Temperature (s) Celsius: 3.6

5.1 5

FA35653: Chain of Custody
Page 1 of 3

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA35653 CLIENT: ARCADIS PROJECT: CLOSED CARTNER

DATE/TIME RECEIVED: 7-23-16 11:45 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 7836 4442 7042

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [X] TRIP BLANK NOT PROVIDED
- [X] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR 0.0
- [ ] OBSERVED TEMPS: 3.6
- [ ] CORRECTED TEMPS: 3.6 (USED FOR LIMS)

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#_____

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

TEST STRIP LOT#s pH 0-3 230315 pH 10-12 219813A OTHER (specify) _____

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE: JC 7-25-16 REVIEWER SIGNATURE/DATE:

NF 11/15 RECEIPTLOG040416.xls

5.1 5

5.1

5

FA35653: Chain of Custody
Page 3 of 3

QC Evaluation: DOD QSM5 Limits

Job Number: FA35653
Account: Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX
Collected: 07/15/16 thru 07/21/16

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
MP30665	SW846 6010C						
MP30665-B1	7440-36-0	Antimony	BSP	REC	97.6	%	79-114
MP30665-B1	7440-50-8	Copper	BSP	REC	98.4	%	81-117
MP30665-B1	7439-92-1	Lead	BSP	REC	92.4	%	81-112
MP30665-B1	7440-66-6	Zinc	BSP	REC	98	%	82-113
MP30665-S1*	7440-36-0	Antimony	MS	REC	19.5 [a]	%	79-114
MP30665-S1*	7440-50-8	Copper	MS	REC	83.8	%	81-117
MP30665-S1*	7439-92-1	Lead	MS	REC	3047 [a]	%	81-112
MP30665-S1*	7440-66-6	Zinc	MS	REC	25.5 [b]	%	82-113
MP30665-S2*	7440-36-0	Antimony	MSD	REC	20 [a]	%	79-114
MP30665-S2*	7440-36-0	Antimony	MSD	RPD	2.4	%	20
MP30665-S2*	7440-50-8	Copper	MSD	REC	121.4 [a]	%	81-117
MP30665-S2*	7440-50-8	Copper	MSD	RPD	17	%	20
MP30665-S2*	7439-92-1	Lead	MSD	REC	5083.7 [a]	%	81-112
MP30665-S2*	7439-92-1	Lead	MSD	RPD	43.1 [c]	%	20
MP30665-S2*	7440-66-6	Zinc	MSD	REC	2110.8 [b]	%	82-113
MP30665-S2*	7440-66-6	Zinc	MSD	RPD	121.3 [c]	%	20
MP30665-D1*	7440-36-0	Antimony	DUP	RPD	40 [d]	%	20
MP30665-D1*	7440-50-8	Copper	DUP	RPD	0	%	20
MP30665-D1*	7439-92-1	Lead	DUP	RPD	24.9 [c]	%	20
MP30665-D1*	7440-66-6	Zinc	DUP	RPD	14.2	%	20

(a) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(c) High RPD due to possible sample non-homogeneity.
(d) RPD acceptable due to low duplicate and sample concentrations.

* Sample used for QC is not from job FA35653

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries
- IDL and Linear Range Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:09	MA13319-STD1	1		STDA
08:12	MA13319-STD2	1		STDB
08:16	MA13319-STD3	1		STDC
08:19	MA13319-STD4	1		STDD
08:24	MA13319-HSTD1	1		
08:31	MA13319-ICV1	1		
08:37	MA13319-ICB1	1		
08:45	MA13319-CRIA1	1		
08:53	MA13319-ICSA1	1		
08:58	MA13319-ICSAB1	1		
09:07	MA13319-CCV1	1		
09:16	MA13319-CCB1	1		
09:20	MP30665-MB1	1		
09:24	MP30665-B1	1		
09:28	FA35738-10	2		(sample used for QC only; not part of login FA35653)
09:33	MP30665-D1	2		
09:37	MP30665-SD1	10		
09:41	MP30665-PS1	2		
09:45	MP30665-S1	2		
09:49	MP30665-S2	2		
09:54	ZZZZZZ	2		
09:58	ZZZZZZ	2		
10:02	MA13319-CCV2	1		
10:06	MA13319-CCB2	1		
10:10	ZZZZZZ	2		
10:14	ZZZZZZ	2		
10:23	ZZZZZZ	1		
10:27	ZZZZZZ	1		
10:31	ZZZZZZ	1		
10:36	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:44	ZZZZZZ	1		
10:48	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

	Time	Sample Description	Dilution Factor	PS Recov	Comments
	10:52	MA13319-CCV3	1		
	10:56	MA13319-CCB3	1		
	11:00	ZZZZZZ	1		
	11:04	ZZZZZZ	1		
	11:08	FA35653-1	1		
	11:13	FA35653-2	1		
	11:22	FA35653-4	1		
	11:26	FA35653-5	1		
---------->	Last reportable sample/prep for job FA35653				
	11:31	FA35731-33	10		(sample used for QC only; not part of login FA35653)
	11:35	MP30663-PS1	10		
	11:39	MP30663-SD1	50		
	11:43	MA13319-CCV4	1		
	11:47	MA13319-CCB4	1		
	11:51	ZZZZZZ	4		
	11:56	ZZZZZZ	4		
	12:20	MP30669-MB1	1		
	12:24	MP30669-B1	1		
	12:28	C46693-2T	1		(sample used for QC only; not part of login FA35653)
	12:32	MP30669-D1	1		
	12:36	MP30669-SD1	5		
	12:40	MP30669-S1	1		
	12:53	MP30669-S2	1		
	12:59	FA35726-11	1		(sample used for QC only; not part of login FA35653)
	13:03	MA13319-CCV5	1		
	13:07	MA13319-CCB5	1		
	13:11	ZZZZZZ	1		
	13:15	ZZZZZZ	1		
	13:20	ZZZZZZ	1		
	13:25	ZZZZZZ	1		
	13:30	ZZZZZZ	1		
	13:34	MP30669-D2	1		
	13:38	MP30669-MB2	1		
	13:42	MP30669-B2	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:46	MP30669-MB3	1		
13:51	MP30669-B3	1		
13:55	MA13319-CCV6	1		
13:59	MA13319-CCB6	1		
14:03	MP30670-MB1	1		
14:07	MP30670-B1	1		
14:11	C46643-1T	1		(sample used for QC only; not part of login FA35653)
14:15	MP30670-D1	1		
14:20	MP30670-SD1	5		
14:24	MP30670-S1	1		
14:28	MP30670-S2	1		
14:32	ZZZZZZ	1		
14:36	ZZZZZZ	1		
14:41	ZZZZZZ	1		
14:50	MA13319-CCV7	1		
14:56	MA13319-CCB7	1		
15:01	ZZZZZZ	1		
15:05	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:18	ZZZZZZ	1		
15:22	ZZZZZZ	1		
15:26	ZZZZZZ	1		
15:31	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:39	MP30670-MB2	1		
15:44	MA13319-CCV8	1		
15:48	MA13319-CCB8	1		
15:52	MP30670-B2	1		
15:56	MP30670-MB3	1		
16:00	MP30670-B3	1		
16:04	MP30671-MB1	1		
16:09	MP30671-B1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:13	FA35800-1	1		(sample used for QC only; not part of login FA35653)
16:17	MP30671-D1	1		
16:21	MP30671-SD1	5		
16:25	MP30671-PS1	1		
16:29	MP30671-S1	1		
16:33	MA13319-CCV9	1		
16:37	MA13319-CCB9	1		
16:41	MP30671-S2	1		
16:45	ZZZZZZ	1		
16:49	ZZZZZZ	1		
16:53	ZZZZZZ	1		
16:57	ZZZZZZ	1		
17:01	ZZZZZZ	1		
17:05	ZZZZZZ	1		
17:09	ZZZZZZ	1		
17:14	ZZZZZZ	1		
17:18	ZZZZZZ	1		
17:22	MA13319-CCV10	1		
17:26	MA13319-CCB10	1		
17:30	ZZZZZZ	1		
17:34	ZZZZZZ	1		
17:38	ZZZZZZ	1		
17:42	ZZZZZZ	1		
17:46	ZZZZZZ	1		
17:50	ZZZZZZ	1		
17:55	ZZZZZZ	1		
17:59	ZZZZZZ	1		
18:03	ZZZZZZ	1		
18:07	ZZZZZZ	5		
18:11	MA13319-CCV11	1		
18:15	MA13319-CCB11	1		
18:20	MA13319-CRIA2	1		
18:24	MA13319-ICSA2	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:28	MA13319-ICSAB2	1		
18:32	MA13319-CCV12	1		
18:36	MA13319-CCB12	1		

----------> Last reportable CCB for job FA35653
Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:09	MA13319-STD1	6423	56951	6787	2869
08:12	MA13319-STD2	6415	56414	6845	2710
08:16	MA13319-STD3	6121	54282	6796	2454
08:19	MA13319-STD4	5885	52473	6680	2270
08:24	MA13319-HSTD1	5866	52579	6636	2266
08:31	MA13319-ICV1	6077	53970	6738	2439
08:37	MA13319-ICB1	6279 R	56769 R	6795 R	2839 R
08:45	MA13319-CRIA1	6267	56247	6814	2759
08:53	MA13319-ICSA1	5571	48672	6513	2172
08:58	MA13319-ICSAB1	5528	48499	6533	2134
09:07	MA13319-CCV1	5978	54224	6709	2438
09:16	MA13319-CCB1	6174	56614	6752	2826
09:20	MP30665-MB1	6389	59447	7087	2935
09:24	MP30665-B1	6221	56815	6980	2634
09:28	FA35738-10	6818	61015	7638	2614
09:33	MP30665-D1	6816	61347	7612	2606
09:37	MP30665-SD1	6389	57456	6931	2726
09:41	MP30665-PS1	6815	60393	7570	2583
09:45	MP30665-S1	6817	59988	7499	2553
09:49	MP30665-S2	6912	60836	7617	2548
09:54	ZZZZZZ	6839	60596	7432	2635
09:58	ZZZZZZ	6945	61531	7664	2601
10:02	MA13319-CCV2	6078	54706	6724	2461
10:06	MA13319-CCB2	6284	56888	6722	2849
10:10	ZZZZZZ	6938	61429	7653	2600
10:14	ZZZZZZ	6973	62083	7728	2593
10:23	ZZZZZZ	8249 !	74070 !	9047 !	2771
10:27	ZZZZZZ	6819	60465	7462	2849
10:31	ZZZZZZ	6817	58585	7614	2519
10:36	ZZZZZZ	7480	64411	8114	2715
10:40	ZZZZZZ	7064	59951	7720	2687
10:44	ZZZZZZ	7101	60850	7733	2687
10:48	ZZZZZZ	7051	62151	7551	2781

INTERNAL STANDARD SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:52	MA13319-CCV3	6032	54573	6687	2451
10:56	MA13319-CCB3	6227	56668	6730	2837
11:00	ZZZZZZ	7124	62845	7796	2729
11:04	ZZZZZZ	7073	60993	7702	2698
11:08	FA35653-1	10893 !	97024 !	12261 !	2570
11:13	FA35653-2	8704 !	76978 !	9708 !	2518
11:22	FA35653-4	10401 !	92515 !	12149 !	2240
11:26	FA35653-5	13024 !	115820 !	14736 !	2439
11:31	FA35731-33	6415	58388	7085	2805
11:35	MP30663-PS1	6382	57739	6960	2780
11:39	MP30663-SD1	6385	57991	6869	2856
11:43	MA13319-CCV4	6137	55388	6772	2505
11:47	MA13319-CCB4	6372	58058	6774	2908
11:51	ZZZZZZ	6753	60760	7484	2751
11:56	ZZZZZZ	6103	55021	6842	2455
12:20	MP30669-MB1	6237	57805	6699	2856
12:24	MP30669-B1	6058	55480	6749	2560
12:28	C46693-2T	5966	53334	6698	2524
12:32	MP30669-D1	5986	53477	6703	2524
12:36	MP30669-SD1	6172	55742	6699	2699
12:40	MP30669-S1	5969	53293	6735	2414
12:53	MP30669-S2	5922	53373	6753	2406
12:59	FA35726-11	5917	52815	6730	2484
13:03	MA13319-CCV5	6086	55085	6736	2467
13:07	MA13319-CCB5	6332	57510	6771	2867
13:11	ZZZZZZ	6002	53454	6788	2538
13:15	ZZZZZZ	6021	54062	6675	2564
13:20	ZZZZZZ	6028	54376	6685	2542
13:25	ZZZZZZ	6316	57201	6719	2853
13:30	ZZZZZZ	6353	57419	6784	2854
13:34	MP30669-D2	5939	52031	6638	2468
13:38	MP30669-MB2	6048	53549	6640	2570
13:42	MP30669-B2	6041	53708	6709	2455

INTERNAL STANDARD SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:46	MP30669-MB3	6376	57647	6736	2874
13:51	MP30669-B3	6160	55044	6712	2576
13:55	MA13319-CCV6	6209	55627	6724	2502
13:59	MA13319-CCB6	6503	58560	6763	2917
14:03	MP30670-MB1	6365	57326	6733	2867
14:07	MP30670-B1	6178	54987	6696	2574
14:11	C46643-1T	6073	53440	6615	2550
14:15	MP30670-D1	6069	53236	6678	2551
14:20	MP30670-SD1	6403	56507	6754	2781
14:24	MP30670-S1	6088	53281	6620	2434
14:28	MP30670-S2	6085	53228	6601	2439
14:32	ZZZZZZ	6064	52974	6597	2539
14:36	ZZZZZZ	6093	53168	6603	2538
14:41	ZZZZZZ	6058	53099	6583	2537
14:50	MA13319-CCV7	6252	55074	6665	2498
14:56	MA13319-CCB7	6515	57378	6675	2899
15:01	ZZZZZZ	6092	53045	6614	2546
15:05	ZZZZZZ	6063	53050	6640	2532
15:09	ZZZZZZ	6045	53091	6615	2532
15:14	ZZZZZZ	6063	52902	6543	2527
15:18	ZZZZZZ	6104	52623	6547	2533
15:22	ZZZZZZ	6113	52852	6612	2531
15:26	ZZZZZZ	6122	52797	6595	2533
15:31	ZZZZZZ	6114	52387	6545	2526
15:35	ZZZZZZ	6103	52728	6573	2529
15:39	MP30670-MB2	6091	53015	6549	2551
15:44	MA13319-CCV8	6290	55394	6710	2509
15:48	MA13319-CCB8	6505	57460	6650	2891
15:52	MP30670-B2	6093	52981	6513	2440
15:56	MP30670-MB3	6087	52471	6534	2533
16:00	MP30670-B3	6110	52620	6445	2424
16:04	MP30671-MB1	6477	57166	6710	2875
16:09	MP30671-B1	6319	54616	6593	2590

INTERNAL STANDARD SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:13	FA35800-1	6839	58356	6974	2739
16:17	MP30671-D1	6887	58999	7060	2738
16:21	MP30671-SD1	6704	58585	6807	2876
16:25	MP30671-PS1	6747	57454	6912	2672
16:29	MP30671-S1	6696	57021	6944	2566
16:33	MA13319-CCV9	6361	55433	6653	2521
16:37	MA13319-CCB9	6555	57226	6612	2891
16:41	MP30671-S2	6654	56165	6932	2559
16:45	ZZZZZZ	7105	57106	7288	2572
16:49	ZZZZZZ	6966	58430	7085	2702
16:53	ZZZZZZ	7975 !	64087	8359	2552
16:57	ZZZZZZ	8973 !	78072 !	9075 !	2782
17:01	ZZZZZZ	7405	62758	7603	2709
17:05	ZZZZZZ	6770	58832	6926	2773
17:09	ZZZZZZ	7254	59878	7519	2615
17:14	ZZZZZZ	6722	59202	6913	2837
17:18	ZZZZZZ	7395	60262	7833	2535
17:22	MA13319-CCV10	6312	55320	6663	2512
17:26	MA13319-CCB10	6494	57006	6642	2882
17:30	ZZZZZZ	7004	59221	7194	2674
17:34	ZZZZZZ	7846	62870	8428	2490
17:38	ZZZZZZ	6889	59552	7193	2694
17:42	ZZZZZZ	7501	61196	8096	2523
17:46	ZZZZZZ	7334	59529	7930	2510
17:50	ZZZZZZ	6707	58823	7087	2700
17:55	ZZZZZZ	7300	63421	7724	2692
17:59	ZZZZZZ	7216	61329	7741	2637
18:03	ZZZZZZ	6959	59273	7528	2634
18:07	ZZZZZZ	6315	55762	6762	2790
18:11	MA13319-CCV11	6134	55163	6730	2475
18:15	MA13319-CCB11	6340	57438	6689	2851
18:20	MA13319-CRIA2	6336	56630	6723	2781
18:24	MA13319-ICSA2	5647	48520	6409	2174

INTERNAL STANDARD SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13319
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:28	MA13319-ICSAB2	5629	48681	6459	2143
18:32	MA13319-CCV12	6079	54607	6638	2461
18:36	MA13319-CCB12	6346	57696	6719	2875

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	60-125 %
Istd#2	Yttrium (3600)	60-125 %
Istd#3	Yttrium (3710)	60-125 %
Istd#4	Indium	60-125 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA13319 Units: ug/l

Time:			08:37		09:16		10:06		10:56	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	20	1	0.30	<20	0.70	<20	1.0	<20	0.60	<20
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	5.0	.2	anr							
Cadmium	4.0	.2	anr							
Calcium	5000	50								
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.30	<25	0.80	<25	0.50	<25	0.30	<25
Iron	300	17	anr							
Lead	20	1	-0.30	<20	-0.60	<20	-1.1	<20	-0.50	<20
Magnesium	5000	35								
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200								
Selenium	20	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500								
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	0.10	<20	0.20	<20	0.20	<20	0.10	<20

(*) Outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST FA35653

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA13319 Units: ug/l

Time:			11:47		13:07		13:59		14:56	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	20	1	0.80	<20	0.90	<20	1.7	<20	1.8	<20
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	5.0	.2	anr							
Cadmium	4.0	.2	anr							
Calcium	5000	50								
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.20	<25	0.10	<25	0.40	<25	0.30	<25
Iron	300	17	anr							
Lead	20	1	-0.40	<20	-0.70	<20	0.30	<20	0.0	<20
Magnesium	5000	35								
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200								
Selenium	20	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500								
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	0.0	<20	0.10	<20	0.0	<20	0.20	<20

(*) Outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST FA35653

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA13319 Units: ug/l

Time:			15:48		16:37		17:26		18:15	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	20	1	1.0	<20	1.9	<20	1.3	<20	1.2	<20
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	5.0	.2	anr							
Cadmium	4.0	.2	anr							
Calcium	5000	50								
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.60	<25	-0.20	<25	0.20	<25	0.30	<25
Iron	300	17	anr							
Lead	20	1	-0.50	<20	0.30	<20	0.20	<20	-0.30	<20
Magnesium	5000	35								
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200								
Selenium	20	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500								
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	0.20	<20	0.10	<20	0.10	<20	0.10	<20

(*) Outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST FA35653

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA13319 Units: ug/l

Time:			18:36	
Sample ID:			CCB12	
Metal	RL	IDL	raw	final
Aluminum	200	14	anr	
Antimony	20	1	1.5	<20
Arsenic	10	1.3	anr	
Barium	200	1	anr	
Beryllium	5.0	.2	anr	
Cadmium	4.0	.2	anr	
Calcium	5000	50		
Chromium	10	1	anr	
Cobalt	50	.2	anr	
Copper	25	1	0.40	<25
Iron	300	17	anr	
Lead	20	1	0.70	<20
Magnesium	5000	35		
Manganese	15	.5	anr	
Molybdenum	50	.3	anr	
Nickel	40	.4	anr	
Potassium	10000	200		
Selenium	20	2.4	anr	
Silver	10	.7	anr	
Sodium	10000	500		
Strontium	10	.5		
Thallium	10	1.1	anr	
Tin	50	.9		
Titanium	10	.5		
Vanadium	50	.5	anr	
Zinc	20	3	0.0	<20

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA13319 Units: ug/l

Time:		08:31			09:07			10:02	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1990	99.5	2000	2050	102.5	2000	2020	101.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt	anr								
Copper	2000	2010	100.5	2000	2010	100.5	2000	2000	100.0
Iron	anr								
Lead	2000	2000	100.0	2000	1980	99.0	2000	1980	99.0
Magnesium									
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2010	100.5	2000	2040	102.0	2000	2030	101.5

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA13319 Units: ug/l

Time:		10:52			11:43			13:03	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2040	102.0	2000	1990	99.5	2000	2020	101.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt	anr								
Copper	2000	2010	100.5	2000	1960	98.0	2000	1990	99.5
Iron	anr								
Lead	2000	1990	99.5	2000	1910	95.5	2000	1970	98.5
Magnesium									
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2040	102.0	2000	1970	98.5	2000	2020	101.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA13319 Units: ug/l

Time:		13:55			14:50			15:44	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1970	98.5	2000	1960	98.0	2000	1950	97.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt	anr								
Copper	2000	1970	98.5	2000	1970	98.5	2000	1980	99.0
Iron	anr								
Lead	2000	1950	97.5	2000	1950	97.5	2000	1950	97.5
Magnesium									
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	1980	99.0	2000	1980	99.0	2000	1970	98.5

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA13319 Units: ug/l

Time:		16:33			17:22			18:11	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1930	96.5	2000	1960	98.0	2000	2010	100.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt	anr								
Copper	2000	1990	99.5	2000	2000	100.0	2000	1990	99.5
Iron	anr								
Lead	2000	1960	98.0	2000	1980	99.0	2000	1970	98.5
Magnesium									
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	1970	98.5	2000	1990	99.5	2000	2010	100.5

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA13319 Units: ug/l

Time:		18:32	
Sample ID:	CCV	CCV12	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	2000	2010	100.5
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Cadmium	anr		
Calcium			
Chromium	anr		
Cobalt	anr		
Copper	2000	1990	99.5
Iron	anr		
Lead	2000	1960	98.0
Magnesium			
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Potassium			
Selenium	anr		
Silver	anr		
Sodium			
Strontium			
Thallium	anr		
Tin			
Titanium			
Vanadium	anr		
Zinc	2000	2000	100.0

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA13319 Units: ug/l

Time:		08:24	
Sample ID:	HSTD	HSTD1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	4000	4010	100.3
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Cadmium	anr		
Calcium			
Chromium	anr		
Cobalt	anr		
Copper	4000	3990	99.8
Iron	anr		
Lead	4000	4030	100.8
Magnesium			
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Potassium			
Selenium	anr		
Silver	anr		
Sodium			
Strontium			
Thallium	anr		
Tin			
Titanium			
Vanadium	anr		
Zinc	4000	3980	99.5

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA13319 Units: ug/l

Time:			08:45		18:20	
Sample ID:	CRI	CRIA	CRIA1		CRIA2	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	400	200	anr			
Antimony	10	5.0	5.3	106.0	5.3	106.0
Arsenic	20	10	anr			
Barium	400	200	anr			
Beryllium	10	5.0	anr			
Cadmium	10	5.0	anr			
Calcium	2000	1000				
Chromium	20	10	anr			
Cobalt	100	50	anr			
Copper	50	25	26.5	106.0	26.0	104.0
Iron	600	300	anr			
Lead	10	5.0	4.1	82.0	4.3	86.0
Magnesium	10000	5000				
Manganese	30	15	anr			
Molybdenum	100	50	anr			
Nickel	80	40	anr			
Potassium	20000	10000				
Selenium	20	10	anr			
Silver	20	10	anr			
Sodium	20000	10000				
Strontium	20	10				
Thallium	20	10	anr			
Tin	100	50				
Titanium	20	10				
Vanadium	100	50	anr			
Zinc	40	20	22.1	110.5	21.6	108.0

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB080216M1.ICP Date Analyzed: 08/02/16 Methods: SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA13319 Units: ug/l

Time:			08:53		08:58		18:24		18:28	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	513000	102.6	510000	102.0	499000	99.8	496000	99.2
Antimony		1000	0.60		1040	104.0	0.90		1020	102.0
Arsenic		1000	-0.90		1110	111.0	-0.80		1070	107.0
Barium		500	-0.40		529	105.8	-0.30		527	105.4
Beryllium		500	0.0		498	99.6	0.0		487	97.4
Cadmium		1000	0.0		966	96.6	-0.20		952	95.2
Calcium	500000	500000	491000	98.2	487000	97.4	476000	95.2	466000	93.2
Chromium		500	-0.10		526	105.2	-0.20		508	101.6
Cobalt		500	0.20		484	96.8	0.10		476	95.2
Copper		500	-0.50		537	107.4	0.20		534	106.8
Iron	200000	200000	184000	92.0	180000	90.0	181000	90.5	176000	88.0
Lead		1000	-0.20		961	96.1	0.10		958	95.8
Magnesium	500000	500000	515000	103.0	507000	101.4	496000	99.2	485000	97.0
Manganese		500	0.20		511	102.2	0.10		505	101.0
Molybdenum		1000	0.20		1020	102.0	0.0		999	99.9
Nickel		1000	0.20		984	98.4	0.30		957	95.7
Potassium			68.6		83.9		54.7		70.3	
Selenium		1000	0.0		1040	104.0	2.2		1020	102.0
Silver		1000	0.10		1000	100.0	0.20		993	99.3
Sodium			159		182		181		198	
Strontium		1000	0.0		990	99.0	2.0		1000	100.0
Thallium		1000	0.80		956	95.6	-1.1		954	95.4
Tin		1000	2.8		964	96.4	2.0		925	92.5
Titanium		1000	-0.60		993	99.3	-0.70		995	99.5
Vanadium		500	-0.40		476	95.2	0.0		467	93.4
Zinc		1000	-0.50		969	96.9	-0.60		948	94.8

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13320
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:22	MA13320-STD1	1		STDA
08:26	MA13320-STD2	1		STDB
08:30	MA13320-STD3	1		STDC
08:33	MA13320-STD4	1		STDD
08:37	MA13320-HSTD1	1		
08:44	MA13320-ICV1	1		
08:49	MA13320-ICB1	1		
09:01	MA13320-CRIA1	1		
09:07	MA13320-ICSA1	1		
09:13	MA13320-ICSAB1	1		
09:18	MA13320-CCV1	1		
09:24	MA13320-CCB1	1		
09:29	MP30672-MB1	1		
09:33	MP30672-B1	1		
09:37	FA35681-1	1		(sample used for QC only; not part of login FA35653)
09:42	MP30672-D1	1		
09:46	MP30672-SD1	5		
09:51	MP30672-PS1	1		
09:55	MP30672-S1	1		
10:00	MP30672-S2	1		
10:04	ZZZZZZ	1		
10:09	ZZZZZZ	1		
10:13	MA13320-CCV2	1		
10:17	MA13320-CCB2	1		
10:22	ZZZZZZ	1		
10:26	ZZZZZZ	1		
10:31	ZZZZZZ	1		
10:36	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:45	ZZZZZZ	1		
10:49	ZZZZZZ	1		
10:54	ZZZZZZ	1		
10:58	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13320
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:03	ZZZZZZ	1		
11:07	MA13320-CCV3	1		
11:11	MA13320-CCB3	1		
11:16	ZZZZZZ	1		
11:20	ZZZZZZ	1		
11:25	ZZZZZZ	1		
11:29	ZZZZZZ	1		
11:34	ZZZZZZ	1		
11:38	ZZZZZZ	1		
11:42	ZZZZZZ	1		
11:47	MP30665-S1	10		
11:51	MP30665-S2	10		
11:55	ZZZZZZ	20		
12:00	MA13320-CCV4	1		
12:04	MA13320-CCB4	1		
12:08	ZZZZZZ	2		
12:13	ZZZZZZ	2		
12:17	FA35653-1	4		
12:21	FA35653-2	4		
12:26	FA35653-3	4		
12:30	FA35653-4	4		
12:35	FA35653-5	10		
---------->	Last reportable sample/prep for job FA35653			
12:39	ZZZZZZ	4		
12:43	ZZZZZZ	2		
12:48	ZZZZZZ	10		
12:52	MA13320-CCV5	1		
12:56	MA13320-CCB5	1		
13:08	MP30674-MB1	1		
13:12	MP30674-B1	1		
13:16	FA35779-3	1		(sample used for QC only; not part of login FA35653)
13:21	MP30674-D1	1		
13:25	MP30674-SD1	5		
13:30	MP30674-PS1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13320
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:34	MP30674-S1	1		
13:38	MP30674-S2	1		
13:49	ZZZZZZ	1		
13:54	ZZZZZZ	1		
13:58	MA13320-CCV6	1		
14:02	MA13320-CCB6	1		
14:07	ZZZZZZ	1		
14:11	ZZZZZZ	1		
14:16	ZZZZZZ	1		
14:20	ZZZZZZ	1		
14:25	ZZZZZZ	1		
14:29	MA13320-CRIA2	1		
14:34	MA13320-ICSA2	1		
14:38	MA13320-ICSAB2	1		
14:43	MA13320-CCV7	1		
14:47	MA13320-CCB7	1		

----------> Last reportable CCB for job FA35653
Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13320
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:22	MA13320-STD1	5369	39948	4161	2372
08:26	MA13320-STD2	5303	39212	4152	2267
08:30	MA13320-STD3	5143	39045	4134	2144
08:33	MA13320-STD4	4937	38186	4083	1987
08:37	MA13320-HSTD1	4927	38109	4066	1988
08:44	MA13320-ICV1	5096	38925	4151	2128
08:49	MA13320-ICB1	5384 R	40882 R	4232 R	2433 R
09:01	MA13320-CRIA1	5344	40264	4235	2374
09:07	MA13320-ICSA1	4700	35370	3876	1841
09:13	MA13320-ICSAB1	4694	35635	3846	1823
09:18	MA13320-CCV1	5106	39043	4120	2137
09:24	MA13320-CCB1	5385	40666	4199	2424
09:29	MP30672-MB1	5396	40867	4188	2432
09:33	MP30672-B1	5275	39897	4154	2250
09:37	FA35681-1	6117	46054	4799	2095
09:42	MP30672-D1	6187	46280	4808	2083
09:46	MP30672-SD1	5584	41631	4253	2323
09:51	MP30672-PS1	6096	45887	4736	2083
09:55	MP30672-S1	6157	46381	4811	1998
10:00	MP30672-S2	6291	47348	4912	1972
10:04	ZZZZZZ	6199	46625	4811	2093
10:09	ZZZZZZ	6429	47406	4835	1987
10:13	MA13320-CCV2	5204	39195	4022	2156
10:17	MA13320-CCB2	5475	40884	4102	2446
10:22	ZZZZZZ	6592	48809	4985	2018
10:26	ZZZZZZ	6184	45881	4667	2081
10:31	ZZZZZZ	6225	46214	4681	2028
10:36	ZZZZZZ	5957	43804	4446	2100
10:40	ZZZZZZ	6212	46032	4640	2066
10:45	ZZZZZZ	6019	45407	4619	2111
10:49	ZZZZZZ	6052	45093	4576	2205
10:54	ZZZZZZ	6072	45691	4575	2181
10:58	ZZZZZZ	6145	46020	4622	2240

INTERNAL STANDARD SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13320
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:03	ZZZZZZ	6095	45469	4543	2235
11:07	MA13320-CCV3	5233	39141	3969	2157
11:11	MA13320-CCB3	5504	41142	4034	2445
11:16	ZZZZZZ	5873	44229	4425	2184
11:20	ZZZZZZ	6032	45425	4591	2099
11:25	ZZZZZZ	6179	46171	4641	2174
11:29	ZZZZZZ	6076	45445	4542	2263
11:34	ZZZZZZ	6165	45888	4558	2227
11:38	ZZZZZZ	5693	41927	4154	2186
11:42	ZZZZZZ	5791	43190	4229	2365
11:47	MP30665-S1	5526	41209	4080	2320
11:51	MP30665-S2	5537	41260	4088	2320
11:55	ZZZZZZ	5468	41158	4074	2362
12:00	MA13320-CCV4	5225	39132	3927	2156
12:04	MA13320-CCB4	5494	41044	3998	2442
12:08	ZZZZZZ	6137	45716	4489	2352
12:13	ZZZZZZ	5578	41603	4101	2242
12:17	FA35653-1	6312	46917	4682	2271
12:21	FA35653-2	5872	43410	4309	2266
12:26	FA35653-3	6271	47033	4628	2306
12:30	FA35653-4	6166	45873	4606	2135
12:35	FA35653-5	6020	44736	4446	2331
12:39	ZZZZZZ	5970	44216	4349	2411
12:43	ZZZZZZ	5854	41932	4147	2223
12:48	ZZZZZZ	5460	40544	3999	2284
12:52	MA13320-CCV5	5250	39155	3900	2155
12:56	MA13320-CCB5	5500	40670	3984	2432
13:08	MP30674-MB1	5498	41217	4006	2437
13:12	MP30674-B1	5336	39643	3941	2240
13:16	FA35779-3	6158	45176	4521	2219
13:21	MP30674-D1	5804	42749	4223	2233
13:25	MP30674-SD1	5637	41716	4074	2372
13:30	MP30674-PS1	6117	45116	4456	2189

INTERNAL STANDARD SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
Analyst: LM Run ID: MA13320
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:34	MP30674-S1	5907	43351	4366	2095
13:38	MP30674-S2	5787	42465	4240	2136
13:49	ZZZZZZ	6020	44573	4390	2243
13:54	ZZZZZZ	6055	44966	4474	2204
13:58	MA13320-CCV6	5263	39218	3862	2155
14:02	MA13320-CCB6	5509	40642	3948	2422
14:07	ZZZZZZ	6063	44918	4462	2169
14:11	ZZZZZZ	6164	45561	4541	2113
14:16	ZZZZZZ	6182	45905	4550	2119
14:20	ZZZZZZ	6203	45859	4538	2112
14:25	ZZZZZZ	6366	47044	4653	2114
14:29	MA13320-CRIA2	5487	40327	3923	2382
14:34	MA13320-ICSA2	4829	35530	3610	1851
14:38	MA13320-ICSAB2	4803	35528	3599	1823
14:43	MA13320-CCV7	5235	38860	3780	2135
14:47	MA13320-CCB7	5489	40567	3909	2416

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	60-125 %
Istd#2	Yttrium (3600)	60-125 %
Istd#3	Yttrium (3710)	60-125 %
Istd#4	Indium	60-125 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA13320 Units: ug/l

Time:			08:49		09:24		10:17		11:11	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	20	1	0.40	<20	1.6	<20	1.3	<20	1.3	<20
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	5.0	.2	anr							
Cadmium	4.0	.2	anr							
Calcium	5000	50	anr							
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.50	<25	0.60	<25	0.50	<25	0.40	<25
Iron	300	17	anr							
Lead	20	1	-0.10	<20	-0.20	<20	-0.20	<20	-0.20	<20
Magnesium	5000	35	anr							
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200	anr							
Selenium	20	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500	anr							
Strontium	10	.5	anr							
Thallium	10	1.1	anr							
Tin	50	.9	anr							
Titanium	10	.5	anr							
Vanadium	50	.5	anr							
Zinc	20	3	0.10	<20	0.30	<20	0.30	<20	0.30	<20

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA13320 Units: ug/l

Time:			12:04		12:56		14:02		14:47	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14								
Antimony	20	1	2.2	<20	1.3	<20	1.6	<20	1.3	<20
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	5.0	.2								
Cadmium	4.0	.2	anr							
Calcium	5000	50								
Chromium	10	1	anr							
Cobalt	50	.2								
Copper	25	1	-0.10	<25	0.20	<25	0.30	<25	0.50	<25
Iron	300	17								
Lead	20	1	-0.20	<20	0.0	<20	0.0	<20	0.0	<20
Magnesium	5000	35								
Manganese	15	.5								
Molybdenum	50	.3								
Nickel	40	.4								
Potassium	10000	200								
Selenium	20	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500								
Strontium	10	.5								
Thallium	10	1.1								
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5								
Zinc	20	3	0.20	<20	0.20	<20	0.20	<20	0.30	<20

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA13320 Units: ug/l

Time:		08:44			09:18			10:13	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2010	100.5	2000	2040	102.0	2000	1990	99.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2010	100.5	2000	2030	101.5	2000	2030	101.5
Iron	anr								
Lead	2000	2000	100.0	2000	2020	101.0	2000	2000	100.0
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Vanadium	anr								
Zinc	2000	2000	100.0	2000	2050	102.5	2000	2060	103.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA13320 Units: ug/l

Time:		11:07			12:00			12:52	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony	2000	1980	99.0	2000	1980	99.0	2000	1960	98.0
Arsenic	anr								
Barium	anr								
Beryllium									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	2000	2030	101.5	2000	2040	102.0	2000	2040	102.0
Iron									
Lead	2000	2000	100.0	2000	2000	100.0	2000	1980	99.0
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	2000	2070	103.5	2000	2070	103.5	2000	2070	103.5

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA13320 Units: ug/l

Time:		13:58			14:43	
Sample ID:	CCV	CCV6		CCV	CCV7	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	2000	1960	98.0	2000	1950	97.5
Arsenic	anr					
Barium	anr					
Beryllium						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	2000	2050	102.5	2000	2060	103.0
Iron						
Lead	2000	1980	99.0	2000	1990	99.5
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	2000	2060	103.0	2000	2070	103.5

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA13320 Units: ug/l

Time:		08:37	
Sample ID:	HSTD	HSTD1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	4000	4040	101.0
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	4000	3980	99.5
Iron	anr		
Lead	4000	4020	100.5
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Potassium	anr		
Selenium	anr		
Silver	anr		
Sodium	anr		
Strontium	anr		
Thallium	anr		
Tin	anr		
Titanium	anr		
Vanadium	anr		
Zinc	4000	3950	98.8

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA13320 Units: ug/l

Time:			09:01		14:29	
Sample ID:	CRI	CRIA	CRIA1		CRIA2	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	400	200	anr			
Antimony	10	5.0	4.4	88.0	5.0	100.0
Arsenic	20	10	anr			
Barium	400	200	anr			
Beryllium	10	5.0	anr			
Cadmium	10	5.0	anr			
Calcium	2000	1000	anr			
Chromium	20	10	anr			
Cobalt	100	50	anr			
Copper	50	25	26.7	106.8	26.7	106.8
Iron	600	300	anr			
Lead	10	5.0	4.4	88.0	4.8	96.0
Magnesium	10000	5000	anr			
Manganese	30	15	anr			
Molybdenum	100	50	anr			
Nickel	80	40	anr			
Potassium	20000	10000	anr			
Selenium	20	10	anr			
Silver	20	10	anr			
Sodium	20000	10000	anr			
Strontium	20	10	anr			
Thallium	20	10	anr			
Tin	100	50	anr			
Titanium	20	10	anr			
Vanadium	100	50	anr			
Zinc	40	20	22.0	110.0	22.4	112.0

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA080316M1.ICP Date Analyzed: 08/03/16 Methods: SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA13320 Units: ug/l

Time:			09:07		09:13		14:34		14:38	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	504000	100.8	508000	101.6	525000	105.0	527000	105.4
Antimony		1000	2.0		1060	106.0	0.90		1010	101.0
Arsenic		1000	0.0		1100	110.0	-2.8		1050	105.0
Barium		500	-0.10		538	107.6	0.50		563	112.6
Beryllium		500	0.0		518	103.6	-0.10		542	108.4
Cadmium		1000	-0.70		983	98.3	-1.5		946	94.6
Calcium	500000	500000	496000	99.2	496000	99.2	525000	105.0	519000	103.8
Chromium		500	-0.10		519	103.8	0.10		516	103.2
Cobalt		500	0.50		495	99.0	0.60		487	97.4
Copper		500	0.20		554	110.8	0.50		561	112.2
Iron	200000	200000	190000	95.0	186000	93.0	189000	94.5	185000	92.5
Lead		1000	0.0		1030	103.0	-2.1		1000	100.0
Magnesium	500000	500000	532000	106.4	524000	104.8	549000	109.8	540000	108.0
Manganese		500	0.40		512	102.4	0.40		533	106.6
Molybdenum		1000	0.0		1030	103.0	-0.30		1010	101.0
Nickel		1000	0.0		985	98.5	0.10		998	99.8
Potassium			33.4		-7.0		24.5		51.8	
Selenium		1000	0.0		1050	105.0	-1.9		1010	101.0
Silver		1000	-0.10		1040	104.0	-0.20		1050	105.0
Sodium			169		195		199		221	
Strontium		1000	-0.10		1020	102.0	-0.80		1070	107.0
Thallium		1000	-1.3		1010	101.0	1.4		981	98.1
Tin		1000	3.1		964	96.4	3.5		964	96.4
Titanium		1000	-0.70		1010	101.0	-0.20		966	96.6
Vanadium		500	0.0		476	95.2	0.50		491	98.2
Zinc		1000	-0.80		976	97.6	-1.4		982	98.2

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP30665 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 08/01/16

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.7	1.8		
Antimony	1.0	.05	.065	0.025	<1.0
Arsenic	0.50	.065	.1		
Barium	10	.05	.05		
Beryllium	0.25	.01	.025		
Cadmium	0.20	.01	.025		
Calcium	250	2.5	2.5		
Chromium	0.50	.05	.05		
Cobalt	2.5	.01	.025		
Copper	1.3	.05	.05	-0.010	<1.3
Iron	15	.85	.85		
Lead	1.0	.05	.05	0.025	<1.0
Magnesium	250	1.8	1.8		
Manganese	0.75	.025	.025		
Molybdenum	2.5	.015	.025		
Nickel	2.0	.02	.025		
Potassium	500	10	10		
Selenium	1.0	.12	.12		
Silver	0.50	.035	.041		
Sodium	500	25	25		
Strontium	0.50	.025	.025		
Thallium	0.50	.055	.055		
Tin	2.5	.045	.045		
Titanium	0.50	.025	.025		
Vanadium	2.5	.025	.025		
Zinc	1.0	.15	.15	0.11	<1.0

Associated samples MP30665: FA35653-1, FA35653-2, FA35653-3, FA35653-4, FA35653-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP30665
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:			08/01/16					08/01/16	
Metal	FA35738-10 Original DUP		RPD	QC Limits	FA35738-10 Original MS		Spikelot MPFLICP2 % Rec		QC Limits
Aluminum									
Antimony	0.48	0.32 (a)	40.0 (b)	0-20	0.48	4.3 (a)	19.6	19.5N(d)	80-120
Arsenic	anr								
Barium	anr								
Beryllium									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	8.5	8.5 (a)	0.0	0-20	8.5	16.7 (a)	9.79	83.8	80-120
Iron									
Lead	41.5	32.3 (a)	24.9*(c)	0-20	41.5	638	19.6	3047.0Nd	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	121	105 (a)	14.2	0-20	121	126 (a)	19.6	25.5 (e)	80-120

Associated samples MP30665: FA35653-1, FA35653-2, FA35653-3, FA35653-4, FA35653-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Sample dilution required due to difficult matrix.
(b) RPD acceptable due to low duplicate and sample concentrations.
(c) High RPD due to possible sample non-homogeneity.
(d) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.
(e) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP30665 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 08/01/16

Metal	FA35738-10 Original	MSD	Spikelot MPFLICP2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	0.48	4.2 (a)	18.6	20.0N(b)	2.4	20
Arsenic	anr					
Barium	anr					
Beryllium						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	8.5	19.8 (a)	9.31	121.4N(b	17.0	20
Iron						
Lead	41.5	988	18.6	5083.7Nb	43.1 (c)	20
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	121	514 (a)	18.6	2110.8(d	121.3 (c)	20

Associated samples MP30665: FA35653-1, FA35653-2, FA35653-3, FA35653-4, FA35653-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Sample dilution required due to difficult matrix.
(b) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.
(c) High RPD due to possible sample non-homogeneity.
(d) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP30665
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 08/01/16

Metal	BSP Result	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum				
Antimony	24.4	25	97.6	80-120
Arsenic	anr			
Barium	anr			
Beryllium				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	12.3	12.5	98.4	80-120
Iron				
Lead	23.1	25	92.4	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	24.5	25	98.0	80-120

Associated samples MP30665: FA35653-1, FA35653-2, FA35653-3, FA35653-4, FA35653-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP30665 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date: 08/01/16

Metal	FA35738-10 Original	SDL 2:10	%DIF	QC Limits
Aluminum				
Antimony	12.4	0.00	100.0(a)	0-10
Arsenic	anr			
Barium	anr			
Beryllium				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	221	247	12.1*(b)	0-10
Iron				
Lead	1080	1130	4.7	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	3140	3640	16.0*(b)	0-10

Associated samples MP30665: FA35653-1, FA35653-2, FA35653-3, FA35653-4, FA35653-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

POST DIGESTATE SPIKE SUMMARY

Login Number: FA35653
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP30665 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date: 08/01/16

Metal	Sample ml	Final ml	FA35738-10 Raw	FA35738-10 Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony	9.8	10	12.4	12.152	104.6	0.2	5	100	92.4	80-120
Arsenic										
Barium										
Beryllium										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper	9.8	10	220.7	216.286	316.7	0.2	5	100	100.4	80-120
Iron										
Lead	9.8	10	1076	1054.48	1131	0.2	2.5	50	153.0*(a	80-120
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc	9.8	10	3136	3073.28	3354	0.2	12.5	250	112.3	80-120

Associated samples MP30665: FA35653-1, FA35653-2, FA35653-3, FA35653-4, FA35653-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested
(a) Spike recovery indicates matrix interference and/or outside control limits due to high level in sample relative to spike amount.

Instrument Detection Limits

Job Number: FA35653
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Instrument ID: SSTRACE1 **Effective Date:** 01/27/15

Analyte	IDL ug/l
Aluminum	14
Antimony	1
Arsenic	1.3
Barium	1
Beryllium	.2
Cadmium	.2
Calcium	50
Chromium	1
Cobalt	.2
Copper	1
Iron	17
Lead	1
Magnesium	35
Manganese	.5
Molybdenum	.3
Nickel	.4
Potassium	200
Selenium	2.4
Silicon	5
Silver	.7
Sodium	500
Strontium	.5
Sulfur	5
Thallium	1.1
Tin	.9
Titanium	.5
Vanadium	.5
Zinc	3

The above applies to the following instrument runs:
MA13320

Instrument Detection Limits

Job Number: FA35653
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Instrument ID: SSTRACE2 **Effective Date:** 01/27/15

Analyte	IDL ug/l
Aluminum	14
Antimony	1
Arsenic	1.3
Barium	1
Beryllium	.2
Cadmium	.2
Calcium	50
Chromium	1
Cobalt	.2
Copper	1
Iron	17
Lead	1
Magnesium	35
Manganese	.5
Molybdenum	.3
Nickel	.4
Potassium	200
Selenium	2.4
Silicon	5
Silver	.7
Sodium	500
Strontium	.5
Sulfur	5
Thallium	1.1
Tin	.9
Titanium	.5
Vanadium	.5
Zinc	3

The above applies to the following instrument runs:
MA13319

Instrument Linear Ranges

Job Number: FA35653
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Instrument ID: SSTRACE1 **Effective Date:** 08/13/13

Analyte	Linear Range ug/l
Aluminum	500000
Antimony	10000
Arsenic	10000
Barium	10000
Beryllium	10000
Cadmium	10000
Calcium	500000
Chromium	10000
Cobalt	10000
Copper	10000
Iron	500000
Lead	10000
Magnesium	500000
Manganese	10000
Molybdenum	10000
Nickel	10000
Potassium	80000
Selenium	10000
Silver	1000
Sodium	80000
Strontium	10000
Sulfur	10000
Thallium	10000
Tin	10000
Titanium	10000
Vanadium	10000
Zinc	10000

The above applies to the following instrument runs:
MA13320

Instrument Linear Ranges

Job Number: FA35653
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Instrument ID: SSTRACE2 **Effective Date:** 10/22/10

Analyte	Linear Range ug/l
Aluminum	500000
Antimony	10000
Arsenic	10000
Barium	10000
Beryllium	10000
Cadmium	10000
Calcium	500000
Chromium	10000
Cobalt	10000
Copper	10000
Iron	500000
Lead	10000
Magnesium	500000
Manganese	10000
Molybdenum	10000
Nickel	10000
Potassium	80000
Selenium	10000
Silver	1000
Sodium	80000
Strontium	10000
Thallium	10000
Tin	10000
Titanium	10000
Vanadium	10000
Zinc	10000

The above applies to the following instrument runs:
MA13319

Metals Analysis

Raw Data

Zoom In ▶ Zoom Out

Sample Name: Blank Acquired: 8/2/2016 8:09:03 Type: Cal
Method: 60102007_041712(v232) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0012	-.0085	-.0003	.0096	.0002	.0048	.0002	.0004	.0001
Stddev	.0001	.0017	.0002	.0019	.0002	.0003	.0002	.0001	.0001
%RSD	7.862	20.39	54.46	19.75	89.74	6.221	117.8	14.37	103.6
#1	-.0010	-.0067	-.0005	.0115	.0000	.0049	.0001	.0004	.0000
#2	-.0012	-.0086	-.0002	.0096	.0003	.0045	.0000	.0005	.0001
#3	-.0012	-.0102	-.0003	.0077	.0004	.0050	.0004	.0004	.0002

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0057	.0012	-.0006	-.0004	.0004	.0007	.0031	.0004	-.0013
Stddev	.0000	.0002	.0013	.0003	.0000	.0001	.0008	.0003	.0009
%RSD	.7632	14.51	207.6	78.02	4.993	14.67	24.58	76.62	66.59
#1	.0057	.0014	-.0011	-.0008	.0005	.0008	.0023	.0005	-.0004
#2	.0058	.0011	-.0015	-.0004	.0004	.0006	.0033	.0001	-.0014
#3	.0057	.0011	.0008	-.0001	.0004	.0008	.0038	.0007	-.0022

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0004	-.0001	.0120	.0002	.0038	.0009	-.0032	-.0002	.0035
Stddev	.0002	.0002	.0002	.0000	.0014	.0001	.0003	.0000	.0002
%RSD	59.75	164.6	1.432	10.70	36.03	11.60	9.668	15.92	4.800
#1	.0003	.0001	.0119	.0002	.0045	.0008	-.0035	-.0003	.0033
#2	.0002	-.0002	.0122	.0002	.0022	.0010	-.0031	-.0003	.0035
#3	.0007	-.0002	.0119	.0002	.0046	.0009	-.0029	-.0002	.0037

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2868.7	6423.4	56951.	6787.0
Stddev	4.5	1.3	265.	41.8
%RSD	.15783	.02097	.46597	.61600
#1	2873.9	6422.0	57124.	6750.0
#2	2866.0	6423.5	56645.	6832.3
#3	2866.1	6424.7	57083.	6778.7

◀ Zoom In ▶ Zoom Out

Sample Name: LowStd Acquired: 8/2/2016 8:12:39 Type: Cal
Method: 60102007_041712(v232) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0316	1.683	.1095	5.836	4.070	2.918	2.341	1.147	.1921	.3159
Stddev	.0002	.004	.0003	.010	.005	.006	.002	.001	.0006	.0004
%RSD	.7549	.2400	.2434	.1760	.1308	.1958	.0623	.0677	.3007	.1222
#1	.0318	1.679	.1097	5.825	4.066	2.914	2.342	1.147	.1928	.3162
#2	.0317	1.686	.1096	5.838	4.076	2.924	2.340	1.147	.1917	.3161
#3	.0313	1.685	.1092	5.845	4.067	2.915	2.339	1.146	.1919	.3155

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.527	1.228	.2534	1.284	.6479	3.625	.7736	.5245	.1232	.0774
Stddev	.003	.001	.0007	.003	.0011	.006	.0003	.0025	.0005	.0002
%RSD	.2065	.1006	.2907	.2129	.1641	.1629	.0443	.4791	.3661	.2273
#1	1.524	1.228	.2535	1.284	.6469	3.618	.7735	.5273	.1237	.0772
#2	1.530	1.229	.2540	1.287	.6477	3.629	.7732	.5239	.1228	.0774
#3	1.526	1.227	.2526	1.282	.6490	3.628	.7739	.5224	.1232	.0775

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.2177	.2729	8.036	.8432	.2472	.3054	1.457
Stddev	.0001	.0005	.009	.0020	.0011	.0000	.001
%RSD	.0520	.1751	.1145	.2377	.4472	.0060	.0816
#1	.2177	.2726	8.032	.8429	.2484	.3054	1.458
#2	.2178	.2726	8.046	.8454	.2469	.3054	1.456
#3	.2176	.2735	8.028	.8414	.2463	.3054	1.458

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2710.3	6414.9	56414.	6845.3
Stddev	4.8	5.3	282.	18.0
%RSD	.17798	.08193	.50038	.26308
#1	2705.3	6419.0	56584.	6856.5
#2	2714.9	6416.7	56088.	6824.5
#3	2710.8	6409.0	56570.	6854.8

◀ Zoom In ▶ Zoom Out

Sample Name: MidStd Acquired: 8/2/2016 8:16:17 Type: Cal
Method: 60102007_041712(v232) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1278	6.500	.4751	24.63	17.22	11.17	9.863	4.798	.8067	1.313
Stddev	.0003	.013	.0007	.01	.03	.03	.009	.006	.0018	.003
%RSD	.2623	.1962	.1386	.0429	.1467	.2424	.0933	.1261	.2245	.2398
#1	.1279	6.489	.4757	24.62	17.19	11.16	9.861	4.795	.8049	1.314
#2	.1280	6.496	.4744	24.64	17.22	11.15	9.855	4.793	.8085	1.316
#3	.1274	6.514	.4751	24.64	17.24	11.20	9.873	4.805	.8069	1.310

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.655	4.721	.9649	5.345	2.566	14.04	3.227	2.289	.5266	.3343
Stddev	.011	.013	.0019	.004	.004	.02	.005	.001	.0008	.0005
%RSD	.1968	.2672	.1986	.0837	.1344	.1632	.1462	.0624	.1503	.1482
#1	5.653	4.710	.9654	5.341	2.564	14.03	3.227	2.288	.5265	.3346
#2	5.646	4.719	.9628	5.349	2.565	14.03	3.222	2.288	.5259	.3337
#3	5.668	4.735	.9666	5.346	2.570	14.07	3.232	2.291	.5275	.3346

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.8594	1.090	32.32	3.373	1.071	1.227	6.129
Stddev	.0003	.002	.37	.004	.001	.002	.009
%RSD	.0312	.2240	1.141	.1183	.1129	.1648	.1550
#1	.8597	1.090	32.70	3.370	1.070	1.225	6.128
#2	.8592	1.088	31.97	3.377	1.071	1.229	6.120
#3	.8592	1.092	32.30	3.370	1.072	1.228	6.139

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2454.0	6120.9	54282.	6795.6
Stddev	2.7	8.4	207.	54.4
%RSD	.11081	.13740	.38217	.80006
#1	2454.5	6125.1	54517.	6797.5
#2	2456.4	6126.4	54204.	6849.0
#3	2451.1	6111.2	54125.	6740.3

◀ Zoom In ▶ Zoom Out

Sample Name: HighStd Acquired: 8/2/2016 8:19:36 Type: Cal
Method: 60102007_041712(v232) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.2573	13.00	.9446	48.33	33.46	22.04	19.17	9.343	1.570	2.575
Stddev	.0003	.02	.0017	.61	.07	.01	.03	.014	.003	.000
%RSD	.1355	.1436	.1788	1.267	.2032	.0549	.1697	.1533	.1791	.0133
#1	.2576	12.99	.9426	47.99	33.50	22.05	19.13	9.326	1.573	2.575
#2	.2569	13.02	.9454	47.97	33.50	22.05	19.19	9.350	1.568	2.574
#3	.2572	12.98	.9457	49.04	33.38	22.03	19.18	9.352	1.569	2.575

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	11.34	9.399	1.899	10.27	5.166	27.84	6.265	4.599	1.047	.6603
Stddev	.01	.009	.006	.06	.011	.02	.014	.006	.002	.0013
%RSD	.1058	.1008	.3201	.6255	.2203	.0715	.2185	.1424	.1941	.1926
#1	11.32	9.391	1.905	10.35	5.153	27.85	6.250	4.591	1.045	.6588
#2	11.35	9.409	1.892	10.24	5.171	27.85	6.275	4.603	1.048	.6609
#3	11.33	9.396	1.899	10.24	5.175	27.82	6.271	4.602	1.049	.6610

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.341	2.125	63.90	6.773	2.113	2.445	11.91
Stddev	.003	.007	.60	.052	.003	.003	.03
%RSD	.1472	.3095	.9329	.7737	.1603	.1252	.2395
#1	2.337	2.117	64.59	6.716	2.109	2.448	11.88
#2	2.343	2.130	63.59	6.819	2.114	2.442	11.94
#3	2.343	2.127	63.52	6.785	2.115	2.445	11.91

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2269.6	5884.9	52473.	6680.4
Stddev	5.9	18.7	110.	25.2
%RSD	.25866	.31803	.20922	.37773
#1	2276.3	5906.4	52365.	6671.4
#2	2265.8	5873.0	52470.	6708.9
#3	2266.7	5875.1	52584.	6660.9

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: HSTD Acquired: 8/2/2016 8:24:50 Type: QC
Method: 60102007_041712(v232) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4996	80.06	4.019	4.016	3.991	79.67	3.974	3.976	3.968	3.986
Stddev	.0015	.09	.003	.035	.007	.05	.005	.005	.013	.007
%RSD	.3092	.1080	.0781	.8787	.1718	.0683	.1361	.1163	.3288	.1822
#1	.4988	79.97	4.016	4.019	3.988	79.60	3.969	3.971	3.964	3.989
#2	.4987	80.14	4.019	3.979	3.987	79.71	3.980	3.981	3.958	3.977
#3	.5014	80.08	4.022	4.050	3.999	79.69	3.974	3.977	3.983	3.991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	80.04	80.15	79.35	3.937	4.013	79.75	3.972	4.031	4.014	4.007
Stddev	.35	.20	.14	.018	.003	.11	.006	.007	.001	.004
%RSD	.4396	.2556	.1744	.4709	.0677	.1422	.1578	.1666	.0260	.0931
#1	79.75	79.94	79.19	3.948	4.011	79.63	3.965	4.031	4.015	4.002
#2	79.94	80.17	79.41	3.916	4.016	79.85	3.978	4.025	4.014	4.008
#3	80.43	80.35	79.45	3.948	4.013	79.79	3.971	4.038	4.013	4.009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.489	3.969	4.009	3.995	3.994	3.989	3.975
Stddev	.004	.008	.088	.033	.008	.012	.010
%RSD	.0964	.1997	2.202	.8311	.1943	.2907	.2483
#1	4.489	3.962	3.908	3.980	3.995	3.988	3.965
#2	4.494	3.977	4.045	3.972	3.985	3.979	3.985
#3	4.485	3.968	4.073	4.033	4.000	4.002	3.977
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: HSTD Acquired: 8/2/2016 8:24:50 Type: QC
Method: 60102007_041712(v232) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2265.5	5865.9	52579.	6636.4
Stddev	3.6	13.8	180.	27.0
%RSD	.15677	.23513	.34166	.40722
#1	2267.4	5880.5	52595.	6667.0
#2	2267.6	5853.1	52751.	6626.0
#3	2261.4	5864.0	52392.	6616.1

Zoom In Zoom Out

Sample Name: ICV Acquired: 8/2/2016 8:31:15 Type: QC
Method: 60102007_041712(v232) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2536	41.35	1.989	2.121	2.034	42.88	2.022	2.027	2.013	2.007
Stddev	.0013	.04	.003	.004	.005	.04	.002	.002	.002	.003
%RSD	.4987	.0935	.1479	.1931	.2348	.1001	.1172	.0897	.0927	.1619
#1	.2521	41.39	1.988	2.126	2.039	42.88	2.020	2.025	2.011	2.007
#2	.2543	41.36	1.987	2.120	2.031	42.84	2.024	2.029	2.014	2.004
#3	.2543	41.31	1.993	2.118	2.030	42.92	2.023	2.028	2.013	2.011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.66	42.30	42.93	2.028	1.908	43.52	2.020	1.996	1.993	2.023
Stddev	.04	.06	.13	.005	.004	.01	.003	.001	.003	.004
%RSD	.1049	.1355	.2998	.2293	.2269	.0326	.1289	.0584	.1252	.2047
#1	41.68	42.36	42.87	2.024	1.903	43.53	2.017	1.995	1.994	2.020
#2	41.61	42.24	42.84	2.033	1.910	43.50	2.022	1.996	1.990	2.028
#3	41.69	42.30	43.08	2.028	1.911	43.52	2.021	1.997	1.994	2.021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2121	2.052	1.934	1.948	2.072	1.880	2.014
Stddev	.0007	.003	.005	.005	.008	.001	.003
%RSD	.3276	.1670	.2597	.2810	.4000	.0418	.1704
#1	.2124	2.049	1.939	1.942	2.081	1.880	2.011
#2	.2113	2.056	1.932	1.953	2.066	1.881	2.018
#3	.2126	2.050	1.930	1.948	2.068	1.880	2.014
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: ICV Acquired: 8/2/2016 8:31:15 Type: QC
Method: 60102007_041712(v232) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2439.3	6077.3	53970.	6737.6
Stddev	2.4	16.1	171.	74.7
%RSD	.09757	.26481	.31663	1.1089
#1	2441.4	6095.9	54121.	6817.3
#2	2439.8	6067.9	53785.	6726.5
#3	2436.7	6068.1	54006.	6669.1

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: ICB Acquired: 8/2/2016 8:37:48 Type: QC
Method: 60102007_041712(v232) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0043	.0001	-.0001	.0002	.0018	.0000	.0000	.0000	.0003
Stddev	.0002	.0072	.0003	.0002	.0001	.0019	.000	.0001	.0000	.0001
%RSD	38.57	169.3	201.6	139.1	32.73	103.3	503.3	215.7	742.4	35.81
#1	.0005	.0112	.0003	-.0001	.0002	-.0001	.0000	.0001	.0000	.0003
#2	.0003	.0049	.0003	-.0003	.0002	.0036	.0000	.0001	.0000	.0003
#3	.0007	-.0033	-.0002	.0000	.0003	.0020	.0000	.0000	.0000	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097	.0218	.0222	.0001	.0010	.0240	.0001	-.0003	.0003	-.0005
Stddev	.0014	.0190	.0155	.0000	.0002	.0117	.0002	.0003	.0007	.0003
%RSD	14.10	86.90	69.86	11.37	23.72	48.88	117.5	87.51	236.3	59.04
#1	.0109	.0007	.0046	.0001	.0012	.0359	.0003	-.0001	.0009	-.0008
#2	.0100	.0272	.0283	.0001	.0008	.0124	.0000	-.0002	-.0004	-.0002
#3	.0082	.0375	.0337	.0001	.0008	.0238	.0001	-.0006	.0004	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0006	.0001	.0006	-.0011	.0002	.0001
Stddev	.0005	.0001	.0000	.0001	.0005	.0001	.0000
%RSD	776.7	13.11	13.30	20.32	47.38	29.74	14.21
#1	.0005	.0007	.0001	.0008	-.0012	.0001	.0001
#2	-.0005	.0005	.0001	.0006	-.0005	.0002	.0001
#3	-.0002	.0006	.0001	.0006	-.0015	.0002	.0001
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: ICB Acquired: 8/2/2016 8:37:48 Type: QC
Method: 60102007_041712(v232) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2838.6	6279.2	56769.	6794.9
Stddev	5.1	7.7	268.	53.8
%RSD	.17866	.12241	.47208	.79220
#1	2837.7	6287.6	56761.	6855.1
#2	2844.1	6272.5	57040.	6751.3
#3	2834.1	6277.4	56504.	6778.4

Zoom In Zoom Out

Sample Name: CRIA Acquired: 8/2/2016 8:45:10 Type: QC
Method: 60102007_041712(v232) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0094	.2247	.0094	.2134	.0053	1.086	.0053	.0541	.0109	.0265
Stddev	.0003	.0055	.0005	.0007	.0000	.006	.0000	.0001	.0002	.0002
%RSD	3.137	2.440	4.852	.3214	.4690	.5643	.2239	.2746	1.524	.6372
#1	.0095	.2233	.0089	.2139	.0053	1.086	.0053	.0543	.0110	.0266
#2	.0091	.2308	.0098	.2127	.0053	1.080	.0053	.0540	.0107	.0263
#3	.0096	.2201	.0096	.2138	.0053	1.092	.0053	.0541	.0109	.0265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3220	10.59	5.396	.0162	.0507	10.64	.0442	.0041	.0053	.0098
Stddev	.0035	.03	.014	.0000	.0002	.02	.0001	.0005	.0010	.0008
%RSD	1.082	.2414	.2567	.2183	.4038	.2168	.2892	12.12	19.39	8.323
#1	.3196	10.61	5.382	.0162	.0504	10.62	.0443	.0046	.0063	.0106
#2	.3204	10.58	5.410	.0162	.0508	10.65	.0442	.0042	.0042	.0098
#3	.3260	10.56	5.395	.0162	.0507	10.66	.0441	.0036	.0054	.0090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1224	.0548	.0101	.0101	.0095	.0495	.0221
Stddev	.0002	.0003	.0001	.0000	.0010	.0003	.0001
%RSD	.1247	.6150	.6304	.2274	10.33	.5092	.4226
#1	.1222	.0545	.0101	.0101	.0102	.0493	.0221
#2	.1224	.0547	.0102	.0101	.0100	.0495	.0220
#3	.1225	.0551	.0102	.0101	.0084	.0498	.0222
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CRIA Acquired: 8/2/2016 8:45:10 Type: QC
Method: 60102007_041712(v232) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2759.0	6266.7	56247.	6813.8
Stddev	9.2	7.9	236.	44.0
%RSD	.33478	.12592	.41967	.64511
#1	2757.1	6262.5	56469.	6863.2
#2	2769.1	6275.8	55999.	6779.2
#3	2750.9	6261.9	56274.	6798.9

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Zoom In Zoom Out

Sample Name: ICSA Acquired: 8/2/2016 8:53:20 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	512.7	-.0009	-.0004	.0000	490.5	.0000	.0002	-.0001
Stddev	.0001	10.3	.0011	.0000	.000	4.7	.0001	.0001	.0000
%RSD	103.1	2.004	128.5	5.274	347.0	.9667	263.6	63.25	20.92
#1	.0000	508.6	-.0005	-.0004	.0000	485.3	.0000	.0002	-.0001
#2	.0002	524.4	.0000	-.0004	.0000	491.7	.0002	.0004	-.0001
#3	.0001	505.1	-.0021	-.0004	.0000	494.6	-.0001	.0001	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	183.9	.0686	515.0	.0002	.0002	.1590	.0002	-.0002
Stddev	.0004	.6	.0152	.7	.0001	.0003	.0087	.0001	.0038
%RSD	87.43	.3485	22.12	.1395	32.36	146.4	5.456	51.03	1982.
#1	-.0007	183.8	.0517	514.2	.0002	.0001	.1492	.0001	.0024
#2	-.0007	183.4	.0733	515.3	.0001	.0005	.1621	.0002	-.0046
#3	.0000	184.6	.0809	515.5	.0002	.0000	.1657	.0003	.0016
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0000	.0532	F.0028	.0000	-.0006	.0008	-.0004	-.0005
Stddev	.0034	.0022	.0009	.0005	.0003	.0001	.0009	.0003	.0000
%RSD	560.8	6045.	1.759	16.32	1824.	11.34	109.4	79.63	9.025
#1	-.0009	.0018	.0542	.0031	.0004	-.0006	.0013	-.0007	-.0005
#2	-.0018	-.0025	.0523	.0031	-.0001	-.0007	-.0002	-.0002	-.0005
#3	.0045	.0009	.0530	.0023	-.0002	-.0006	.0013	-.0002	-.0005
Check ?	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Zoom In Zoom Out

Sample Name: ICSA Acquired: 8/2/2016 8:53:20 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2171.7	5570.8	48672.	6513.0
Stddev	6.4	13.9	83.	40.9
%RSD	.29271	.24979	.17142	.62756
#1	2176.0	5579.3	48767.	6552.9
#2	2174.7	5578.4	48609.	6471.2
#3	2164.4	5554.7	48640.	6515.0

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 8/2/2016 8:58:31 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.000	509.5	1.110	.5294	.4982	487.2	.9662	.4835	.5264	.5365
Stddev	.002	6.9	.001	.0008	.0020	3.0	.0015	.0005	.0006	.0004
%RSD	.1977	1.359	.1173	.1541	.4106	.6103	.1590	.1008	.1199	.0683
#1	1.000	510.0	1.109	.5302	.4988	486.1	.9676	.4839	.5271	.5361
#2	.9979	516.2	1.111	.5295	.4999	490.6	.9646	.4829	.5259	.5366
#3	1.002	502.4	1.110	.5285	.4960	484.9	.9666	.4836	.5261	.5369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	180.4	.0839	507.2	.5110	1.017	.1820	.9841	.9605	1.035	1.044
Stddev	.6	.0212	.7	.0009	.001	.0089	.0013	.0032	.003	.001
%RSD	.3070	25.30	.1479	.1746	.1305	4.873	.1358	.3346	.2389	.1153
#1	180.2	.1069	506.9	.5118	1.019	.1730	.9851	.9610	1.037	1.046
#2	181.0	.0799	508.0	.5100	1.016	.1822	.9826	.9571	1.032	1.043
#3	179.9	.0650	506.6	.5112	1.017	.1907	.9847	.9635	1.036	1.044
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0928	.9642	.9901	.9933	.9564	.4764	.9691
Stddev	.0004	.0032	.0030	.0010	.0018	.0005	.0019
%RSD	.3931	.3319	.2986	.0968	.1910	.1034	.1957
#1	.0925	.9676	.9916	.9936	.9581	.4765	.9705
#2	.0932	.9613	.9920	.9922	.9545	.4769	.9669
#3	.0927	.9637	.9867	.9940	.9566	.4759	.9699
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 8/2/2016 8:58:31 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2133.6	5528.4	48499.	6532.7
Stddev	2.1	5.8	163.	48.7
%RSD	.09739	.10495	.33653	.74599
#1	2132.0	5522.7	48467.	6586.9
#2	2135.9	5534.3	48676.	6492.6
#3	2132.7	5528.2	48354.	6518.6

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 9:07:55 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2501	40.58	2.054	2.070	2.028	40.75	2.043	2.048	2.060	2.009
Stddev	.0004	.08	.003	.003	.000	.07	.002	.001	.006	.005
%RSD	.1629	.2053	.1278	.1333	.0050	.1839	.0782	.0590	.3106	.2469
#1	.2501	40.49	2.055	2.068	2.028	40.67	2.045	2.049	2.062	2.009
#2	.2496	40.57	2.051	2.070	2.028	40.76	2.042	2.047	2.053	2.005
#3	.2504	40.66	2.055	2.073	2.027	40.82	2.043	2.049	2.065	2.015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.82	40.36	40.07	2.048	2.010	40.86	2.075	1.979	2.045	2.058
Stddev	.05	.07	.07	.003	.003	.08	.002	.002	.006	.001
%RSD	.1364	.1805	.1872	.1533	.1398	.1977	.0981	.1138	.2723	.0650
#1	39.76	40.31	39.99	2.051	2.007	40.78	2.077	1.980	2.045	2.058
#2	39.87	40.32	40.14	2.045	2.009	40.86	2.073	1.980	2.039	2.057
#3	39.82	40.44	40.07	2.049	2.013	40.94	2.076	1.976	2.050	2.060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.650	2.087	2.016	1.978	2.006	2.008	2.042
Stddev	.003	.003	.057	.002	.004	.005	.002
%RSD	.1713	.1215	2.817	.0896	.2084	.2281	.1056
#1	1.652	2.089	2.010	1.979	2.003	2.010	2.044
#2	1.647	2.084	2.076	1.976	2.011	2.002	2.042
#3	1.652	2.086	1.963	1.978	2.005	2.011	2.039
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 9:07:55 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2437.8	5977.9	54224.	6708.8
Stddev	3.0	2.9	210.	13.9
%RSD	.12387	.04906	.38700	.20729
#1	2438.9	5979.0	54019.	6724.9
#2	2434.4	5974.6	54438.	6701.4
#3	2440.2	5980.1	54216.	6700.2

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 9:16:56 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0187	-.0002	.0010	.0009	.0224	.0001	.0002	.0004	.0008
Stddev	.0002	.0060	.0005	.0002	.0001	.0036	.0001	.0002	.0001	.0002
%RSD	29.09	31.88	277.1	15.88	7.395	16.10	89.87	126.5	27.75	19.45
#1	.0010	.0256	.0002	.0011	.0010	.0257	.0003	.0003	.0004	.0010
#2	.0009	.0153	-.0007	.0009	.0009	.0230	.0001	.0002	.0006	.0007
#3	.0006	.0153	.0000	.0008	.0009	.0186	.0000	-.0001	.0004	.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0239	.0350	.0423	.0006	.0003	.0375	.0003	-.0006	.0007	-.0006
Stddev	.0041	.0215	.0095	.0001	.0002	.0092	.0001	.0001	.0012	.0003
%RSD	17.37	61.28	22.44	26.56	81.83	24.53	21.42	13.58	179.8	53.11
#1	.0243	.0325	.0318	.0007	.0005	.0436	.0004	-.0005	.0010	-.0007
#2	.0278	.0149	.0446	.0005	.0002	.0419	.0002	-.0006	.0017	-.0008
#3	.0195	.0576	.0503	.0004	.0001	.0269	.0003	-.0007	-.0007	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0003	.0009	.0004	-.0001	.0005	.0002
Stddev	.0004	.0001	.0001	.0002	.0006	.0002	.0000
%RSD	257.5	44.61	6.756	40.83	550.5	44.52	21.87
#1	-.0006	.0004	.0009	.0006	-.0006	.0008	.0003
#2	.0002	.0004	.0008	.0005	.0006	.0005	.0002
#3	-.0001	.0002	.0008	.0002	-.0004	.0003	.0002
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 9:16:56 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2825.9	6174.0	56614.	6751.6
Stddev	8.5	17.7	194.	38.2
%RSD	.30159	.28688	.34321	.56629
#1	2822.0	6164.3	56456.	6794.9
#2	2820.1	6163.3	56554.	6722.7
#3	2835.7	6194.4	56831.	6737.2

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: MP30665-MB1 Acquired: 8/2/2016 9:20:47 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0129	-.0015	-.0001	.0000	.0081	-.0001	-.0002	.0002	-.0002
Stddev	.0003	.0122	.0005	.0001	.000	.0007	.0000	.0000	.0001	.0002
%RSD	56.10	94.08	32.81	79.58	271.2	8.066	48.02	17.87	50.59	83.85
#1	.0007	.0175	-.0011	-.0002	.0000	.0088	-.0001	-.0003	.0001	-.0005
#2	.0006	.0221	-.0021	-.0001	.0000	.0080	-.0001	-.0002	.0004	-.0001
#3	.0002	-.0009	-.0014	.0000	.0000	.0075	.0000	-.0002	.0003	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056	.0403	.0157	.0000	.0000	.0146	.0003	.0005	.0005	-.0019
Stddev	.0017	.0031	.0142	.0000	.000	.0083	.0002	.0006	.0010	.0009
%RSD	29.77	7.685	90.43	8.642	194.5	56.37	60.55	122.4	211.3	46.64
#1	.0074	.0437	-.0001	.0000	.0000	.0105	.0003	.0011	-.0007	-.0029
#2	.0042	.0376	.0200	.0000	-.0001	.0093	.0002	.0005	.0011	-.0014
#3	.0051	.0396	.0273	.0000	.0000	.0241	.0005	-.0001	.0010	-.0013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	.0212	-.0002	.0001	-.0015	.0001	.0021
Stddev	.0003	.0003	.0001	.0001	.0004	.0001	.0001
%RSD	17.07	1.456	36.37	50.11	24.14	98.68	2.787
#1	.0020	.0216	-.0001	.0001	-.0012	.0000	.0021
#2	.0017	.0211	-.0002	.0002	-.0019	.0002	.0020
#3	.0014	.0210	-.0003	.0001	-.0015	.0001	.0021
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: MP30665-MB1 Acquired: 8/2/2016 9:20:47 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2934.5	6388.7	59447.	7086.5
Stddev	5.7	10.8	376.	95.3
%RSD	.19566	.16939	.63201	1.3450
#1	2937.3	6399.6	59058.	7196.3
#2	2927.9	6378.0	59476.	7025.1
#3	2938.4	6388.6	59808.	7038.1

Zoom In Zoom Out

Sample Name: MP30665-B1 Acquired: 8/2/2016 9:24:58 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0464	27.06	1.943	2.044	.0497	25.80	.0489	.4926	.1999	.2461
Stddev	.0003	.03	.002	.002	.0000	.05	.0001	.0004	.0006	.0010
%RSD	.7436	.1071	.1152	.0855	.0555	.2060	.2034	.0877	.2894	.4021
#1	.0466	27.09	1.941	2.045	.0497	25.84	.0490	.4921	.2004	.2468
#2	.0460	27.07	1.945	2.042	.0497	25.82	.0488	.4928	.2001	.2450
#3	.0466	27.03	1.944	2.045	.0497	25.74	.0490	.4929	.1993	.2467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.13	25.07	24.74	.4974	.4842	25.53	.5049	.4624	.4881	1.941
Stddev	.05	.04	.09	.0011	.0006	.05	.0002	.0011	.0018	.002
%RSD	.1743	.1662	.3751	.2168	.1136	.2031	.0442	.2447	.3773	.1015
#1	26.17	25.12	24.84	.4984	.4836	25.57	.5050	.4636	.4876	1.939
#2	26.08	25.05	24.65	.4963	.4845	25.55	.5051	.4624	.4902	1.942
#3	26.15	25.05	24.74	.4975	.4846	25.47	.5047	.4613	.4867	1.942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.5268	.4737	.4776	1.875	.4647	.4897
Stddev	.0004	.0002	.0010	.0002	.006	.0005	.0009
%RSD	45.78	.0421	.2014	.0377	.3218	.1109	.1740
#1	.0005	.5266	.4744	.4778	1.881	.4650	.4889
#2	.0011	.5267	.4726	.4774	1.870	.4641	.4906
#3	.0013	.5270	.4741	.4776	1.873	.4649	.4896
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP30665-B1 Acquired: 8/2/2016 9:24:58 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2634.0	6220.6	56815.	6979.9
Stddev	6.0	5.3	278.	34.3
%RSD	.22935	.08522	.48987	.49126
#1	2627.7	6218.4	56684.	6960.6
#2	2634.5	6216.8	57134.	6959.5
#3	2639.8	6226.7	56626.	7019.5

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: FA35738-10 Acquired: 8/2/2016 9:28:55 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0065	219.7	.1378	1.559	.0028	23.94	.0039	.1117	.6922
Stddev	.0005	.6	.0013	.002	.0001	.06	.0000	.0003	.0016
%RSD	7.504	.2723	.9159	.1281	2.064	.2561	1.019	.2909	.2267
#1	.0070	220.1	.1392	1.559	.0029	23.97	.0038	.1121	.6935
#2	.0063	220.0	.1370	1.561	.0028	23.97	.0038	.1117	.6926
#3	.0061	219.0	.1371	1.557	.0028	23.87	.0039	.1114	.6905

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2207	304.7	39.54	96.85	4.528	.0109	1.790	.5510	1.076
Stddev	.0007	.9	.09	.42	.028	.0003	.008	.0010	.002
%RSD	.3316	.2875	.2248	.4341	.6228	2.907	.4479	.1800	.1762
#1	.2210	304.4	39.65	97.14	4.553	.0110	1.789	.5517	1.076
#2	.2213	305.6	39.50	97.05	4.498	.0112	1.782	.5499	1.074
#3	.2199	303.9	39.49	96.37	4.534	.0106	1.798	.5514	1.078

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0124	.0098	1.371	.0244	.1059	F15.64	-.0051	.5826	3.136
Stddev	.0048	.0022	.002	.0004	.0001	.13	.0012	.0009	.003
%RSD	38.30	22.65	.1699	1.718	.0767	.8513	24.70	.1623	.0988
#1	.0164	.0122	1.371	.0248	.1058	15.64	-.0058	.5837	3.139
#2	.0138	.0096	1.368	.0240	.1059	15.51	-.0036	.5821	3.133
#3	.0072	.0077	1.373	.0245	.1058	15.77	-.0058	.5821	3.136

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2614.3	6817.7	61015.	7637.7
Stddev	7.0	13.0	131.	70.5
%RSD	.26747	.19036	.21473	.92320
#1	2609.6	6804.9	61010.	7604.2
#2	2611.0	6817.2	61149.	7590.2
#3	2622.3	6830.8	60887.	7718.8

Zoom In Zoom Out

Sample Name: MP30665-D1 Acquired: 8/2/2016 9:33:14 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0067	214.2	.1535	1.751	.0027	28.18	.0033	.1046	.6328
Stddev	.0003	.2	.0004	.006	.0001	.03	.0001	.0002	.0008
%RSD	4.319	.1103	.2850	.3300	2.216	.1198	3.631	.1609	.1327
#1	.0067	214.0	.1533	1.753	.0026	28.14	.0034	.1048	.6338
#2	.0070	214.1	.1540	1.745	.0027	28.20	.0032	.1045	.6325
#3	.0064	214.4	.1533	1.756	.0028	28.21	.0034	.1045	.6322

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2196	310.1	44.02	96.68	4.082	.0094	1.860	.4076	.8300
Stddev	.0005	.4	.04	.25	.025	.0001	.013	.0010	.0012
%RSD	.2145	.1371	.0933	.2587	.6070	1.409	.6995	.2383	.1434
#1	.2191	309.9	44.06	96.39	4.055	.0094	1.869	.4068	.8292
#2	.2199	309.7	43.98	96.78	4.090	.0095	1.846	.4073	.8295
#3	.2199	310.5	44.02	96.86	4.102	.0093	1.867	.4087	.8314

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0082	.0086	1.347	.0246	.1078	F16.67	-.0044	.5902	2.713
Stddev	.0024	.0027	.003	.0007	.0002	.04	.0021	.0009	.006
%RSD	28.92	31.96	.2028	2.856	.2199	.2565	47.40	.1560	.2129
#1	.0108	.0063	1.344	.0243	.1078	16.66	-.0059	.5910	2.719
#2	.0075	.0116	1.346	.0242	.1075	16.64	-.0020	.5892	2.707
#3	.0063	.0078	1.350	.0255	.1080	16.72	-.0052	.5903	2.714

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2605.9	6815.8	61347.	7612.1
Stddev	6.6	17.3	72.	79.4
%RSD	.25229	.25398	.11766	1.0432
#1	2598.4	6796.0	61275.	7679.1
#2	2608.7	6828.0	61419.	7524.4
#3	2610.6	6823.4	61347.	7632.7

Zoom In Zoom Out

Sample Name: MP30665-SD1 Acquired: 8/2/2016 9:37:26 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0115	240.7	.1538	1.731	.0028	26.74	.0033	.1289	.7784	.2474
Stddev	.0026	3.0	.0045	.026	.0001	.31	.0001	.0014	.0020	.0023
%RSD	22.31	1.244	2.944	1.522	3.063	1.152	3.405	1.066	.2613	.9098
#1	.0085	237.2	.1487	1.701	.0028	26.38	.0034	.1301	.7807	.2454
#2	.0132	242.4	.1573	1.750	.0027	26.91	.0032	.1274	.7767	.2498
#3	.0127	242.5	.1553	1.743	.0029	26.92	.0033	.1292	.7780	.2470

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	347.5	43.76	108.7	5.197	.0079	1.921	.6344	1.127	.0017	.0012
Stddev	4.4	.54	1.2	.008	.0015	.007	.0011	.001	.0025	.0197
%RSD	1.275	1.234	1.066	.1606	19.52	.3469	.1741	.0900	151.3	1596.
#1	342.4	43.14	107.5	5.203	.0090	1.927	.6346	1.128	.0045	-.0194
#2	350.0	44.02	108.7	5.199	.0086	1.920	.6354	1.126	-.0004	.0199
#3	350.0	44.13	109.8	5.187	.0061	1.914	.6332	1.126	.0009	.0032

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.544	.0271	.1167	17.92	-.0040	.6483	3.639
Stddev	.005	.0015	.0012	.04	.0016	.0038	.008
%RSD	.3191	5.537	1.039	.2314	40.42	.5867	.2157
#1	1.544	.0254	.1153	17.96	-.0046	.6523	3.636
#2	1.549	.0274	.1173	17.92	-.0022	.6479	3.634
#3	1.540	.0284	.1175	17.88	-.0053	.6447	3.648

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2726.3	6389.4	57456.	6930.5
Stddev	1.7	7.1	91.	42.5
%RSD	.06064	.11144	.15817	.61393
#1	2728.2	6392.1	57389.	6882.6
#2	2725.2	6394.8	57420.	6963.8
#3	2725.4	6381.4	57560.	6945.1

Zoom In Zoom Out

Sample Name: MP30665-PS1 Acquired: 8/2/2016 9:41:29 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0484	222.0	.2310	1.823	.0495	28.71	.0487	.1571	.7402
Stddev	.0004	.4	.0015	.002	.0001	.06	.0001	.0009	.0016
%RSD	.8372	.1791	.6395	.0941	.2264	.1996	.3006	.5456	.2161
#1	.0482	221.7	.2295	1.823	.0494	28.66	.0488	.1563	.7391
#2	.0481	222.4	.2325	1.825	.0496	28.78	.0486	.1569	.7420
#3	.0489	221.8	.2310	1.821	.0495	28.70	.0488	.1580	.7394

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.3167	309.7	49.36	101.8	4.572	.1018	11.17	.6387	1.131
Stddev	.0004	1.3	.14	.4	.029	.0002	.05	.0010	.006
%RSD	.1208	.4328	.2899	.3991	.6429	.1795	.4463	.1580	.5190
#1	.3165	308.2	49.20	101.4	4.582	.1016	11.12	.6376	1.132
#2	.3171	310.9	49.48	102.2	4.539	.1019	11.22	.6387	1.124
#3	.3164	309.9	49.40	101.7	4.595	.1019	11.16	.6397	1.136

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1046	.0976	1.535	.0681	.1514	F15.88	.0894	.6279	3.354
Stddev	.0014	.0011	.002	.0008	.0002	.07	.0020	.0014	.008
%RSD	1.331	1.090	.1578	1.113	.1509	.4415	2.255	.2165	.2484
#1	.1040	.0988	1.532	.0672	.1512	15.95	.0907	.6293	3.347
#2	.1062	.0972	1.536	.0684	.1515	15.86	.0905	.6278	3.352
#3	.1036	.0967	1.537	.0686	.1516	15.82	.0871	.6266	3.363

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2583.3	6815.0	60393.	7570.0
Stddev	9.2	15.1	190.	101.2
%RSD	.35682	.22180	.31467	1.3363
#1	2583.1	6824.1	60177.	7671.0
#2	2592.6	6823.4	60535.	7468.6
#3	2574.2	6797.6	60467.	7570.3

Zoom In Zoom Out

Sample Name: MP30665-S1 Acquired: 8/2/2016 9:45:45 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0506	244.4	1.940	3.725	.0486	47.78	.0466	.5409	.8542
Stddev	.0004	.4	.006	.012	.0001	.08	.0001	.0009	.0033
%RSD	.7517	.1580	.3043	.3320	.3017	.1773	.2808	.1612	.3814
#1	.0510	244.0	1.934	3.713	.0485	47.68	.0468	.5400	.8510
#2	.0503	244.4	1.945	3.725	.0485	47.83	.0465	.5418	.8541
#3	.0505	244.8	1.940	3.738	.0487	47.83	.0466	.5409	.8575

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.4278	356.2	66.77	124.3	4.989	.4295	24.87	.8204	F14.35
Stddev	.0013	1.1	.12	.4	.014	.0010	.01	.0013	.02
%RSD	.2962	.3087	.1742	.3025	.2746	.2294	.0493	.1544	.1061
#1	.4289	355.0	66.63	124.3	5.005	.4284	24.86	.8191	14.34
#2	.4281	356.7	66.82	124.7	4.981	.4299	24.88	.8216	14.34
#3	.4264	357.0	66.84	123.9	4.982	.4303	24.88	.8205	14.36

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1086	1.738	1.909	.4548	.5393	F17.51	1.839	1.043	3.228
Stddev	.0012	.004	.003	.0014	.0010	.05	.002	.004	.005
%RSD	1.143	.2588	.1724	.2973	.1846	.2994	.0916	.3510	.1561
#1	.1073	1.733	1.906	.4532	.5382	17.52	1.841	1.042	3.222
#2	.1098	1.742	1.913	.4558	.5396	17.45	1.839	1.047	3.232
#3	.1088	1.738	1.909	.4552	.5402	17.55	1.838	1.040	3.229

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2552.8	6816.6	59988.	7498.8
Stddev	3.7	7.0	186.	45.6
%RSD	.14569	.10302	.30931	.60813
#1	2548.6	6813.7	60197.	7486.0
#2	2554.1	6811.4	59924.	7460.9
#3	2555.7	6824.5	59842.	7549.4

Zoom In Zoom Out

Sample Name: MP30665-S2 Acquired: 8/2/2016 9:49:58 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0504	251.1	1.936	4.358	.0486	55.86	.0495	.5533	1.356
Stddev	.0005	.7	.003	.010	.0002	.23	.0002	.0003	.005
%RSD	.9430	.2734	.1296	.2319	.4502	.4118	.3365	.0473	.3586
#1	.0508	251.9	1.938	4.365	.0485	56.12	.0496	.5531	1.351
#2	.0499	250.6	1.933	4.346	.0485	55.67	.0496	.5532	1.357
#3	.0505	250.9	1.937	4.362	.0489	55.79	.0493	.5536	1.361

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.5304	369.3	67.95	118.6	4.734	.4320	25.00	.8671	F23.17
Stddev	.0004	.9	.14	.5	.018	.0004	.07	.0005	.04
%RSD	.0660	.2538	.2008	.4149	.3753	.0973	.2793	.0603	.1648
#1	.5303	370.0	68.07	119.2	4.715	.4322	25.08	.8668	23.15
#2	.5301	368.3	67.80	118.2	4.739	.4315	24.94	.8678	23.15
#3	.5308	369.8	67.99	118.5	4.750	.4323	25.00	.8669	23.21

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1118	1.734	1.977	.4686	.5852	F18.68	1.876	1.045	F13.81
Stddev	.0022	.004	.003	.0015	.0011	.01	.005	.003	.01
%RSD	1.929	.2485	.1583	.3159	.1815	.0494	.2671	.2644	.0510
#1	.1104	1.736	1.979	.4703	.5861	18.69	1.870	1.043	13.81
#2	.1107	1.736	1.979	.4680	.5854	18.68	1.879	1.044	13.80
#3	.1143	1.729	1.973	.4675	.5840	18.67	1.879	1.048	13.82

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2547.9	6912.1	60836.	7616.5
Stddev	3.9	5.6	274.	72.2
%RSD	.15131	.08127	.45016	.94766
#1	2550.2	6909.0	61079.	7537.6
#2	2550.2	6918.6	60889.	7679.2
#3	2543.5	6908.9	60539.	7632.7

Zoom In Zoom Out

Sample Name: FA35738-21 Acquired: 8/2/2016 9:54:10 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0054	159.4	.0919	1.582	.0018	23.17	.0007	.0723	.3799
Stddev	.0004	.3	.0009	.006	.0001	.06	.0002	.0006	.0025
%RSD	6.775	.1855	.9675	.3549	5.349	.2747	26.56	.8589	.6520
#1	.0055	159.1	.0920	1.578	.0017	23.14	.0007	.0727	.3816
#2	.0057	159.6	.0927	1.589	.0018	23.24	.0005	.0727	.3771
#3	.0050	159.5	.0909	1.580	.0018	23.12	.0008	.0716	.3810

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.1588	241.3	40.50	70.06	2.871	.0056	1.294	.2277	F12.63
Stddev	.0003	1.2	.09	.14	.010	.0005	.007	.0002	.01
%RSD	.2189	.4836	.2233	.2056	.3408	8.283	.5305	.0771	.1036
#1	.1589	240.6	40.50	69.99	2.881	.0060	1.291	.2275	12.64
#2	.1591	242.7	40.59	70.22	2.861	.0051	1.302	.2277	12.64
#3	.1584	240.7	40.41	69.96	2.871	.0057	1.290	.2278	12.62

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0037	.0058	1.780	.0226	.0843	F13.44	-.0034	.4510	1.219
Stddev	.0019	.0008	.005	.0002	.0006	.17	.0021	.0010	.001
%RSD	50.92	13.92	.2736	.9170	.7184	1.298	62.19	.2160	.0632
#1	.0059	.0049	1.775	.0228	.0843	13.41	-.0030	.4518	1.220
#2	.0023	.0058	1.784	.0226	.0848	13.29	-.0056	.4499	1.219
#3	.0030	.0065	1.780	.0223	.0836	13.63	-.0015	.4513	1.219

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2635.4	6838.5	60596.	7431.6
Stddev	2.4	5.9	290.	14.6
%RSD	.09104	.08661	.47824	.19671
#1	2633.0	6832.8	60353.	7446.5
#2	2635.5	6844.6	60917.	7417.3
#3	2637.7	6838.2	60519.	7431.1

Zoom In Zoom Out

Sample Name: FA35738-22 Acquired: 8/2/2016 9:58:21 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0062	215.1	.1368	2.082	.0029	26.71	.0021	.1117	.6852
Stddev	.0006	.7	.0011	.003	.0001	.10	.0001	.0008	.0021
%RSD	9.399	.3035	.7976	.1214	2.348	.3842	3.200	.6784	.3072
#1	.0055	215.7	.1375	2.082	.0028	26.80	.0022	.1110	.6828
#2	.0063	214.4	.1374	2.080	.0029	26.60	.0020	.1114	.6863
#3	.0067	215.2	.1355	2.085	.0029	26.73	.0021	.1125	.6866

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.1876	332.5	55.51	104.4	4.171	.0093	2.041	.4124	.7558
Stddev	.0001	.7	.07	.5	.003	.0003	.008	.0007	.0016
%RSD	.0302	.2102	.1246	.4948	.0756	2.776	.3920	.1682	.2054
#1	.1876	331.9	55.59	104.8	4.174	.0093	2.049	.4124	.7541
#2	.1877	332.3	55.48	103.8	4.172	.0091	2.040	.4116	.7572
#3	.1876	333.2	55.46	104.5	4.168	.0096	2.033	.4130	.7562

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0066	.0030	1.781	.0274	.1190	F17.79	-.0091	.6138	2.136
Stddev	.0023	.0017	.001	.0003	.0004	.11	.0015	.0012	.004
%RSD	35.22	56.24	.0371	1.106	.3020	.6296	16.62	.1885	.1934
#1	.0053	.0036	1.781	.0277	.1194	17.91	-.0080	.6134	2.139
#2	.0093	.0011	1.782	.0271	.1189	17.78	-.0084	.6151	2.131
#3	.0052	.0042	1.780	.0273	.1187	17.68	-.0108	.6128	2.138

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2600.5	6945.1	61531.	7664.2
Stddev	4.8	12.8	66.	39.1
%RSD	.18491	.18465	.10780	.51005
#1	2602.8	6942.7	61466.	7688.1
#2	2603.8	6958.9	61530.	7685.4
#3	2595.0	6933.6	61598.	7619.1

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 10:02:31 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2491	40.11	2.022	2.067	2.009	40.18	2.029	2.031	2.027	1.998
Stddev	.0007	.06	.002	.005	.002	.05	.001	.001	.005	.001
%RSD	.2845	.1452	.0878	.2324	.1134	.1209	.0250	.0404	.2293	.0659
#1	.2486	40.08	2.023	2.068	2.011	40.22	2.028	2.032	2.031	1.998
#2	.2499	40.18	2.020	2.061	2.007	40.20	2.029	2.031	2.022	1.999
#3	.2487	40.08	2.023	2.071	2.010	40.13	2.029	2.031	2.029	1.997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.58	40.28	39.64	2.039	1.985	40.56	2.049	1.976	2.015	2.021
Stddev	.13	.04	.08	.005	.003	.07	.000	.005	.003	.004
%RSD	.3319	.1011	.1986	.2477	.1316	.1696	.0215	.2461	.1290	.1848
#1	39.67	40.32	39.64	2.044	1.983	40.53	2.048	1.977	2.013	2.021
#2	39.43	40.29	39.72	2.034	1.985	40.63	2.049	1.971	2.016	2.024
#3	39.64	40.24	39.56	2.040	1.988	40.51	2.049	1.981	2.018	2.017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.624	2.048	2.018	1.983	2.003	1.983	2.026
Stddev	.002	.002	.015	.004	.002	.004	.002
%RSD	.1010	.0914	.7400	.2083	.1130	.1853	.0863
#1	1.623	2.049	2.028	1.987	2.006	1.987	2.028
#2	1.626	2.046	2.001	1.978	2.003	1.980	2.025
#3	1.623	2.048	2.024	1.983	2.001	1.981	2.025
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 10:02:31 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2461.2	6078.2	54706.	6723.9
Stddev	5.5	4.6	189.	22.8
%RSD	.22549	.07610	.34611	.33976
#1	2459.6	6080.7	54543.	6722.1
#2	2467.4	6081.1	54914.	6702.0
#3	2456.6	6072.9	54660.	6747.6

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 10:06:29 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0181	-.0005	.0005	.0005	.0091	.0001	.0002
Stddev	.0002	.0110	.0006	.0002	.0001	.0002	.0001	.0002
%RSD	48.84	60.56	118.3	38.43	19.59	2.463	83.26	100.2
#1	.0002	.0236	.0001	.0004	.0006	.0091	.0002	.0002
#2	.0007	.0055	-.0005	.0008	.0004	.0088	.0001	.0003
#3	.0005	.0252	-.0011	.0004	.0004	.0093	.0000	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0005	.0345	.0522	.0235	.0004	F.0016	.0169
Stddev	.0001	.0003	.0048	.0294	.0144	.0000	.0005	.0125
%RSD	93.38	59.97	13.79	56.35	61.10	8.178	31.79	73.85
#1	.0003	.0006	.0389	.0457	.0396	.0004	.0021	.0256
#2	.0000	.0002	.0349	.0266	.0191	.0004	.0015	.0225
#3	.0002	.0008	.0295	.0843	.0119	.0003	.0011	.0026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							.0010	
Low Limit							-.0010	

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	F-.0011	.0010	-.0004	-.0002	.0002	.0005	F.0021
Stddev	.0003	.0004	.0008	.0005	.0001	.0001	.0001	.0002
%RSD	110.2	33.50	77.81	127.0	57.50	59.28	20.92	9.385
#1	.0005	-.0010	.0019	-.0003	-.0003	.0001	.0006	.0023
#2	.0002	-.0016	.0005	.0000	-.0001	.0002	.0005	.0022
#3	.0000	-.0009	.0006	-.0010	-.0002	.0004	.0004	.0019
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Fail
High Limit		.0010						.0020
Low Limit		-.0010						-.0020

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 10:06:29 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm
Avg	.0000	.0006	.0002
Stddev	.0007	.0001	.0000
%RSD	1800.	19.09	11.60
#1	.0007	.0007	.0002
#2	.0001	.0006	.0002
#3	-.0007	.0005	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2848.6	6284.4	56888.	6721.8
Stddev	4.4	1.6	151.	62.9
%RSD	.15501	.02555	.26563	.93572
#1	2853.3	6284.6	56807.	6655.2
#2	2844.5	6285.9	56796.	6780.2
#3	2847.9	6282.7	57063.	6730.0

Zoom In Zoom Out

Sample Name: FA35738-23 Acquired: 8/2/2016 10:10:39 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0065	200.7	.1198	2.057	.0025	23.94	.0006	.1175	.8540
Stddev	.0012	.5	.0010	.005	.0001	.11	.0000	.0007	.0012
%RSD	19.11	.2521	.8110	.2680	4.375	.4391	6.125	.5813	.1351
#1	.0077	200.5	.1194	2.052	.0025	23.95	.0007	.1169	.8552
#2	.0052	200.4	.1191	2.057	.0026	23.83	.0007	.1182	.8529
#3	.0066	201.3	.1209	2.063	.0024	24.04	.0006	.1174	.8539

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.1774	294.3	58.27	104.0	3.465	.0088	1.719	.7880	.2004
Stddev	.0008	.8	.13	.6	.004	.0003	.009	.0006	.0017
%RSD	.4749	.2829	.2306	.5344	.1260	3.355	.4992	.0739	.8618
#1	.1764	293.5	58.22	104.2	3.470	.0090	1.719	.7886	.1988
#2	.1778	294.2	58.17	103.4	3.463	.0088	1.727	.7877	.2022
#3	.1779	295.1	58.42	104.4	3.462	.0085	1.710	.7876	.2000

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0064	.0030	2.383	.0272	.0866	F18.06	-.0072	.5767	1.241
Stddev	.0016	.0028	.003	.0006	.0001	.19	.0015	.0031	.002
%RSD	25.41	95.30	.1370	2.082	.1303	1.039	20.60	.5456	.1402
#1	.0047	-.0001	2.384	.0266	.0865	18.27	-.0084	.5773	1.243
#2	.0065	.0055	2.380	.0273	.0866	17.91	-.0075	.5733	1.241
#3	.0079	.0035	2.386	.0278	.0867	18.00	-.0055	.5795	1.239

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2600.1	6937.8	61429.	7653.4
Stddev	4.2	7.8	191.	74.6
%RSD	.16207	.11308	.31043	.97485
#1	2596.6	6930.4	61209.	7636.2
#2	2599.0	6936.9	61549.	7735.1
#3	2604.8	6946.0	61529.	7588.9

Zoom In Zoom Out

Sample Name: FA35738-24 Acquired: 8/2/2016 10:14:49 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0062	208.4	.1384	2.066	.0025	32.09	.0021	.1145	1.225
Stddev	.0004	.3	.0006	.006	.0000	.03	.0001	.0004	.003
%RSD	6.011	.1480	.4519	.2878	1.445	.0932	3.169	.3829	.2035
#1	.0059	208.0	.1391	2.059	.0026	32.08	.0020	.1140	1.226
#2	.0061	208.4	.1379	2.069	.0025	32.13	.0020	.1147	1.226
#3	.0066	208.6	.1381	2.070	.0025	32.07	.0021	.1148	1.222

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2245	314.1	56.13	116.9	3.724	.0255	1.804	.6074	1.085
Stddev	.0009	.9	.09	.5	.008	.0001	.006	.0002	.002
%RSD	.4229	.2927	.1674	.3982	.2218	.3887	.3581	.0265	.1927
#1	.2255	313.1	56.08	116.4	3.732	.0254	1.809	.6072	1.086
#2	.2245	314.8	56.24	117.3	3.725	.0256	1.807	.6074	1.086
#3	.2236	314.5	56.08	117.0	3.715	.0256	1.797	.6075	1.082

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0114	.0063	1.901	.0286	.1109	F18.29	-.0083	.6136	1.755
Stddev	.0012	.0011	.001	.0004	.0003	.07	.0014	.0022	.001
%RSD	10.17	17.55	.0674	1.261	.3148	.3710	17.24	.3638	.0308
#1	.0127	.0072	1.899	.0288	.1107	18.37	-.0070	.6150	1.755
#2	.0108	.0051	1.901	.0281	.1113	18.24	-.0079	.6147	1.754
#3	.0106	.0067	1.901	.0288	.1106	18.26	-.0098	.6110	1.755

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2592.7	6973.2	62083.	7728.0
Stddev	2.0	8.8	193.	13.4
%RSD	.07635	.12587	.31106	.17335
#1	2594.6	6977.7	61903.	7739.9
#2	2592.8	6978.8	62059.	7713.5
#3	2590.7	6963.1	62287.	7730.6

Zoom In Zoom Out

Sample Name: FA35738-25 Acquired: 8/2/2016 10:18:58 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0107	198.4	.4128	7.959	.0023	176.9	.2011	.2541	F8.483
Stddev	.0003	.1	.0027	.086	.0001	.1	.0014	.0007	.017
%RSD	2.656	.0603	.6602	1.085	4.566	.0731	.6778	.2683	.1960
#1	.0104	198.3	.4100	8.059	.0023	176.9	.2010	.2547	8.483
#2	.0108	198.5	.4154	7.909	.0022	177.1	.1997	.2534	8.500
#3	.0109	198.3	.4131	7.909	.0024	176.8	.2025	.2542	8.466

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	1.530	788.5	39.77	116.1	7.972	.0786	2.890	1.441	F46.54
Stddev	.004	8.0	.04	.2	.053	.0004	.024	.001	.05
%RSD	.2513	1.018	.1034	.2007	.6644	.4926	.8174	.0719	.1151
#1	1.531	788.9	39.74	116.2	7.916	.0788	2.869	1.441	46.60
#2	1.533	796.4	39.82	116.2	8.021	.0781	2.886	1.440	46.52
#3	1.526	780.3	39.76	115.8	7.978	.0788	2.916	1.442	46.50

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.680	.0246	2.675	.1565	.4409	F16.29	-.0018	.6102	F131.9
Stddev	.004	.0015	.007	.0005	.0012	.17	.0017	.0017	.7
%RSD	.2630	6.048	.2637	.2936	.2670	1.013	97.90	.2719	.5001
#1	1.675	.0262	2.668	.1568	.4399	16.11	-.0038	.6105	132.6
#2	1.680	.0243	2.674	.1567	.4406	16.34	-.0006	.6117	131.9
#3	1.684	.0232	2.682	.1560	.4422	16.43	-.0010	.6085	131.2

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2598.2	6447.2	59269.	7512.5
Stddev	5.3	9.3	247.	3.5
%RSD	.20397	.14369	.41693	.04597
#1	2592.1	6437.4	59522.	7516.4
#2	2600.4	6455.8	59028.	7509.8
#3	2602.0	6448.4	59256.	7511.4

Zoom In Zoom Out

Sample Name: FA35760-1 Acquired: 8/2/2016 10:23:40 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0023	38.34	.0090	.0419	.0006	8.983	.0000	-.0001	.0875	.0319
Stddev	.0001	.96	.0009	.0008	.0000	.222	.000	.0001	.0005	.0006
%RSD	5.224	2.512	9.822	2.015	6.597	2.468	3677.	85.82	.5859	1.779
#1	.0024	38.99	.0095	.0425	.0006	9.144	-.0002	-.0002	.0881	.0325
#2	.0023	38.80	.0095	.0423	.0006	9.076	-.0001	-.0001	.0871	.0315
#3	.0022	37.24	.0080	.0410	.0005	8.730	.0003	.0000	.0874	.0316

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	80.70	.8035	.4131	.0230	.0049	7.395	.0032	.0227	-.0004	.0032
Stddev	1.89	.0231	.0080	.0001	.0000	.166	.0001	.0006	.0003	.0005
%RSD	2.346	2.875	1.944	.5819	.8129	2.237	3.457	2.521	66.99	16.95
#1	82.20	.8172	.4214	.0231	.0049	7.508	.0034	.0221	-.0001	.0038
#2	81.33	.8165	.4127	.0230	.0049	7.471	.0032	.0231	-.0006	.0028
#3	78.58	.7768	.4054	.0228	.0049	7.205	.0032	.0231	-.0005	.0031

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.291	.0258	.0271	.2317	-.0047	.2435	.0131
Stddev	.001	.0000	.0006	.0007	.0003	.0012	.0004
%RSD	.0974	.0553	2.368	.2891	6.981	.4734	2.766
#1	1.290	.0259	.0275	.2325	-.0048	.2448	.0131
#2	1.292	.0258	.0275	.2314	-.0043	.2427	.0128
#3	1.290	.0258	.0264	.2313	-.0050	.2430	.0135

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2770.9	8249.2	74070.	9046.5
Stddev	3.4	14.3	289.	158.0
%RSD	.12105	.17342	.39080	1.7470
#1	2771.9	8237.5	73809.	8870.9
#2	2773.6	8245.0	74020.	9091.5
#3	2767.2	8265.2	74382.	9177.2

Zoom In Zoom Out

Sample Name: FA35760-2 Acquired: 8/2/2016 10:27:44 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0035	28.84	.0624	.0120	.0005	.6028	.0043	-.0048	.1750
Stddev	.0004	.04	.0009	.0002	.0001	.0028	.0007	.0001	.0003
%RSD	10.67	.1502	1.503	1.512	17.94	.4566	17.16	1.406	.1837
#1	.0031	28.80	.0617	.0122	.0004	.6041	.0051	-.0048	.1753
#2	.0039	28.89	.0635	.0118	.0006	.6047	.0037	-.0048	.1746
#3	.0036	28.82	.0621	.0120	.0005	.5997	.0041	-.0047	.1751

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0606	F454.2	.5186	.5118	.0735	.0730	3.113	.0116	.0618
Stddev	.0006	7.0	.0053	.0159	.0001	.0001	.015	.0003	.0005
%RSD	1.058	1.538	1.026	3.102	.1769	.0892	.4945	2.322	.8131
#1	.0598	446.6	.5232	.5139	.0733	.0730	3.118	.0113	.0613
#2	.0609	460.4	.5128	.5266	.0736	.0731	3.126	.0118	.0623
#3	.0609	455.4	.5198	.4950	.0735	.0729	3.096	.0116	.0617

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0017	.0162	1.380	.0267	.0080	.5177	-.0019	.2474	.0314
Stddev	.0007	.0010	.001	.0002	.0001	.0006	.0019	.0005	.0002
%RSD	39.63	6.075	.0543	.8941	.9911	.1227	101.4	.2169	.5416
#1	.0025	.0173	1.379	.0270	.0081	.5181	.0003	.2479	.0314
#2	.0013	.0157	1.381	.0265	.0081	.5181	-.0028	.2469	.0312
#3	.0013	.0156	1.380	.0267	.0079	.5170	-.0033	.2473	.0316

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2849.3	6819.4	60465.	7461.7
Stddev	6.6	10.1	127.	70.1
%RSD	.23133	.14777	.21006	.94008
#1	2854.6	6829.4	60512.	7506.5
#2	2851.4	6819.5	60561.	7380.9
#3	2841.9	6809.2	60321.	7497.7

Zoom In Zoom Out

Sample Name: FA35760-3 Acquired: 8/2/2016 10:31:53 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0037	213.2	.0459	.1702	.0022	233.6	-.0003	.0050	.2141	.0886
Stddev	.0002	2.6	.0013	.0007	.0001	5.8	.0000	.0001	.0002	.0004
%RSD	6.295	1.228	2.792	.4064	3.790	2.474	16.34	2.493	.0730	.4485
#1	.0039	216.1	.0474	.1703	.0021	239.8	-.0002	.0051	.2143	.0884
#2	.0036	211.0	.0452	.1709	.0023	228.3	-.0003	.0049	.2142	.0883
#3	.0034	212.6	.0451	.1695	.0021	232.8	-.0003	.0051	.2140	.0891

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	135.8	2.930	5.167	.1759	.0109	1.056	.0413	.0612	.0004	.0017
Stddev	.3	.026	.037	.0004	.0000	.004	.0002	.0021	.0012	.0013
%RSD	.2048	.9025	.7253	.2135	.3910	.3343	.5238	3.460	326.7	76.61
#1	135.6	2.960	5.178	.1762	.0108	1.056	.0416	.0588	-.0005	.0026
#2	136.1	2.913	5.198	.1759	.0109	1.059	.0412	.0628	.0018	.0024
#3	135.6	2.917	5.126	.1755	.0109	1.052	.0412	.0619	-.0001	.0002

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	2.278	.0241	.3027	1.045	-.0033	.3855	.1124
Stddev	.004	.0001	.0012	.001	.0005	.0006	.0002
%RSD	.1820	.4800	.3946	.1117	13.62	.1603	.1678
#1	2.283	.0240	.3017	1.047	-.0028	.3858	.1125
#2	2.275	.0243	.3040	1.046	-.0033	.3859	.1126
#3	2.276	.0241	.3024	1.044	-.0037	.3848	.1122

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2519.2	6817.3	58585.	7613.9
Stddev	3.1	9.8	175.	29.1
%RSD	.12165	.14332	.29892	.38256
#1	2517.7	6806.0	58405.	7580.3
#2	2517.3	6822.7	58596.	7632.0
#3	2522.8	6823.1	58755.	7629.5

Zoom In Zoom Out

Sample Name: FA35760-4 Acquired: 8/2/2016 10:36:12 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0030	172.8	.0381	.1165	.0013	1.948	-.0003	.0030	.1792	.0787
Stddev	.0004	.5	.0003	.0003	.0000	.005	.0000	.0001	.0008	.0003
%RSD	11.90	.2652	.8849	.2482	1.386	.2348	3.622	2.159	.4295	.3325
#1	.0026	173.3	.0377	.1168	.0013	1.954	-.0003	.0029	.1793	.0790
#2	.0033	172.4	.0381	.1164	.0013	1.945	-.0003	.0030	.1799	.0785
#3	.0031	172.6	.0384	.1162	.0013	1.947	-.0003	.0030	.1784	.0786

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	121.1	1.338	1.769	.0869	.0099	.3041	.0221	.0422	-.0011	.0003
Stddev	.2	.004	.033	.0001	.0001	.0017	.0002	.0008	.0004	.0006
%RSD	.1329	.3298	1.856	.1476	1.187	.5632	.9844	1.833	32.43	177.6
#1	121.2	1.340	1.774	.0871	.0100	.3053	.0221	.0419	-.0009	.0001
#2	120.9	1.340	1.734	.0868	.0099	.3048	.0219	.0430	-.0015	-.0001
#3	121.1	1.333	1.799	.0868	.0097	.3021	.0223	.0416	-.0009	.0010

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	3.223	.0231	.0176	.6132	-.0057	.3564	.0748
Stddev	.003	.0002	.0002	.0017	.0014	.0000	.0002
%RSD	.0875	.6976	1.087	.2729	24.50	.0127	.2051
#1	3.226	.0230	.0178	.6150	-.0053	.3564	.0748
#2	3.222	.0232	.0175	.6129	-.0045	.3564	.0746
#3	3.220	.0229	.0174	.6117	-.0072	.3564	.0749

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2714.9	7480.2	64411.	8114.4
Stddev	2.0	18.1	147.	49.5
%RSD	.07517	.24238	.22838	.61002
#1	2716.9	7497.2	64517.	8071.7
#2	2715.0	7482.5	64243.	8168.7
#3	2712.8	7461.1	64474.	8102.8

Zoom In Zoom Out

Sample Name: FA35760-5 Acquired: 8/2/2016 10:40:12 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0042	265.0	.0510	.2044	.0021	.7091	.0001	.0051	.2753	.1356
Stddev	.0001	1.1	.0004	.0005	.0000	.0018	.0001	.0000	.0008	.0006
%RSD	2.250	.4303	.7216	.2342	.5641	.2532	177.1	.7943	.2928	.4244
#1	.0043	266.3	.0506	.2044	.0021	.7077	-.0001	.0051	.2759	.1362
#2	.0041	264.2	.0510	.2039	.0021	.7086	.0001	.0051	.2757	.1350
#3	.0042	264.4	.0513	.2049	.0021	.7111	.0001	.0052	.2744	.1357

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	185.1	2.158	2.954	.1893	.0128	.4428	.0372	.0630	-.0008	.0050
Stddev	.5	.014	.011	.0007	.0001	.0124	.0001	.0014	.0016	.0008
%RSD	.2765	.6453	.3634	.3436	.7606	2.801	.3353	2.152	197.9	15.36
#1	185.3	2.151	2.961	.1898	.0127	.4536	.0373	.0614	-.0018	.0054
#2	184.6	2.149	2.942	.1896	.0129	.4293	.0371	.0637	-.0016	.0041
#3	185.6	2.174	2.959	.1886	.0129	.4456	.0371	.0637	.0010	.0055

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	3.432	.0262	.0227	.9160	-.0027	.4588	.1376
Stddev	.007	.0003	.0001	.0012	.0008	.0003	.0006
%RSD	.1911	1.274	.3786	.1342	31.12	.0697	.4390
#1	3.427	.0259	.0227	.9165	-.0035	.4591	.1383
#2	3.429	.0262	.0226	.9169	-.0027	.4588	.1373
#3	3.439	.0266	.0227	.9146	-.0018	.4584	.1372

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2686.7	7064.3	59951.	7720.3
Stddev	7.7	18.4	271.	65.0
%RSD	.28484	.26070	.45145	.84149
#1	2678.1	7044.6	59953.	7683.4
#2	2689.0	7081.2	59679.	7795.3
#3	2692.9	7067.1	60220.	7682.1

Zoom In Zoom Out

Sample Name: FA35760-6 Acquired: 8/2/2016 10:44:21 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0035	234.3	.0408	.1412	.0016	.6791	-.0002	.0041	.2262	.1060
Stddev	.0003	1.2	.0008	.0001	.0000	.0022	.0000	.0001	.0006	.0002
%RSD	7.425	.5104	2.042	.0651	.1409	.3230	18.11	1.689	.2466	.2306
#1	.0032	233.3	.0402	.1412	.0016	.6816	-.0001	.0041	.2267	.1060
#2	.0037	233.9	.0405	.1413	.0016	.6785	-.0001	.0041	.2264	.1062
#3	.0035	235.6	.0418	.1412	.0016	.6773	-.0002	.0042	.2256	.1058

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	141.2	1.722	2.185	.1384	.0118	.6426	.0307	.0522	-.0006	.0018
Stddev	.3	.017	.009	.0003	.0002	.0029	.0002	.0007	.0006	.0009
%RSD	.2460	.9943	.4322	.1953	1.480	.4513	.6711	1.245	99.75	49.95
#1	141.1	1.703	2.178	.1387	.0119	.6459	.0309	.0519	-.0005	.0021
#2	141.0	1.735	2.180	.1385	.0119	.6404	.0306	.0518	-.0013	.0026
#3	141.6	1.729	2.195	.1382	.0116	.6416	.0305	.0530	.0000	.0008

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.580	.0261	.0245	.7732	-.0040	.3863	.1009
Stddev	.002	.0001	.0001	.0013	.0011	.0013	.0001
%RSD	.1548	.3508	.5934	.1706	27.00	.3388	.0630
#1	1.581	.0261	.0247	.7738	-.0031	.3872	.1009
#2	1.581	.0260	.0244	.7740	-.0052	.3869	.1010
#3	1.577	.0262	.0246	.7716	-.0036	.3848	.1010

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2686.6	7100.8	60850.	7732.6
Stddev	2.9	5.8	240.	35.8
%RSD	.10896	.08199	.39489	.46292
#1	2686.5	7094.1	60856.	7772.0
#2	2689.6	7103.1	60606.	7723.6
#3	2683.7	7105.1	61087.	7702.1

Zoom In Zoom Out

Sample Name: FA35760-7 Acquired: 8/2/2016 10:48:30 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0016	91.33	.0172	.0764	.0006	.6278	-.0002	.0014	.0989	.0453
Stddev	.0000	.05	.0008	.0002	.0001	.0021	.0000	.0000	.0001	.0005
%RSD	2.090	.0596	4.382	.2471	9.123	.3273	5.760	3.564	.0756	1.135
#1	.0016	91.36	.0168	.0763	.0006	.6302	-.0002	.0014	.0989	.0454
#2	.0016	91.36	.0167	.0766	.0006	.6266	-.0002	.0013	.0990	.0447
#3	.0015	91.26	.0180	.0764	.0005	.6266	-.0002	.0013	.0990	.0457

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	59.94	.8893	1.018	.0587	.0053	.1335	.0124	.0228	-.0002	-.0004
Stddev	.03	.0217	.020	.0001	.0001	.0065	.0001	.0002	.0006	.0019
%RSD	.0482	2.442	1.962	.1778	1.590	4.900	.8972	.6629	299.9	445.7
#1	59.91	.8643	1.040	.0588	.0052	.1306	.0123	.0229	.0005	.0005
#2	59.95	.9028	1.002	.0586	.0053	.1410	.0124	.0226	-.0006	.0008
#3	59.96	.9009	1.012	.0588	.0053	.1289	.0126	.0228	-.0006	-.0026

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	2.411	.0211	.0115	.4580	-.0026	.1701	.0433
Stddev	.004	.0003	.0000	.0007	.0005	.0004	.0000
%RSD	.1589	1.463	.3477	.1444	20.73	.2542	.0488
#1	2.415	.0212	.0115	.4584	-.0020	.1697	.0433
#2	2.408	.0207	.0115	.4572	-.0030	.1705	.0433
#3	2.410	.0213	.0114	.4583	-.0029	.1700	.0433

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2781.2	7050.6	62151.	7551.1
Stddev	4.2	11.8	311.	84.1
%RSD	.14961	.16745	.50022	1.1139
#1	2776.9	7037.9	62186.	7478.4
#2	2781.5	7052.5	62443.	7531.7
#3	2785.2	7061.3	61825.	7643.3

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 10:52:32 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2496	40.33	2.048	2.066	2.003	40.24	2.045	2.049	2.052	2.010
Stddev	.0008	.07	.004	.005	.002	.06	.001	.002	.004	.006
%RSD	.3116	.1639	.2043	.2334	.0952	.1496	.0637	.1043	.1958	.3227
#1	.2494	40.41	2.044	2.072	2.005	40.31	2.044	2.047	2.054	2.005
#2	.2489	40.28	2.049	2.064	2.003	40.24	2.046	2.051	2.053	2.009
#3	.2505	40.30	2.052	2.063	2.001	40.19	2.046	2.050	2.047	2.017
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.22	40.54	39.62	2.043	2.006	40.91	2.072	1.988	2.037	2.043
Stddev	.07	.03	.04	.003	.007	.07	.003	.002	.011	.006
%RSD	.1689	.0818	.0892	.1249	.3416	.1594	.1596	.0818	.5199	.2963
#1	39.27	40.53	39.64	2.045	1.998	40.98	2.068	1.986	2.026	2.037
#2	39.24	40.52	39.58	2.040	2.007	40.87	2.074	1.990	2.038	2.043
#3	39.15	40.58	39.65	2.042	2.012	40.86	2.074	1.988	2.047	2.049
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.646	2.076	2.003	1.977	2.010	2.004	2.041
Stddev	.004	.003	.008	.002	.003	.002	.002
%RSD	.2644	.1430	.3817	.1170	.1652	.1131	.1066
#1	1.641	2.073	1.999	1.977	2.007	2.004	2.041
#2	1.648	2.077	1.999	1.975	2.014	2.006	2.043
#3	1.649	2.079	2.012	1.979	2.009	2.002	2.039
Check ? Value Range	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 10:52:32 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2450.6	6032.4	54573.	6686.8
Stddev	.8	4.8	141.	30.7
%RSD	.03143	.07921	.25905	.45965
#1	2451.5	6037.8	54425.	6686.7
#2	2450.1	6030.3	54588.	6717.6
#3	2450.2	6029.0	54707.	6656.1

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 10:56:37 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0181	-.0003	.0002	.0003	.0051	.0000	.0000	.0003
Stddev	.0004	.0057	.0004	.0002	.0001	.0021	.0001	.000	.0002
%RSD	74.21	31.47	142.7	91.12	23.90	40.58	164.2	19310.	60.19
#1	.0001	.0127	.0000	.0000	.0003	.0054	.0001	.0000	.0003
#2	.0008	.0174	-.0001	.0003	.0004	.0029	.0000	.0001	.0004
#3	.0006	.0241	-.0007	.0003	.0003	.0071	.0000	.0000	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0246	.0423	.0159	.0002	F.0016	.0169	.0002	-.0005
Stddev	.0000	.0057	.0283	.0211	.0000	.0004	.0127	.0001	.0002
%RSD	16.21	23.35	66.93	132.5	19.01	25.58	75.23	28.35	39.06
#1	.0004	.0309	.0707	-.0054	.0002	.0020	.0210	.0002	-.0006
#2	.0003	.0232	.0140	.0164	.0002	.0015	.0026	.0001	-.0006
#3	.0003	.0196	.0423	.0368	.0002	.0012	.0270	.0003	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0001	-.0007	.0003	.0003	.0007	.0001	.0003	.0001
Stddev	.0003	.0013	.0002	.0002	.0001	.0001	.0007	.0002	.0000
%RSD	61.89	1285.	35.82	87.58	20.41	17.02	492.0	64.75	22.89
#1	.0009	-.0012	-.0004	.0005	.0003	.0008	.0007	.0003	.0001
#2	.0002	.0014	-.0007	.0001	.0004	.0006	-.0007	.0005	.0001
#3	.0006	.0002	-.0009	.0002	.0003	.0008	.0004	.0001	.0002
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 10:56:37 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2837.0	6227.4	56668.	6729.7
Stddev	9.2	15.0	149.	64.6
%RSD	.32536	.24066	.26291	.96061
#1	2837.3	6234.6	56816.	6771.5
#2	2846.0	6237.4	56670.	6762.4
#3	2827.5	6210.1	56518.	6655.3

Zoom In Zoom Out

Sample Name: FA35760-8 Acquired: 8/2/2016 11:00:47 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0021	127.3	.0292	.0870	.0013	4.952	.0000	.0029	.1885	.0617
Stddev	.0001	.5	.0004	.0005	.0000	.015	.000	.0000	.0009	.0006
%RSD	6.366	.4300	1.435	.5620	1.246	.3113	857.0	1.541	.4742	.9212
#1	.0021	127.9	.0288	.0875	.0013	4.969	.0000	.0029	.1891	.0624
#2	.0022	127.1	.0295	.0865	.0013	4.949	.0000	.0030	.1889	.0613
#3	.0019	126.8	.0294	.0868	.0013	4.938	.0000	.0030	.1875	.0615

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	102.9	1.083	1.401	.1389	.0150	.2581	.0229	.0344	.0013	.0016
Stddev	.1	.021	.019	.0001	.0002	.0087	.0000	.0003	.0010	.0017
%RSD	.1222	1.951	1.334	.0806	1.622	3.355	.1389	.7952	78.52	109.8
#1	103.0	1.094	1.421	.1391	.0153	.2634	.0229	.0341	.0024	.0002
#2	102.8	1.059	1.384	.1389	.0148	.2627	.0228	.0343	.0007	.0010
#3	102.8	1.097	1.397	.1389	.0150	.2481	.0229	.0347	.0007	.0035

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.671	.0225	.0147	.6693	-.0039	.2624	.0618
Stddev	.003	.0004	.0000	.0011	.0003	.0007	.0001
%RSD	.1957	1.873	.2698	.1656	7.690	.2619	.2146
#1	1.667	.0220	.0148	.6706	-.0043	.2631	.0618
#2	1.671	.0226	.0147	.6687	-.0038	.2623	.0617
#3	1.674	.0229	.0147	.6687	-.0037	.2617	.0620

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2728.9	7123.6	62845.	7795.5
Stddev	4.8	8.3	77.	57.3
%RSD	.17545	.11597	.12321	.73546
#1	2723.8	7117.1	62785.	7788.9
#2	2729.4	7132.9	62818.	7741.8
#3	2733.4	7120.7	62932.	7855.9

Zoom In Zoom Out

Sample Name: FA35760-9 Acquired: 8/2/2016 11:04:49 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0044	236.5	.0542	.1535	.0016	.8450	.0000	.0031	.2672	.1126
Stddev	.0002	5.1	.0004	.0006	.0000	.0071	.000	.0001	.0012	.0006
%RSD	4.654	2.148	.6907	.4045	1.141	.8379	489.9	2.402	.4308	.5298
#1	.0045	234.3	.0539	.1532	.0016	.8370	.0001	.0031	.2670	.1130
#2	.0046	232.8	.0546	.1531	.0016	.8477	.0000	.0030	.2662	.1119
#3	.0042	242.3	.0540	.1542	.0017	.8504	-.0002	.0031	.2684	.1129

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	186.5	1.678	2.096	.1264	.0161	.6722	.0286	.0567	.0003	.0025
Stddev	1.2	.010	.009	.0003	.0001	.0085	.0003	.0021	.0009	.0010
%RSD	.6456	.5939	.4453	.2336	.3188	1.262	.9091	3.788	332.8	40.57
#1	185.5	1.667	2.087	.1266	.0161	.6711	.0288	.0580	-.0007	.0014
#2	186.3	1.687	2.096	.1261	.0161	.6643	.0283	.0579	.0005	.0027
#3	187.8	1.678	2.105	.1266	.0162	.6812	.0288	.0542	.0011	.0033

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.703	.0267	.0198	.6874	-.0045	.5406	.0951
Stddev	.002	.0002	.0001	.0012	.0009	.0017	.0002
%RSD	.1126	.7974	.3506	.1718	19.59	.3171	.2600
#1	1.706	.0267	.0198	.6879	-.0038	.5414	.0954
#2	1.703	.0265	.0198	.6861	-.0041	.5386	.0951
#3	1.702	.0269	.0199	.6883	-.0055	.5417	.0949

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2697.5	7073.2	60993.	7701.5
Stddev	1.0	6.6	128.	87.5
%RSD	.03766	.09274	.21043	1.1363
#1	2696.4	7067.6	60892.	7781.7
#2	2697.8	7071.5	61138.	7714.7
#3	2698.4	7080.4	60950.	7608.2

Zoom In Zoom Out

Sample Name: FA35653-1 Acquired: 8/2/2016 11:08:59 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0031	99.85	.0659	.8904	.0118	38.73	.0114	.0605	.0999	.3754
Stddev	.0001	.07	.0007	.0016	.0001	.09	.0005	.0001	.0001	.0004
%RSD	4.060	.0664	1.067	.1813	.4247	.2310	4.277	.1575	.1312	.1011
#1	.0030	99.83	.0651	.8905	.0119	38.69	.0119	.0604	.1000	.3754
#2	.0030	99.92	.0663	.8920	.0119	38.84	.0109	.0604	.1000	.3749
#3	.0032	99.79	.0662	.8888	.0118	38.68	.0115	.0606	.0998	.3757

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	178.8	33.08	40.41	3.241	.0072	1.081	.1276	2.461	.0032	.0008
Stddev	4.0	.05	.10	.013	.0002	.005	.0002	.008	.0008	.0001
%RSD	2.263	.1508	.2512	.4079	2.468	.4621	.1910	.3327	25.29	14.37
#1	175.1	33.10	40.35	3.253	.0070	1.084	.1276	2.469	.0029	.0007
#2	183.1	33.11	40.52	3.227	.0073	1.075	.1279	2.463	.0026	.0007
#3	178.0	33.02	40.34	3.243	.0073	1.083	.1275	2.453	.0041	.0009

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	2.601	.0237	.2178	2.374	-.0088	.2173	.8833
Stddev	.001	.0000	.0002	.016	.0010	.0002	.0011
%RSD	.0369	.2053	.0853	.6838	11.46	.0900	.1294
#1	2.601	.0237	.2180	2.389	-.0077	.2171	.8838
#2	2.600	.0236	.2176	2.357	-.0093	.2173	.8841
#3	2.602	.0237	.2177	2.376	-.0095	.2175	.8820

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2570.1	10893.	97024.	12261.
Stddev	10.5	15.	73.	110.
%RSD	.40962	.13729	.07473	.89783
#1	2560.5	10884.	97089.	12247.
#2	2568.4	10886.	96946.	12158.
#3	2581.3	10911.	97038.	12377.

Zoom In Zoom Out

Sample Name: FA35653-2 Acquired: 8/2/2016 11:13:24 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0030	136.4	.0698	1.188	.0091	118.7	.0020	.0595	.1383	.1178
Stddev	.0002	.3	.0011	.001	.0000	2.5	.0001	.0001	.0002	.0003
%RSD	8.272	.2056	1.508	.0823	.2784	2.077	3.826	.0966	.1231	.2451
#1	.0029	136.5	.0710	1.187	.0091	119.7	.0020	.0596	.1384	.1175
#2	.0033	136.6	.0690	1.187	.0090	120.5	.0019	.0595	.1381	.1177
#3	.0028	136.1	.0695	1.189	.0090	115.9	.0020	.0595	.1384	.1180

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	158.6	29.97	36.45	2.655	.0045	.8234	.1292	.2935	.0010	.0008
Stddev	.3	.05	.17	.011	.0001	.0027	.0002	.0014	.0011	.0008
%RSD	.1628	.1682	.4604	.4309	2.067	.3330	.1842	.4862	118.7	107.3
#1	158.4	29.99	36.50	2.641	.0044	.8206	.1290	.2918	.0012	.0018
#2	158.9	30.00	36.58	2.662	.0045	.8261	.1295	.2945	.0019	.0002
#3	158.5	29.91	36.26	2.661	.0046	.8237	.1291	.2940	-.0003	.0004

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.888	.0153	.5272	1.399	-.0052	.2448	.4533
Stddev	.001	.0001	.0010	.002	.0002	.0001	.0005
%RSD	.0765	.6926	.1971	.1221	4.400	.0448	.1181
#1	1.886	.0152	.5284	1.397	-.0055	.2448	.4540
#2	1.888	.0154	.5266	1.400	-.0053	.2447	.4531
#3	1.889	.0152	.5266	1.399	-.0050	.2449	.4530

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2517.5	8703.6	76978.	9707.6
Stddev	3.7	9.8	371.	77.5
%RSD	.14625	.11261	.48218	.79866
#1	2515.0	8694.1	76953.	9732.8
#2	2515.8	8703.2	76620.	9620.6
#3	2521.7	8713.6	77361.	9769.4

Zoom In Zoom Out

Sample Name: FA35653-3 Acquired: 8/2/2016 11:17:41 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0020	71.27	.0516	.6273	.0105	34.20	.0057	.0492	.0755
Stddev	.0002	.08	.0006	.0011	.0000	.03	.0001	.0002	.0005
%RSD	10.12	.1117	1.224	.1784	.2529	.0926	1.662	.4712	.7178
#1	.0020	71.24	.0523	.6260	.0105	34.22	.0057	.0491	.0761
#2	.0018	71.21	.0514	.6279	.0105	34.16	.0058	.0495	.0754
#3	.0022	71.36	.0511	.6281	.0105	34.21	.0056	.0490	.0751

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2284	167.2	20.36	27.63	2.395	.0054	.8233	.0885	F4.010
Stddev	.0004	.1	.02	.07	.025	.0001	.0070	.0001	.001
%RSD	.1855	.0456	.1117	.2638	1.052	1.517	.8459	.1587	.0304
#1	.2289	167.1	20.35	27.70	2.424	.0055	.8153	.0885	4.011
#2	.2281	167.1	20.35	27.55	2.383	.0055	.8275	.0886	4.009
#3	.2282	167.2	20.39	27.63	2.379	.0054	.8272	.0883	4.010

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0306	.0008	2.781	.0201	.1451	2.435	-.0081	.1791	.5869
Stddev	.0000	.0005	.005	.0001	.0004	.025	.0011	.0005	.0001
%RSD	.0928	66.64	.1642	.2979	.2473	1.035	13.18	.2634	.0231
#1	.0306	.0004	2.785	.0202	.1447	2.433	-.0069	.1793	.5867
#2	.0306	.0014	2.783	.0201	.1451	2.412	-.0085	.1795	.5869
#3	.0305	.0007	2.776	.0201	.1454	2.462	-.0089	.1786	.5870

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2592.5	10526.	94365.	11633.
Stddev	2.9	10.	548.	94.
%RSD	.11008	.09650	.58055	.80439
#1	2591.8	10534.	93733.	11525.
#2	2595.7	10515.	94670.	11696.
#3	2590.1	10530.	94692.	11676.

Zoom In Zoom Out

Sample Name: FA35653-4 Acquired: 8/2/2016 11:22:08 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	.0022	121.6	.0605	1.082	.0151	402.5	.0069	.0438
Stddev	.0004	1.1	.0005	.002	.0001	3.1	.0004	.0001
%RSD	16.78	.9423	.7482	.1692	.3383	.7794	5.221	.1579
#1	.0026	122.9	.0609	1.082	.0151	403.8	.0065	.0439
#2	.0018	120.9	.0606	1.083	.0151	404.8	.0069	.0438
#3	.0023	120.9	.0600	1.080	.0152	399.0	.0072	.0438

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	.0925	.2424	159.8	27.87	108.8	2.657	.0067	.7975
Stddev	.0003	.0009	3.0	.04	.3	.011	.0001	.0032
%RSD	.3503	.3734	1.882	.1383	.2533	.4112	1.348	.4028
#1	.0928	.2431	162.8	27.90	108.9	2.659	.0067	.7957
#2	.0922	.2427	159.9	27.88	108.9	2.646	.0066	.8012
#3	.0925	.2414	156.8	27.83	108.4	2.667	.0066	.7956

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	.1026	.6058	-.0003	.0007	1.914	.0223	.6097	1.864
Stddev	.0001	.0015	.0009	.0017	.001	.0001	.0010	.017
%RSD	.1314	.2431	277.7	225.4	.0721	.5901	.1582	.9261
#1	.1027	.6066	-.0007	.0025	1.912	.0224	.6102	1.860
#2	.1025	.6041	-.0010	-.0008	1.914	.0221	.6103	1.849
#3	.1025	.6066	.0007	.0006	1.915	.0223	.6086	1.883

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	F-.0139	.2218	.5961
Stddev	.0016	.0004	.0009
%RSD	11.46	.1976	.1470
#1	-.0156	.2218	.5966
#2	-.0124	.2213	.5951
#3	-.0138	.2222	.5967

7.1

7

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: FA35653-4 Acquired: 8/2/2016 11:22:08 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2239.9	10401.	92515.	12149.
Stddev	3.3	10.	411.	72.
%RSD	.14930	.09487	.44465	.59240
#1	2240.7	10409.	92670.	12068.
#2	2242.7	10404.	92826.	12173.
#3	2236.2	10390.	92048.	12206.

Zoom In Zoom Out

Sample Name: FA35653-5 Acquired: 8/2/2016 11:26:51 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	.0012	66.77	.0403	.5718	.0118	145.4	.0022	.0277
Stddev	.0001	.07	.0001	.0013	.0000	1.8	.0000	.0001
%RSD	10.36	.1019	.3013	.2280	.0778	1.245	.8452	.4151
#1	.0011	66.74	.0403	.5705	.0118	147.5	.0022	.0278
#2	.0014	66.85	.0404	.5731	.0118	144.2	.0022	.0276
#3	.0012	66.73	.0401	.5717	.0118	144.6	.0022	.0279

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	.0510	.0797	105.6	14.29	31.57	1.614	.0061	.4494
Stddev	.0001	.0001	.1	.01	.11	.004	.0000	.0004
%RSD	.2009	.0806	.1244	.0981	.3325	.2691	.6758	.0957
#1	.0511	.0796	105.5	14.27	31.62	1.611	.0061	.4495
#2	.0511	.0797	105.5	14.29	31.45	1.619	.0061	.4490
#3	.0509	.0798	105.7	14.30	31.65	1.613	.0061	.4498

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	.0557	.4548	-.0010	-.0004	3.029	.0137	.2145	1.406
Stddev	.0000	.0011	.0008	.0002	.006	.0001	.0007	.006
%RSD	.0575	.2362	74.96	50.84	.1923	.7616	.3369	.4514
#1	.0557	.4546	-.0006	-.0002	3.025	.0137	.2140	1.413
#2	.0557	.4538	-.0005	-.0005	3.026	.0136	.2153	1.405
#3	.0558	.4559	-.0019	-.0006	3.035	.0138	.2142	1.401

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	F-.0123	.1505	.3656
Stddev	.0017	.0005	.0006
%RSD	13.44	.3294	.1731
#1	-.0105	.1511	.3649
#2	-.0125	.1502	.3660
#3	-.0138	.1503	.3659

Zoom In Zoom Out

Sample Name: FA35653-5 Acquired: 8/2/2016 11:26:51 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2439.0	13024.	115820.	14736.
Stddev	3.6	12.	243.	124.
%RSD	.14619	.09354	.20994	.84481
#1	2436.8	13038.	115540.	14623.
#2	2443.1	13016.	115960.	14869.
#3	2437.1	13018.	115950.	14715.

Zoom In Zoom Out

Sample Name: FA35731-33 Acquired: 8/2/2016 11:31:18 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0296	217.0	.4199	2.647	.0038	32.56	.0704	.3854	.8728	4.726
Stddev	.0036	.9	.0033	.012	.0007	.12	.0011	.0007	.0054	.012
%RSD	12.18	.4197	.7859	.4351	18.82	.3669	1.611	.1822	.6200	.2451
#1	.0318	218.0	.4188	2.661	.0046	32.59	.0700	.3859	.8667	4.733
#2	.0254	216.6	.4236	2.642	.0035	32.66	.0695	.3846	.8768	4.713
#3	.0314	216.3	.4173	2.640	.0033	32.42	.0717	.3856	.8751	4.732

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	2380.	23.72	71.70	15.54	.1412	2.815	.8945	9.907	.2261	.0329
Stddev	6.	.24	.47	.02	.0006	.062	.0008	.024	.0167	.0022
%RSD	.2454	1.016	.6600	.1320	.4398	2.213	.0868	.2394	7.379	6.603
#1	2387.	23.69	72.20	15.53	.1411	2.814	.8936	9.885	.2454	.0316
#2	2380.	23.97	71.26	15.56	.1418	2.753	.8951	9.932	.2176	.0354
#3	2375.	23.49	71.65	15.53	.1406	2.877	.8947	9.904	.2155	.0318

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	3.018	9.511	.1664	15.54	.0081	.6533	19.39
Stddev	.009	.017	.0007	.02	.0057	.0007	.01
%RSD	.3116	.1736	.4104	.1044	70.71	.1018	.0579
#1	3.019	9.499	.1660	15.56	.0016	.6525	19.38
#2	3.026	9.530	.1671	15.54	.0103	.6536	19.39
#3	3.007	9.505	.1660	15.52	.0123	.6537	19.40

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2805.4	6415.0	58388.	7085.0
Stddev	4.6	11.5	237.	11.1
%RSD	.16571	.17872	.40627	.15639
#1	2810.4	6421.4	58648.	7097.7
#2	2804.4	6421.8	58182.	7080.0
#3	2801.3	6401.8	58335.	7077.2

Zoom In Zoom Out

Sample Name: MP30663-PS1 Acquired: 8/2/2016 11:35:20 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0776	227.1	.5331	3.031	.0534	37.87	.1233	.4457	.9556	4.947
Stddev	.0030	.4	.0106	.004	.0004	.13	.0056	.0011	.0054	.010
%RSD	3.893	.1892	1.987	.1439	.7412	.3378	4.576	.2552	.5645	.1955
#1	.0792	227.6	.5423	3.036	.0537	37.95	.1197	.4447	.9532	4.949
#2	.0794	227.0	.5355	3.030	.0536	37.94	.1203	.4456	.9519	4.955
#3	.0741	226.8	.5215	3.028	.0530	37.73	.1298	.4469	.9618	4.936

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	2437.	34.94	79.48	16.06	.2464	13.22	1.022	10.24	.3439	.1371
Stddev	54.	.23	.61	.04	.0018	.05	.004	.02	.0083	.0218
%RSD	2.198	.6512	.7722	.2711	.7273	.3726	.4421	.1666	2.405	15.90
#1	2472.	34.75	79.92	16.01	.2484	13.21	1.026	10.25	.3479	.1506
#2	2463.	34.87	79.75	16.06	.2458	13.18	1.024	10.25	.3493	.1487
#3	2375.	35.19	78.78	16.10	.2450	13.28	1.017	10.22	.3344	.1119

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	3.715	9.825	.2203	16.47	.0995	.7271	20.17
Stddev	.007	.022	.0007	.02	.0089	.0026	.04
%RSD	.1785	.2284	.3121	.1226	8.912	.3642	.1739
#1	3.708	9.824	.2210	16.45	.0928	.7249	20.17
#2	3.716	9.803	.2200	16.46	.1096	.7262	20.14
#3	3.721	9.848	.2197	16.49	.0961	.7300	20.21

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2780.2	6381.5	57739.	6959.6
Stddev	5.8	8.3	378.	50.9
%RSD	.20711	.13028	.65518	.73114
#1	2773.6	6378.5	58087.	6937.4
#2	2784.2	6390.9	57792.	6923.6
#3	2782.9	6375.2	57337.	7017.9

Zoom In Zoom Out

Sample Name: MP30663-SD1 Acquired: 8/2/2016 11:39:24 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 50.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0377	218.2	.4086	2.667	.0013	31.54	.0587	.3870	.8859	4.692
Stddev	.0056	.9	.0289	.003	.0036	.09	.0011	.0060	.0160	.017
%RSD	14.90	.3930	7.080	.1241	272.0	.2807	1.932	1.549	1.801	.3601
#1	.0382	217.3	.4394	2.668	.0022	31.52	.0580	.3930	.8818	4.696
#2	.0431	219.0	.3820	2.669	-.0026	31.64	.0580	.3810	.8724	4.706
#3	.0319	218.3	.4043	2.663	.0045	31.47	.0600	.3870	.9035	4.673

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	2460.	24.51	73.85	15.77	.1219	2.774	.8747	9.980	.1751	-.0300
Stddev	10.	.76	.41	.03	.0036	.382	.0054	.020	.0877	.0518
%RSD	.3872	3.111	.5533	.1679	2.993	13.79	.6157	.1994	50.12	172.6
#1	2449.	24.57	73.70	15.75	.1259	2.713	.8694	9.967	.0820	-.0879
#2	2468.	23.72	73.54	15.80	.1210	2.426	.8746	9.969	.2563	-.0140
#3	2462.	25.24	74.32	15.75	.1188	3.184	.8801	10.00	.1870	.0119

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	4.202	9.750	.1632	16.00	-.0131	.6633	19.92
Stddev	.011	.017	.0025	.03	.0100	.0050	.03
%RSD	.2686	.1728	1.541	.1829	76.20	.7508	.1262
#1	4.190	9.732	.1623	15.97	-.0016	.6591	19.91
#2	4.212	9.755	.1660	16.03	-.0184	.6621	19.90
#3	4.203	9.764	.1612	15.99	-.0192	.6688	19.95

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2856.2	6385.0	57991.	6869.4
Stddev	9.1	14.6	164.	33.9
%RSD	.31754	.22869	.28273	.49356
#1	2860.5	6398.0	57832.	6898.8
#2	2862.2	6388.0	57981.	6832.3
#3	2845.7	6369.2	58160.	6877.0

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 11:43:27 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2445	39.49	1.997	2.034	1.945	39.34	1.977	1.984	2.007	1.959
Stddev	.0005	.14	.001	.011	.007	.11	.001	.003	.005	.002
%RSD	.2243	.3439	.0276	.5293	.3472	.2771	.0572	.1259	.2695	.0955
#1	.2443	39.33	1.996	2.022	1.937	39.21	1.978	1.986	2.009	1.961
#2	.2440	39.60	1.997	2.042	1.950	39.38	1.976	1.985	2.001	1.957
#3	.2451	39.53	1.996	2.037	1.948	39.42	1.976	1.982	2.011	1.959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.27	39.71	38.46	1.991	1.948	40.11	2.016	1.913	1.985	1.993
Stddev	.21	.14	.11	.003	.001	.13	.001	.006	.002	.003
%RSD	.5392	.3468	.2856	.1670	.0661	.3234	.0581	.3161	.0981	.1667
#1	38.08	39.55	38.35	1.993	1.947	39.96	2.016	1.909	1.983	1.995
#2	38.49	39.82	38.48	1.987	1.949	40.17	2.016	1.910	1.987	1.994
#3	38.25	39.75	38.56	1.993	1.949	40.21	2.014	1.920	1.984	1.989
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.600	2.028	1.966	1.925	1.946	1.955	1.972
Stddev	.002	.002	.017	.004	.007	.003	.002
%RSD	.1443	.0899	.8759	.2145	.3653	.1758	.0985
#1	1.599	2.030	1.969	1.927	1.940	1.955	1.974
#2	1.602	2.027	1.947	1.921	1.946	1.952	1.972
#3	1.598	2.027	1.981	1.928	1.954	1.959	1.970
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 11:43:27 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2505.1	6136.8	55388.	6771.8
Stddev	6.2	5.1	141.	40.4
%RSD	.24550	.08347	.25451	.59630
#1	2507.8	6130.9	55302.	6815.2
#2	2509.4	6139.1	55551.	6735.4
#3	2498.0	6140.4	55312.	6764.9

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 11:47:25 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0072	-.0006	.0001	.0003	.0022	.0000	.0000	.0001
Stddev	.0002	.0039	.0004	.0001	.0001	.0017	.0000	.0001	.0003
%RSD	46.96	53.87	64.32	137.1	33.30	77.71	329.7	33910.	336.1
#1	.0002	.0114	-.0011	.0002	.0003	.0023	.0000	.0000	.0001
#2	.0005	.0038	-.0004	-.0001	.0003	.0039	.0000	-.0001	.0004
#3	.0004	.0065	-.0004	.0002	.0002	.0005	.0000	.0001	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0228	.0650	.0113	.0001	F.0014	.0198	.0002	-.0004
Stddev	.0004	.0042	.0104	.0145	.0000	.0004	.0066	.0002	.0005
%RSD	185.6	18.56	15.93	128.3	3.662	25.39	33.12	115.2	124.3
#1	-.0002	.0263	.0770	.0170	.0001	.0018	.0220	.0000	-.0006
#2	.0007	.0241	.0588	-.0052	.0001	.0013	.0251	.0002	.0002
#3	.0003	.0181	.0593	.0222	.0001	.0011	.0125	.0004	-.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	-.0010	-.0017	.0001	.0003	.0008	.0001	.0003	.0000
Stddev	.0007	.0014	.0003	.0001	.0001	.0001	.0002	.0001	.0000
%RSD	89.96	143.1	15.41	136.1	44.99	14.43	121.1	41.83	9.041
#1	.0013	.0005	-.0015	.0001	.0004	.0007	.0003	.0003	.0000
#2	.0000	-.0011	-.0020	.0000	.0002	.0007	.0002	.0005	.0000
#3	.0012	-.0024	-.0015	.0003	.0002	.0009	.0000	.0002	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 11:47:25 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2907.9	6372.4	58058.	6773.6
Stddev	6.6	7.7	202.	36.6
%RSD	.22757	.12161	.34787	.54084
#1	2914.5	6379.6	58168.	6753.7
#2	2901.2	6364.2	57824.	6751.2
#3	2908.1	6373.4	58180.	6815.8

Zoom In Zoom Out

Sample Name: FA35731-39 Acquired: 8/2/2016 11:51:36 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 4.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0196	273.7	.3651	5.326	.0060	34.39	.0582	.1940	.6422
Stddev	.0004	.6	.0025	.010	.0002	.06	.0002	.0008	.0015
%RSD	2.064	.2082	.6715	.1916	3.076	.1658	.4049	.4327	.2281
#1	.0195	273.1	.3636	5.316	.0059	34.33	.0581	.1942	.6422
#2	.0192	274.1	.3679	5.337	.0060	34.41	.0581	.1931	.6436
#3	.0200	274.1	.3637	5.325	.0062	34.44	.0585	.1947	.6407

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	1.586	1087.	29.71	82.82	F27.92	.0831	2.695	.4725	5.761
Stddev	.004	4.	.13	.35	.11	.0005	.029	.0010	.012
%RSD	.2185	.3633	.4258	.4183	.3839	.5739	1.084	.2182	.2161
#1	1.582	1090.	29.56	82.43	27.85	.0837	2.677	.4736	5.770
#2	1.588	1083.	29.76	82.93	28.04	.0828	2.679	.4715	5.747
#3	1.589	1088.	29.80	83.09	27.86	.0830	2.729	.4723	5.765

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0799	.0220	2.843	.4193	.2342	F17.22	.0041	.8649	10.31
Stddev	.0022	.0053	.001	.0014	.0004	.13	.0033	.0017	.01
%RSD	2.711	24.01	.0251	.3304	.1695	.7433	80.66	.1948	.0627
#1	.0806	.0281	2.843	.4203	.2343	17.34	.0024	.8638	10.32
#2	.0817	.0190	2.842	.4177	.2345	17.08	.0020	.8642	10.30
#3	.0775	.0189	2.843	.4199	.2338	17.25	.0079	.8669	10.31

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2750.8	6752.6	60760.	7483.7
Stddev	3.6	11.0	67.	25.6
%RSD	.12953	.16323	.10946	.34230
#1	2746.7	6740.1	60704.	7513.1
#2	2752.6	6761.0	60743.	7466.7
#3	2753.1	6756.7	60834.	7471.2

Zoom In Zoom Out

Sample Name: FA35750-9 Acquired: 8/2/2016 11:56:02 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 4.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0023	47.15	.0025	.3771	.0019	1304.	.0358	.0031	.2729	.4225
Stddev	.0010	.10	.0006	.0016	.0002	9.	.0001	.0003	.0013	.0019
%RSD	43.62	.2085	24.71	.4319	7.962	.6754	.2316	9.293	.4584	.4571
#1	.0028	47.24	.0026	.3788	.0018	1294.	.0358	.0032	.2727	.4214
#2	.0031	47.05	.0018	.3767	.0021	1306.	.0357	.0028	.2718	.4214
#3	.0012	47.18	.0030	.3756	.0019	1311.	.0358	.0033	.2743	.4247

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	27.58	1.010	6.442	.1024	-.0002	.8604	.0616	3.111	.0024	-.0026
Stddev	.11	.049	.039	.0008	.0003	.0445	.0004	.002	.0026	.0030
%RSD	.3869	4.889	.6068	.8002	151.0	5.171	.6633	.0678	106.7	116.7
#1	27.51	.9836	6.447	.1033	.0001	.9105	.0614	3.110	.0020	-.0001
#2	27.70	1.067	6.401	.1021	-.0001	.8256	.0621	3.110	.0052	-.0059
#3	27.52	.9792	6.479	.1017	-.0006	.8452	.0613	3.113	.0001	-.0017

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	2.966	.0876	4.483	.3445	-.0022	.0555	2.660
Stddev	.005	.0008	.018	.0011	.0031	.0013	.002
%RSD	.1625	.8810	.4063	.3227	140.8	2.263	.0644
#1	2.962	.0875	4.502	.3456	-.0015	.0570	2.660
#2	2.971	.0869	4.481	.3443	.0005	.0547	2.658
#3	2.965	.0884	4.465	.3434	-.0056	.0549	2.661

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2454.7	6102.6	55021.	6841.8
Stddev	2.9	3.9	135.	80.8
%RSD	.12012	.06405	.24577	1.1803
#1	2452.8	6098.2	54890.	6933.9
#2	2458.1	6105.8	55160.	6783.2
#3	2453.3	6103.8	55014.	6808.1

Zoom In Zoom Out

Sample Name: MP30669-MB1 Acquired: 8/2/2016 12:20:02 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0066	-.0010	-.0002	-.0001	.0614	-.0001	-.0002	.0000	.0001
Stddev	.0001	.0104	.0002	.0002	.0000	.0124	.0000	.0000	.0003	.0005
%RSD	12.19	158.7	18.00	90.61	21.97	20.22	19.98	15.63	1129.	421.0
#1	.0004	-.0178	-.0012	-.0004	.0000	.0754	-.0001	-.0002	.0002	-.0004
#2	.0004	-.0045	-.0008	-.0003	-.0001	.0571	-.0001	-.0002	.0002	.0001
#3	.0005	.0027	-.0010	.0000	-.0001	.0517	-.0001	-.0002	-.0004	.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0155	.0147	.0190	-.0001	-.0003	.0031	.0000	-.0006	.0014	-.0017
Stddev	.0048	.0309	.0102	.0000	.0000	.0067	.0001	.0002	.0003	.0009
%RSD	30.90	211.0	53.62	5.594	8.086	212.7	680.3	28.98	22.21	53.83
#1	.0200	-.0209	.0295	-.0001	-.0003	-.0040	.0001	-.0008	.0017	-.0023
#2	.0160	.0355	.0092	-.0001	-.0003	.0091	-.0001	-.0004	.0012	-.0021
#3	.0105	.0293	.0184	-.0001	-.0004	.0043	.0000	-.0007	.0011	-.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0026	.0000	.0000	.0009	-.0020	-.0001	.0006
Stddev	.0002	.0002	.0000	.0001	.0002	.0002	.0000
%RSD	8.396	372.0	69.47	10.56	12.03	308.8	3.739
#1	.0029	.0002	.0001	.0011	-.0020	.0001	.0005
#2	.0025	-.0001	.0000	.0009	-.0017	-.0002	.0006
#3	.0025	.0001	.0001	.0009	-.0021	-.0001	.0005
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: MP30669-MB1 Acquired: 8/2/2016 12:20:02 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2856.3	6236.6	57805.	6699.4
Stddev	2.2	11.9	312.	48.5
%RSD	.07538	.19088	.53965	.72354
#1	2857.8	6246.3	57445.	6753.5
#2	2857.2	6240.3	57987.	6659.9
#3	2853.8	6223.3	57984.	6684.8

Zoom In Zoom Out

Sample Name: MP30669-B1 Acquired: 8/2/2016 12:24:13 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0505	28.74	2.098	2.188	.0522	27.15	.0525	.5279	.2139	.2640
Stddev	.0003	.05	.002	.005	.0001	.02	.0001	.0009	.0003	.0009
%RSD	.5319	.1855	.0834	.2198	.2163	.0587	.2203	.1687	.1339	.3383
#1	.0505	28.77	2.099	2.183	.0522	27.16	.0527	.5283	.2136	.2629
#2	.0508	28.76	2.099	2.193	.0523	27.16	.0525	.5268	.2139	.2646
#3	.0503	28.67	2.096	2.187	.0521	27.13	.0524	.5285	.2142	.2644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.26	26.76	25.84	.5302	.5124	27.28	.5423	.4976	.5290	2.105
Stddev	.10	.05	.06	.0008	.0004	.03	.0007	.0008	.0021	.004
%RSD	.3770	.1813	.2251	.1543	.0777	.1098	.1226	.1671	.4043	.2044
#1	27.14	26.76	25.90	.5293	.5129	27.27	.5430	.4976	.5308	2.104
#2	27.32	26.71	25.80	.5309	.5121	27.31	.5421	.4984	.5296	2.101
#3	27.32	26.81	25.80	.5304	.5123	27.26	.5417	.4967	.5266	2.110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023	.5415	.5007	.5048	2.035	.4938	.5222
Stddev	.0002	.0006	.0006	.0015	.002	.0007	.0008
%RSD	9.001	.1069	.1101	.2963	.0829	.1339	.1605
#1	.0025	.5421	.5012	.5032	2.035	.4931	.5225
#2	.0021	.5415	.5002	.5051	2.034	.4941	.5212
#3	.0022	.5410	.5008	.5062	2.037	.4943	.5228
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP30669-B1 Acquired: 8/2/2016 12:24:13 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2559.5	6058.0	55480.	6748.6
Stddev	3.5	9.0	242.	9.5
%RSD	.13556	.14826	.43614	.14149
#1	2555.8	6047.7	55515.	6748.8
#2	2559.9	6062.1	55222.	6739.0
#3	2562.7	6064.1	55702.	6758.1

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: C46693-2T Acquired: 8/2/2016 12:28:12 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0005	.1399	.0002	.0436	.0000	5.047	.0003	.0003	.0005
Stddev	.0002	.0070	.0007	.0003	.0001	.012	.0000	.0001	.0002
%RSD	35.57	5.006	323.4	.6957	314.5	.2317	2.731	25.31	38.87
#1	.0005	.1469	.0005	.0433	.0000	5.033	.0003	.0003	.0004
#2	.0003	.1399	.0007	.0436	.0001	5.056	.0003	.0003	.0008
#3	.0007	.1329	-.0006	.0439	.0000	5.051	.0003	.0004	.0005

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0426	.1071	.3609	.6932	.0656	.0000	F190.7	.0008	.6722
Stddev	.0001	.0046	.0056	.0149	.0002	.000	2.9	.0003	.0016
%RSD	.1481	4.269	1.557	2.152	.2928	120.4	1.529	37.94	.2416
#1	.0427	.1107	.3553	.6763	.0658	-.0001	187.7	.0005	.6704
#2	.0426	.1086	.3608	.7045	.0655	.0000	190.9	.0011	.6726
#3	.0426	.1019	.3665	.6988	.0655	.0000	193.6	.0007	.6735

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0000	.0001	.1579	.0001	.0118	.0046	-.0005	.0002	.1175
Stddev	.000	.0007	.0001	.0002	.0001	.0002	.0005	.0002	.0001
%RSD	16640.	642.1	.0398	202.9	.8507	5.264	92.50	73.98	.1249
#1	.0002	.0003	.1580	.0002	.0119	.0048	-.0002	.0001	.1174
#2	.0000	-.0007	.1579	.0003	.0119	.0044	-.0011	.0004	.1177
#3	-.0002	.0007	.1579	-.0001	.0117	.0047	-.0003	.0002	.1174

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2523.6	5965.8	53334.	6697.8
Stddev	5.2	6.3	133.	30.1
%RSD	.20704	.10614	.24858	.44890
#1	2524.6	5958.5	53203.	6731.9
#2	2518.0	5970.0	53332.	6675.3
#3	2528.3	5968.9	53468.	6686.1

Zoom In Zoom Out

Sample Name: MP30669-D1 Acquired: 8/2/2016 12:32:28 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0003	.1721	.0000	.0443	.0000	5.177	.0003	.0003	.0006
Stddev	.0001	.0055	.000	.0002	.0000	.022	.0000	.0001	.0001
%RSD	19.89	3.174	1403.	.3488	515.7	.4307	7.533	43.24	11.60
#1	.0003	.1689	-.0002	.0442	.0000	5.161	.0003	.0002	.0005
#2	.0002	.1690	.0003	.0445	.0000	5.168	.0004	.0004	.0007
#3	.0004	.1784	-.0002	.0442	.0000	5.203	.0003	.0002	.0006

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0437	.0953	.4394	.7039	.0670	-.0005	F192.6	.0008	.6888
Stddev	.0004	.0007	.0345	.0120	.0001	.0002	.9	.0001	.0010
%RSD	.9864	.7005	7.850	1.701	.1231	35.71	.4852	17.54	.1416
#1	.0432	.0957	.4412	.7174	.0670	-.0004	193.2	.0007	.6877
#2	.0439	.0946	.4729	.6945	.0669	-.0006	191.5	.0008	.6892
#3	.0439	.0957	.4040	.7000	.0671	-.0003	193.1	.0010	.6894

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0011	-.0003	.1662	-.0001	.0122	.0046	-.0014	.0003	.1210
Stddev	.0004	.0006	.0007	.0002	.0000	.0001	.0005	.0002	.0004
%RSD	42.42	187.5	.4380	436.4	.3245	1.225	34.14	68.44	.3485
#1	.0007	-.0006	.1666	.0001	.0122	.0046	-.0014	.0002	.1207
#2	.0016	-.0007	.1666	.0001	.0122	.0045	-.0010	.0001	.1208
#3	.0009	.0004	.1653	-.0003	.0123	.0045	-.0019	.0005	.1215

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2524.4	5986.4	53477.	6702.7
Stddev	4.8	9.8	171.	24.1
%RSD	.18840	.16392	.31921	.35900
#1	2529.8	5997.6	53317.	6719.9
#2	2520.7	5979.5	53456.	6713.1
#3	2522.8	5982.0	53657.	6675.2

Zoom In Zoom Out

Sample Name: MP30669-SD1 Acquired: 8/2/2016 12:36:44 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0031	.1218	-.0015	.0420	.0000	4.960	-.0003	.0000	.0004	.0429
Stddev	.0003	.0478	.0011	.0003	.0007	.008	.0002	.0008	.0008	.0014
%RSD	10.62	39.27	72.39	.6144	1769.	.1696	76.68	1808.	224.1	3.366
#1	.0028	.1191	-.0015	.0417	.0003	4.969	.0000	-.0003	-.0006	.0427
#2	.0031	.1709	-.0004	.0422	.0005	4.953	-.0005	-.0005	.0010	.0445
#3	.0035	.0754	-.0026	.0420	-.0007	4.959	-.0004	.0010	.0007	.0416

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0639	.7111	.7066	.0641	-.0026	191.2	.0009	.6507	.0017	-.0064
Stddev	.0152	.0514	.0599	.0002	.0003	.6	.0012	.0010	.0028	.0028
%RSD	23.83	7.225	8.477	.3713	13.05	.3300	137.5	.1559	170.7	44.25
#1	.0731	.6963	.6393	.0639	-.0024	191.0	.0022	.6507	.0046	-.0085
#2	.0463	.6687	.7264	.0643	-.0025	190.6	.0001	.6497	.0013	-.0032
#3	.0722	.7682	.7540	.0641	-.0030	191.9	.0003	.6518	-.0010	-.0074

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1483	-.0010	.0111	.0028	-.0038	.0008	.1485
Stddev	.0018	.0005	.0001	.0006	.0025	.0008	.0002
%RSD	1.237	48.26	1.129	20.27	64.59	100.5	.1362
#1	.1463	-.0015	.0112	.0024	-.0053	.0015	.1487
#2	.1488	-.0009	.0110	.0025	-.0010	.0000	.1483
#3	.1499	-.0006	.0110	.0034	-.0053	.0008	.1486

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2698.8	6171.5	55742.	6699.2
Stddev	7.7	17.2	68.	33.9
%RSD	.28541	.27909	.12165	.50563
#1	2707.7	6188.3	55805.	6681.8
#2	2693.8	6172.5	55670.	6677.5
#3	2695.0	6153.9	55752.	6738.2

Zoom In Zoom Out

Sample Name: MP30669-S1 Acquired: 8/2/2016 12:40:53 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0501	28.09	2.079	2.179	.0517	31.55	.0515	.5092	.2077
Stddev	.0005	.04	.007	.003	.0001	.04	.0002	.0008	.0004
%RSD	.9114	.1322	.3280	.1507	.1081	.1108	.3207	.1528	.1820
#1	.0505	28.11	2.071	2.179	.0516	31.59	.0513	.5083	.2079
#2	.0503	28.12	2.080	2.182	.0517	31.56	.0516	.5097	.2072
#3	.0496	28.05	2.085	2.175	.0517	31.52	.0516	.5095	.2079

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.3018	26.95	26.72	25.83	.5834	.4977	F218.7	.5200	1.198
Stddev	.0005	.07	.04	.04	.0013	.0011	3.1	.0012	.004
%RSD	.1802	.2737	.1358	.1483	.2179	.2193	1.413	.2332	.3190
#1	.3015	26.91	26.76	25.78	.5834	.4965	215.2	.5189	1.194
#2	.3015	27.04	26.72	25.85	.5821	.4980	221.2	.5197	1.200
#3	.3025	26.92	26.69	25.85	.5846	.4987	219.7	.5213	1.201

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.5163	2.105	.1669	.5137	.5069	.5019	1.974	.4855	.6305
Stddev	.0012	.004	.0003	.0018	.0002	.0007	.005	.0012	.0012
%RSD	.2302	.1962	.1879	.3425	.0345	.1443	.2738	.2471	.1872
#1	.5153	2.100	.1665	.5118	.5068	.5023	1.969	.4848	.6292
#2	.5176	2.108	.1669	.5142	.5071	.5010	1.979	.4848	.6308
#3	.5161	2.106	.1672	.5152	.5068	.5023	1.974	.4868	.6315

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2413.8	5968.7	53293.	6735.2
Stddev	1.4	3.6	198.	12.5
%RSD	.05636	.06026	.37186	.18499
#1	2415.2	5971.8	53357.	6748.4
#2	2412.5	5969.6	53451.	6723.6
#3	2413.6	5964.8	53070.	6733.7

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: MP30669-S2 Acquired: 8/2/2016 12:53:28 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0520	29.10	2.174	2.249	.0531	32.65	.0538	.5289	.2162
Stddev	.0001	.06	.001	.003	.0002	.09	.0002	.0004	.0006
%RSD	.2012	.2097	.0380	.1374	.3885	.2614	.3023	.0779	.2688
#1	.0519	29.05	2.174	2.245	.0529	32.56	.0537	.5287	.2156
#2	.0520	29.08	2.175	2.250	.0531	32.65	.0536	.5287	.2164
#3	.0521	29.17	2.173	2.251	.0533	32.73	.0539	.5294	.2167

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.3122	27.63	27.50	26.71	.6031	.5184	F228.7	.5425	1.237
Stddev	.0010	.06	.03	.10	.0016	.0006	3.0	.0004	.001
%RSD	.3247	.2338	.0923	.3563	.2675	.1237	1.311	.0672	.0758
#1	.3130	27.57	27.49	26.62	.6017	.5177	230.3	.5423	1.236
#2	.3111	27.64	27.48	26.69	.6026	.5186	225.2	.5422	1.237
#3	.3125	27.70	27.53	26.81	.6049	.5189	230.5	.5429	1.238

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.5399	2.199	.1738	.5386	.5224	.5167	2.041	.5037	.6562
Stddev	.0012	.003	.0003	.0008	.0005	.0016	.007	.0011	.0008
%RSD	.2223	.1293	.1522	.1454	.1050	.3155	.3450	.2182	.1271
#1	.5396	2.196	.1739	.5382	.5222	.5163	2.033	.5029	.6554
#2	.5412	2.202	.1740	.5381	.5221	.5153	2.045	.5033	.6560
#3	.5389	2.199	.1735	.5395	.5231	.5185	2.045	.5050	.6571

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2405.7	5921.8	53373.	6752.8
Stddev	1.8	2.9	333.	54.0
%RSD	.07560	.04970	.62436	.79990
#1	2406.3	5922.8	53737.	6784.6
#2	2407.1	5924.1	53300.	6783.5
#3	2403.7	5918.5	53083.	6690.5

Zoom In Zoom Out

Sample Name: FA35726-11 Acquired: 8/2/2016 12:59:08 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0003	.1662	-.0017	.0388	.0000	4.233	.0005	.0006	.0007
Stddev	.0003	.0010	.0010	.0002	.0001	.015	.0000	.0001	.0001
%RSD	91.39	.5882	58.90	.4640	123.4	.3595	8.155	15.09	13.42
#1	.0001	.1652	-.0025	.0387	.0001	4.230	.0005	.0006	.0007
#2	.0007	.1664	-.0006	.0390	.0000	4.250	.0004	.0006	.0006
#3	.0002	.1671	-.0019	.0388	.0000	4.220	.0005	.0005	.0007

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0090	.6052	.3832	.3367	.0404	-.0002	F255.6	.0025	.0198
Stddev	.0003	.0039	.0127	.0071	.0000	.0001	.5	.0002	.0002
%RSD	2.970	.6427	3.308	2.099	.1107	31.42	.2032	8.363	1.087
#1	.0088	.6021	.3689	.3444	.0404	-.0002	255.1	.0027	.0198
#2	.0093	.6095	.3877	.3305	.0405	-.0003	256.2	.0024	.0200
#3	.0090	.6039	.3930	.3353	.0404	-.0002	255.5	.0023	.0196

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0006	.0001	.1212	-.0001	.0060	.0048	-.0014	.0003	.2840
Stddev	.0008	.0010	.0004	.0001	.0001	.0002	.0007	.0002	.0006
%RSD	142.0	1092.	.3433	180.1	1.122	3.645	45.92	78.79	.2064
#1	.0015	.0001	.1208	.0001	.0059	.0046	-.0007	.0005	.2838
#2	-.0001	-.0009	.1216	-.0001	.0060	.0048	-.0019	.0000	.2835
#3	.0003	.0010	.1211	-.0002	.0060	.0049	-.0016	.0003	.2846

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2483.6	5917.1	52815.	6729.6
Stddev	6.2	13.9	100.	57.2
%RSD	.25090	.23455	.18982	.85007
#1	2490.6	5919.8	52931.	6708.2
#2	2481.5	5929.5	52763.	6686.1
#3	2478.6	5902.1	52752.	6794.4

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 13:03:23 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2464	39.86	2.027	2.053	1.971	39.74	2.023	2.026	2.024	1.985
Stddev	.0011	.07	.003	.004	.004	.07	.003	.004	.006	.003
%RSD	.4646	.1779	.1545	.1890	.1956	.1647	.1669	.1978	.2795	.1319
#1	.2452	39.85	2.027	2.054	1.969	39.80	2.023	2.028	2.020	1.983
#2	.2468	39.80	2.024	2.048	1.968	39.67	2.019	2.022	2.031	1.986
#3	.2474	39.94	2.031	2.055	1.975	39.75	2.026	2.029	2.023	1.988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.60	40.08	38.91	2.016	1.986	40.07	2.046	1.970	2.020	2.023
Stddev	.16	.10	.11	.002	.003	.03	.003	.004	.003	.002
%RSD	.4037	.2456	.2782	.1165	.1656	.0630	.1563	.2296	.1500	.0727
#1	38.61	40.16	38.87	2.014	1.984	40.07	2.046	1.967	2.019	2.025
#2	38.44	39.97	38.83	2.018	1.984	40.04	2.042	1.968	2.018	2.022
#3	38.76	40.11	39.03	2.017	1.990	40.09	2.049	1.975	2.023	2.022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.625	2.048	1.978	1.956	1.999	1.979	2.018
Stddev	.004	.004	.039	.003	.006	.005	.004
%RSD	.2136	.2216	1.986	.1613	.3088	.2336	.2177
#1	1.623	2.053	1.953	1.953	1.992	1.974	2.021
#2	1.622	2.044	1.957	1.955	2.002	1.984	2.013
#3	1.629	2.048	2.023	1.959	2.002	1.978	2.020
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 13:03:23 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2466.7	6085.5	55085.	6735.9
Stddev	7.3	9.0	108.	61.9
%RSD	.29581	.14770	.19657	.91939
#1	2472.2	6085.1	55202.	6708.1
#2	2469.6	6094.7	54989.	6806.9
#3	2458.4	6076.8	55063.	6692.7

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 13:07:28 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0086	-.0001	.0003	.0004	.0051	.0000	-.0001	.0001
Stddev	.0004	.0032	.0004	.0001	.0001	.0028	.0001	.0001	.0000
%RSD	72.91	36.73	357.6	39.62	21.86	55.06	256.3	157.5	32.65
#1	.0010	.0090	-.0004	.0004	.0005	.0074	.0001	-.0001	.0001
#2	.0005	.0116	.0003	.0002	.0004	.0060	.0000	.0000	.0002
#3	.0002	.0053	-.0003	.0003	.0003	.0020	.0000	-.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0193	.0987	.0208	.0002	F.0014	.0763	.0003	-.0007
Stddev	.0002	.0064	.0134	.0097	.0000	.0004	.0100	.0000	.0002
%RSD	185.3	33.30	13.59	46.66	17.47	32.92	13.15	4.638	24.26
#1	.0003	.0264	.0854	.0307	.0002	.0018	.0855	.0003	-.0008
#2	.0002	.0176	.0984	.0204	.0001	.0013	.0779	.0003	-.0005
#3	-.0001	.0139	.1123	.0113	.0002	.0009	.0656	.0003	-.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	-.0004	-.0003	.0001	.0003	.0008	.0001	.0003	.0001
Stddev	.0002	.0004	.0003	.0001	.0000	.0002	.0004	.0000	.0000
%RSD	25.40	103.9	105.9	131.7	15.42	25.36	479.3	5.475	21.10
#1	.0006	-.0009	.0000	.0001	.0003	.0010	.0001	.0003	.0001
#2	.0011	-.0001	-.0003	.0001	.0003	.0008	-.0003	.0003	.0001
#3	.0008	-.0002	-.0005	.0000	.0004	.0006	.0005	.0003	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 13:07:28 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2867.2	6331.5	57510.	6770.7
Stddev	4.3	11.0	399.	41.8
%RSD	.14955	.17450	.69461	.61729
#1	2868.3	6332.4	57443.	6770.5
#2	2862.5	6320.0	57939.	6812.6
#3	2870.9	6342.0	57148.	6729.0

Zoom In Zoom Out

Sample Name: FA35740-48 Acquired: 8/2/2016 13:11:40 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0002	.1066	-.0016	.0828	.0000	1.387	.0007	.0008	.0049
Stddev	.0001	.0030	.0003	.0001	.000	.006	.0000	.0001	.0001
%RSD	41.56	2.786	20.43	.0645	95.10	.4670	3.444	14.33	2.265
#1	.0003	.1046	-.0018	.0829	-.0001	1.391	.0007	.0007	.0048
#2	.0002	.1100	-.0018	.0828	-.0001	1.389	.0007	.0009	.0048
#3	.0002	.1052	-.0012	.0828	.0000	1.379	.0007	.0009	.0050

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0031	.0389	.8813	.3518	.0696	.0000	F168.9	.0057	.0599
Stddev	.0002	.0004	.0300	.0108	.0001	.0001	1.0	.0001	.0002
%RSD	6.707	.9987	3.408	3.055	.1082	226.9	.5877	.9911	.3367
#1	.0029	.0388	.8579	.3642	.0696	.0002	169.5	.0058	.0597
#2	.0030	.0393	.8708	.3447	.0695	.0000	167.7	.0057	.0601
#3	.0033	.0385	.9151	.3466	.0696	.0000	169.4	.0057	.0598

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0011	-.0012	.2084	.0001	.0075	.0003	-.0008	-.0001	.2803
Stddev	.0004	.0010	.0076	.0001	.0001	.0001	.0002	.0001	.0007
%RSD	35.87	87.16	3.628	137.9	1.556	43.82	24.15	65.35	.2367
#1	.0015	-.0001	.2063	.0003	.0077	.0003	-.0007	-.0001	.2800
#2	.0007	-.0012	.2168	.0000	.0074	.0004	-.0010	-.0002	.2798
#3	.0011	-.0022	.2022	.0001	.0075	.0001	-.0007	-.0001	.2810

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2537.8	6002.0	53454.	6788.2
Stddev	7.5	9.6	215.	8.8
%RSD	.29399	.16023	.40160	.12907
#1	2535.3	6007.1	53445.	6797.7
#2	2546.1	6008.1	53672.	6786.6
#3	2531.8	5990.9	53243.	6780.4

Zoom In Zoom Out

Sample Name: FA35750-10L Acquired: 8/2/2016 13:15:56 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0003	.4797	-.0012	.0069	.0000	2.715	-.0001	-.0002	.0013
Stddev	.0004	.0127	.0006	.0001	.000	.015	.0000	.0001	.0003
%RSD	145.7	2.639	51.01	1.591	191.8	.5691	27.17	62.25	24.10
#1	.0007	.4927	-.0018	.0068	.0000	2.732	-.0001	-.0001	.0010
#2	-.0001	.4674	-.0012	.0070	.0000	2.702	-.0001	-.0001	.0016
#3	.0002	.4792	-.0006	.0069	-.0001	2.710	-.0001	-.0003	.0012

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0004	.1380	.2153	.0837	.0014	-.0002	F151.7	.0004	.0015
Stddev	.0003	.0030	.0382	.0055	.0000	.0001	3.4	.0002	.0004
%RSD	89.22	2.177	17.73	6.542	2.492	60.54	2.241	56.22	25.91
#1	.0000	.1370	.1962	.0780	.0014	-.0001	154.1	.0007	.0019
#2	.0006	.1357	.1904	.0843	.0015	-.0003	153.2	.0003	.0014
#3	.0006	.1414	.2592	.0889	.0014	-.0002	147.8	.0003	.0012

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0005	.0001	.2697	.0000	.0277	.0200	-.0019	.0004	.0050
Stddev	.0006	.0012	.0099	.000	.0000	.0004	.0004	.0001	.0001
%RSD	105.1	1249.	3.680	748.2	.1087	1.904	19.24	20.65	1.445
#1	.0007	.0001	.2810	.0000	.0277	.0195	-.0016	.0005	.0051
#2	-.0001	.0013	.2657	.0001	.0277	.0201	-.0023	.0005	.0050
#3	.0010	-.0011	.2623	-.0001	.0277	.0203	-.0018	.0003	.0049

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2563.7	6020.7	54062.	6674.7
Stddev	3.4	7.8	158.	32.3
%RSD	.13428	.13004	.29206	.48345
#1	2560.7	6025.0	54008.	6653.4
#2	2567.4	6025.4	53938.	6711.9
#3	2562.9	6011.6	54239.	6658.9

Zoom In Zoom Out

Sample Name: FA35704-7 Acquired: 8/2/2016 13:20:14 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.4052	.1596	.2065	.2354	.3890	18.68	.1664	.0020	.3931
Stddev	.0006	.0057	.0003	.0009	.0016	.09	.0002	.0001	.0007
%RSD	.1547	3.571	.1510	.3801	.4221	.4990	.1023	3.278	.1895
#1	.4050	.1652	.2068	.2363	.3908	18.78	.1664	.0020	.3936
#2	.4047	.1597	.2062	.2346	.3876	18.64	.1662	.0021	.3935
#3	.4059	.1538	.2064	.2353	.3886	18.61	.1665	.0020	.3923

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0075	.0543	1.055	.9620	.2927	-.0005	F138.9	.1486	.2182
Stddev	.0002	.0018	.003	.0134	.0003	.0001	1.2	.0003	.0015
%RSD	2.727	3.230	.2737	1.398	.0920	17.67	.8665	.2178	.6778
#1	.0073	.0523	1.052	.9659	.2929	-.0004	140.1	.1487	.2167
#2	.0077	.0556	1.057	.9470	.2927	-.0005	137.7	.1482	.2184
#3	.0075	.0550	1.057	.9730	.2924	-.0006	139.0	.1488	.2196

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.3411	.4601	.2630	.0000	.0659	.0029	-.0013	.0011	.1510
Stddev	.0022	.0019	.0051	.0002	.0003	.0002	.0002	.0001	.0001
%RSD	.6379	.4106	1.958	3131.	.4585	5.239	17.95	8.875	.0903
#1	.3424	.4582	.2645	-.0001	.0662	.0031	-.0013	.0012	.1509
#2	.3386	.4600	.2573	.0003	.0656	.0029	-.0011	.0010	.1511
#3	.3424	.4620	.2672	-.0002	.0658	.0028	-.0016	.0010	.1509

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2542.1	6027.5	54376.	6684.8
Stddev	3.1	3.4	119.	36.6
%RSD	.12082	.05560	.21964	.54786
#1	2544.5	6023.7	54313.	6662.8
#2	2538.7	6030.1	54301.	6664.6
#3	2543.3	6028.7	54513.	6727.1

Zoom In Zoom Out

Sample Name: FA35771-1 Acquired: 8/2/2016 13:25:49 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0003	.0080	-.0008	.0002	.0000	.0507	.0000	-.0003	.0005	.0021
Stddev	.0001	.0090	.0002	.0000	.0000	.0010	.000	.0001	.0002	.0002
%RSD	36.19	112.2	26.51	15.95	207.2	2.017	25.78	40.37	34.51	10.98
#1	.0005	.0166	-.0006	.0002	.0000	.0496	.0000	-.0002	.0003	.0023
#2	.0003	.0088	-.0008	.0002	.0000	.0517	-.0001	-.0004	.0006	.0020
#3	.0002	-.0014	-.0011	.0002	.0000	.0508	-.0001	-.0002	.0006	.0019

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	-.0014	.4301	.0273	-.0001	.0001	2.177	.0003	.0015	.0030	-.0008
Stddev	.0018	.0167	.0190	.0000	.0000	.012	.0001	.0001	.0012	.0007
%RSD	128.5	3.886	69.60	9.792	31.73	.5327	48.06	7.044	40.87	85.38
#1	-.0034	.4198	.0091	-.0001	.0002	2.179	.0004	.0016	.0044	-.0001
#2	-.0009	.4211	.0259	-.0001	.0001	2.187	.0003	.0014	.0020	-.0010
#3	.0001	.4494	.0470	-.0001	.0002	2.164	.0001	.0016	.0027	-.0014

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0427	.0000	.0002	.0001	-.0013	-.0001	.0016
Stddev	.0020	.000	.0000	.0001	.0005	.0002	.0001
%RSD	4.656	559.3	30.33	98.33	34.61	228.9	4.673
#1	.0416	.0001	.0002	.0000	-.0009	.0000	.0015
#2	.0450	-.0003	.0001	.0002	-.0018	.0001	.0016
#3	.0416	.0000	.0001	.0001	-.0013	-.0003	.0016

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2853.1	6315.7	57201.	6719.1
Stddev	1.5	16.6	151.	39.9
%RSD	.05105	.26354	.26335	.59368
#1	2853.9	6302.3	57027.	6697.6
#2	2854.1	6310.4	57297.	6765.1
#3	2851.5	6334.3	57278.	6694.5

Zoom In Zoom Out

Sample Name: FA35770-1 Acquired: 8/2/2016 13:30:00 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0003	.0022	-.0017	.0001	.0000	.0292	-.0001	-.0003	.0003	.0002
Stddev	.0002	.0094	.0002	.0001	.000	.0006	.0001	.0000	.0001	.0002
%RSD	51.82	418.8	12.20	41.41	66.43	1.893	64.52	15.99	31.42	73.68
#1	.0002	.0131	-.0018	.0001	-.0001	.0295	-.0002	-.0003	.0002	.0003
#2	.0005	-.0036	-.0014	.0002	.0000	.0286	-.0001	-.0003	.0003	.0003
#3	.0003	-.0027	-.0018	.0001	.0000	.0296	-.0001	-.0003	.0004	.0000

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	-.0071	.0401	.0274	-.0001	-.0003	1.304	.0000	.0002	-.0002	-.0014
Stddev	.0012	.0099	.0035	.0000	.0001	.006	.000	.0011	.0009	.0009
%RSD	17.60	24.61	12.94	58.19	47.37	.4323	342.3	530.5	537.8	63.27
#1	-.0067	.0425	.0246	-.0001	-.0004	1.304	-.0001	.0015	.0003	-.0010
#2	-.0061	.0292	.0314	-.0001	-.0001	1.310	.0001	-.0002	-.0012	-.0023
#3	-.0085	.0485	.0261	.0000	-.0003	1.298	-.0001	-.0007	.0004	-.0008

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0468	-.0002	-.0001	-.0004	-.0008	-.0001	.0006
Stddev	.0014	.0000	.0001	.0000	.0003	.0001	.0000
%RSD	2.935	13.58	107.6	11.79	39.07	75.86	2.502
#1	.0484	-.0002	.0000	-.0003	-.0005	-.0002	.0007
#2	.0465	-.0003	-.0001	-.0004	-.0012	-.0001	.0006
#3	.0457	-.0002	-.0002	-.0003	-.0008	-.0001	.0006

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2854.1	6353.2	57419.	6783.5
Stddev	7.4	9.1	181.	12.7
%RSD	.26062	.14257	.31595	.18773
#1	2861.6	6360.4	57556.	6794.9
#2	2854.0	6343.0	57488.	6769.7
#3	2846.8	6356.2	57214.	6786.0

Zoom In Zoom Out

Sample Name: MP30669-D2 Acquired: 8/2/2016 13:34:11 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0000	.1202	-.0023	.0374	.0000	4.212	.0005	.0005	.0007
Stddev	.0003	.0063	.0008	.0002	.000	.005	.0000	.0001	.0003
%RSD	844.3	5.212	34.42	.4143	78.74	.1211	4.429	23.78	48.44
#1	-.0001	.1194	-.0030	.0375	-.0001	4.213	.0005	.0004	.0003
#2	.0004	.1144	-.0026	.0372	.0000	4.217	.0005	.0006	.0010
#3	-.0002	.1268	-.0014	.0375	-.0001	4.207	.0005	.0005	.0007

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0088	.5878	.2608	.3270	.0409	-.0006	F257.1	.0024	.0200
Stddev	.0002	.0028	.0396	.0272	.0001	.0001	1.3	.0000	.0006
%RSD	2.414	.4841	15.20	8.313	.1313	11.37	.5190	1.621	3.251
#1	.0085	.5883	.2571	.3574	.0409	-.0007	258.7	.0023	.0200
#2	.0089	.5847	.2231	.3052	.0410	-.0006	256.2	.0024	.0193
#3	.0089	.5904	.3021	.3184	.0409	-.0006	256.5	.0024	.0206

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0000	-.0022	.0907	.0000	.0059	.0028	-.0021	.0000	.2858
Stddev	.0012	.0008	.0006	.000	.0000	.0001	.0008	.0002	.0006
%RSD	4262.	36.29	.6946	299.1	.0805	3.289	37.10	345.1	.2013
#1	.0011	-.0013	.0909	-.0001	.0059	.0027	-.0029	.0002	.2852
#2	.0003	-.0027	.0899	-.0001	.0059	.0028	-.0016	-.0001	.2858
#3	-.0013	-.0025	.0912	.0001	.0059	.0029	-.0017	.0001	.2863

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2467.6	5939.3	52031.	6638.1
Stddev	5.1	13.4	52.	36.2
%RSD	.20627	.22520	.09990	.54485
#1	2467.9	5954.8	52091.	6679.4
#2	2462.3	5931.5	52009.	6622.4
#3	2472.5	5931.8	51994.	6612.4

Zoom In Zoom Out

Sample Name: MP30669-MB2 Acquired: 8/2/2016 13:38:28 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0031	-.0020	.0013	.0000	.0663	-.0001	-.0002	.0004
Stddev	.0004	.0189	.0004	.0001	.0000	.0006	.0000	.0001	.0002
%RSD	70.69	601.2	22.14	5.243	43.88	.9798	28.19	40.16	42.94
#1	.0005	-.0103	-.0022	.0012	.0000	.0664	-.0001	-.0001	.0005
#2	.0010	-.0050	-.0023	.0012	.0000	.0669	-.0001	-.0002	.0004
#3	.0002	.0247	-.0015	.0013	.0000	.0656	-.0001	-.0001	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	-.0034	.1602	.0259	.0000	-.0004	F138.2	.0000	.0005
Stddev	.0004	.0018	.0223	.0040	.000	.0001	3.5	.0001	.0003
%RSD	71.34	54.30	13.90	15.54	46.11	33.85	2.545	1935.	63.32
#1	.0001	-.0023	.1361	.0218	.0000	-.0002	142.2	.0000	.0005
#2	.0009	-.0023	.1800	.0298	.0000	-.0004	135.6	-.0001	.0008
#3	.0006	-.0055	.1644	.0262	.0000	-.0005	136.8	.0001	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							2.500		
Low Limit							-2.500		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0013	.0146	-.0001	.0000	-.0003	-.0019	-.0001	.0033
Stddev	.0007	.0002	.0029	.0001	.000	.0000	.0008	.0000	.0000
%RSD	425.6	16.79	20.09	73.88	98.94	17.21	41.65	14.84	1.093
#1	-.0005	-.0011	.0121	-.0002	.0000	-.0003	-.0027	-.0001	.0033
#2	.0001	-.0012	.0139	.0000	.0000	-.0002	-.0018	-.0001	.0033
#3	.0009	-.0015	.0178	-.0001	.0000	-.0003	-.0012	-.0001	.0033
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP30669-MB2 Acquired: 8/2/2016 13:38:28 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2570.2	6047.5	53549.	6639.8
Stddev	2.3	8.0	194.	71.9
%RSD	.08922	.13270	.36268	1.0826
#1	2571.3	6049.5	53327.	6558.7
#2	2571.7	6054.4	53690.	6695.6
#3	2567.5	6038.7	53629.	6665.3

Zoom In Zoom Out

Sample Name: MP30669-B2 Acquired: 8/2/2016 13:42:50 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0504	28.34	2.071	2.156	.0521	26.83	.0518	.5154	.2097
Stddev	.0002	.07	.002	.007	.0003	.04	.0001	.0006	.0007
%RSD	.4926	.2397	.0871	.3284	.4968	.1400	.1856	.1213	.3560
#1	.0502	28.40	2.072	2.154	.0522	26.85	.0519	.5153	.2103
#2	.0503	28.35	2.069	2.164	.0523	26.85	.0518	.5148	.2100
#3	.0506	28.27	2.071	2.151	.0518	26.79	.0517	.5161	.2089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2625	27.29	26.93	25.69	.5253	.5035	F162.6	.5239	.5010
Stddev	.0005	.12	.12	.13	.0010	.0005	.9	.0008	.0008
%RSD	.2047	.4462	.4603	.4989	.1826	.0911	.5728	.1471	.1515
#1	.2631	27.26	26.90	25.84	.5264	.5031	163.1	.5245	.5002
#2	.2623	27.42	27.07	25.59	.5250	.5034	163.2	.5230	.5010
#3	.2621	27.19	26.83	25.65	.5246	.5040	161.5	.5241	.5018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value							25.00		
Range							20.00%		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5173	2.098	.0123	.5174	.5049	.5060	1.997	.4906	.5223
Stddev	.0016	.009	.0004	.0008	.0022	.0002	.005	.0006	.0009
%RSD	.3146	.4055	2.973	.1553	.4365	.0327	.2526	.1232	.1762
#1	.5172	2.100	.0122	.5180	.5052	.5059	2.000	.4913	.5233
#2	.5158	2.089	.0127	.5164	.5070	.5062	1.992	.4902	.5218
#3	.5190	2.105	.0120	.5176	.5026	.5060	2.001	.4903	.5217
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP30669-B2 Acquired: 8/2/2016 13:42:50 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2455.1	6040.5	53708.	6708.7
Stddev	5.2	13.1	157.	41.7
%RSD	.21132	.21714	.29317	.62222
#1	2449.2	6025.5	53532.	6679.6
#2	2458.9	6049.6	53761.	6756.5
#3	2457.2	6046.5	53833.	6689.9

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: MP30669-MB3 Acquired: 8/2/2016 13:46:56 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0021	-.0012	.0000	.0000	.0239	-.0001	-.0002	.0000	-.0003
Stddev	.0000	.0080	.0003	.000	.000	.0022	.0000	.0000	.0005	.0001
%RSD	19.01	375.8	22.61	6204.	361.5	9.222	8.348	5.674	4441.	46.10
#1	.0003	-.0056	-.0014	-.0001	.0000	.0221	-.0001	-.0002	.0003	-.0001
#2	.0002	.0016	-.0009	.0000	.0000	.0231	-.0001	-.0002	.0003	-.0004
#3	.0002	.0104	-.0011	.0001	.0000	.0263	-.0001	-.0002	-.0005	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0090	.1089	.0187	.0000	-.0001	.1571	.0000	-.0007	.0000	.0000
Stddev	.0018	.0129	.0132	.000	.0002	.0010	.0001	.0003	.001	.0006
%RSD	19.72	11.89	70.46	67.02	151.5	.6055	803.9	45.65	2156.	3827.
#1	.0085	.1116	.0234	.0000	.0001	.1566	-.0001	-.0003	.0004	-.0006
#2	.0109	.1202	.0289	.0000	-.0001	.1565	.0001	-.0009	-.0007	.0001
#3	.0074	.0948	.0038	-.0001	-.0003	.1582	.0001	-.0007	.0002	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0027	-.0001	-.0001	-.0001	-.0001	.0000	.0004
Stddev	.0002	.0002	.0000	.0001	.0003	.0001	.0001
%RSD	5.894	293.7	40.97	92.44	451.1	350.0	12.22
#1	.0026	-.0002	-.0001	.0000	.0000	.0000	.0005
#2	.0026	.0002	-.0001	-.0001	.0002	.0000	.0004
#3	.0029	-.0002	.0000	-.0002	-.0004	.0001	.0004
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: MP30669-MB3 Acquired: 8/2/2016 13:46:56 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2874.2	6376.0	57647.	6736.2
Stddev	7.2	4.8	115.	57.6
%RSD	.25053	.07553	.19878	.85440
#1	2882.0	6379.3	57536.	6696.6
#2	2867.7	6378.3	57641.	6802.2
#3	2872.9	6370.5	57765.	6709.8

Zoom In Zoom Out

Sample Name: MP30669-B3 Acquired: 8/2/2016 13:51:10 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0493	27.80	2.007	2.128	.0515	26.25	.0513	.5136	.2071	.2599
Stddev	.0004	.05	.001	.001	.0002	.07	.0001	.0004	.0001	.0007
%RSD	.7705	.1739	.0508	.0674	.3252	.2651	.2276	.0726	.0461	.2616
#1	.0491	27.83	2.006	2.128	.0513	26.30	.0514	.5139	.2071	.2595
#2	.0491	27.74	2.008	2.126	.0516	26.17	.0511	.5132	.2072	.2596
#3	.0497	27.82	2.008	2.129	.0515	26.29	.0513	.5138	.2070	.2607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.86	26.30	25.31	.5219	.4942	26.25	.5229	.4889	.5090	2.018
Stddev	.08	.09	.09	.0001	.0008	.07	.0010	.0008	.0004	.001
%RSD	.3065	.3471	.3471	.0194	.1561	.2794	.1845	.1560	.0736	.0534
#1	26.93	26.34	25.35	.5220	.4936	26.29	.5236	.4883	.5094	2.019
#2	26.77	26.20	25.21	.5218	.4939	26.16	.5218	.4886	.5088	2.019
#3	26.89	26.37	25.37	.5219	.4951	26.29	.5234	.4898	.5087	2.017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	.5145	.4949	.4971	1.998	.4840	.5088
Stddev	.0004	.0010	.0005	.0009	.005	.0005	.0008
%RSD	14.84	.1881	.0993	.1896	.2360	.1131	.1485
#1	.0028	.5156	.4952	.4974	1.993	.4845	.5094
#2	.0026	.5137	.4943	.4960	2.002	.4839	.5080
#3	.0021	.5141	.4951	.4978	1.999	.4835	.5089
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP30669-B3 Acquired: 8/2/2016 13:51:10 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2576.2	6159.8	55044.	6712.2
Stddev	5.7	12.0	145.	78.4
%RSD	.22014	.19499	.26417	1.1681
#1	2570.8	6147.4	55201.	6656.9
#2	2575.6	6160.8	54914.	6801.9
#3	2582.1	6171.4	55016.	6677.7

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Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 13:55:07 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2438	39.03	1.971	2.013	1.954	38.93	1.986	1.988	1.979	1.967
Stddev	.0012	.05	.003	.002	.004	.07	.003	.002	.005	.003
%RSD	.4742	.1377	.1565	.1127	.1930	.1909	.1275	.1018	.2443	.1749
#1	.2435	39.07	1.972	2.013	1.958	38.99	1.983	1.985	1.974	1.966
#2	.2428	39.05	1.973	2.015	1.953	38.95	1.988	1.989	1.983	1.963
#3	.2451	38.97	1.967	2.011	1.951	38.85	1.987	1.989	1.980	1.970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.19	39.65	38.45	1.991	1.943	39.44	1.997	1.945	1.972	1.971
Stddev	.06	.07	.04	.004	.003	.06	.001	.006	.003	.003
%RSD	.1625	.1810	.1078	.1959	.1471	.1527	.0479	.3119	.1415	.1408
#1	38.13	39.71	38.41	1.987	1.940	39.51	1.996	1.939	1.974	1.974
#2	38.25	39.68	38.49	1.995	1.945	39.41	1.998	1.946	1.974	1.969
#3	38.20	39.57	38.46	1.992	1.944	39.39	1.996	1.951	1.969	1.969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.585	1.989	1.981	1.936	1.976	1.944	1.980
Stddev	.002	.002	.009	.002	.005	.004	.004
%RSD	.1438	.0925	.4625	.0908	.2589	.1817	.1828
#1	1.587	1.991	1.973	1.934	1.972	1.940	1.976
#2	1.585	1.988	1.979	1.937	1.982	1.946	1.981
#3	1.582	1.987	1.991	1.938	1.975	1.945	1.983
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 13:55:07 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2501.7	6208.6	55627.	6724.1
Stddev	13.5	20.1	316.	15.6
%RSD	.54070	.32406	.56793	.23249
#1	2517.0	6230.9	55983.	6712.4
#2	2497.1	6203.1	55380.	6741.9
#3	2491.2	6191.8	55517.	6718.1

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 13:59:08 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0023	-.0001	.0002	.0002	-.0017	.0001	.0001	.0004
Stddev	.0002	.0084	.0003	.0001	.0000	.0033	.0001	.0002	.0001
%RSD	55.07	369.9	329.0	49.20	10.14	196.5	109.3	158.4	18.84
#1	.0003	.0031	.0003	.0001	.0002	-.0045	.0002	.0003	.0003
#2	.0002	-.0065	-.0003	.0002	.0002	-.0025	.0000	-.0001	.0004
#3	.0006	.0103	-.0002	.0003	.0002	.0019	.0000	.0001	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0195	.0353	.0162	.0003	F.0016	.0519	.0001	.0003
Stddev	.0001	.0031	.0086	.0213	.0000	.0005	.0030	.0001	.0007
%RSD	28.84	15.83	24.34	131.0	7.537	29.29	5.826	63.74	230.6
#1	.0003	.0230	.0452	.0126	.0003	.0020	.0486	.0002	.0006
#2	.0005	.0184	.0305	-.0030	.0003	.0016	.0529	.0002	-.0005
#3	.0004	.0171	.0302	.0391	.0003	.0011	.0544	.0000	.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	-.0012	-.0019	.0004	.0002	.0009	.0002	.0004	.0000
Stddev	.0006	.0011	.0001	.0002	.0000	.0002	.0003	.0002	.0001
%RSD	36.63	89.99	3.239	56.14	11.13	18.54	127.3	50.54	504.8
#1	.0018	-.0006	-.0018	.0005	.0002	.0011	-.0001	.0006	.0001
#2	.0023	-.0024	-.0019	.0005	.0002	.0008	.0004	.0003	.0000
#3	.0010	-.0006	-.0019	.0001	.0002	.0007	.0004	.0002	-.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 13:59:08 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2917.1	6503.0	58560.	6762.8
Stddev	2.7	5.7	128.	41.3
%RSD	.09408	.08697	.21847	.61069
#1	2914.1	6502.6	58680.	6806.0
#2	2919.4	6508.9	58575.	6758.5
#3	2917.9	6497.6	58426.	6723.8

Zoom In Zoom Out

Sample Name: MP30670-MB1 Acquired: 8/2/2016 14:03:20 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0008	-.0011	-.0001	.0000	.0251	-.0001	-.0002	.0004	-.0002
Stddev	.0003	.0096	.0003	.0001	.000	.0018	.0001	.0001	.0002	.0002
%RSD	171.5	1198.	29.12	122.4	545.6	7.030	79.91	77.65	55.37	129.9
#1	-.0001	-.0049	-.0009	.0000	.0000	.0239	.0000	-.0001	.0002	.0001
#2	.0004	.0102	-.0008	-.0001	.0000	.0271	-.0001	-.0001	.0004	-.0003
#3	.0002	-.0077	-.0014	-.0001	.0000	.0242	-.0002	-.0003	.0006	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	.0212	.0250	-.0001	.0002	.0434	.0000	-.0004	.0013	-.0005
Stddev	.0031	.0162	.0160	.0000	.0001	.0052	.000	.0005	.0001	.0013
%RSD	176.5	76.36	64.00	1.973	55.53	12.04	110.2	115.8	8.387	251.2
#1	-.0016	.0373	.0070	-.0001	.0002	.0443	-.0001	.0001	.0014	.0010
#2	.0024	.0214	.0377	-.0001	.0001	.0482	.0000	-.0010	.0012	-.0011
#3	.0045	.0049	.0302	-.0001	.0002	.0378	-.0001	-.0004	.0013	-.0014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0000	-.0001	.0000	-.0010	.0000	.0004
Stddev	.0001	.000	.0000	.000	.0004	.0002	.0000
%RSD	14.30	113.3	33.58	1388.	39.34	734.8	6.448
#1	.0005	.0000	-.0001	.0000	-.0007	.0003	.0004
#2	.0004	-.0001	-.0002	.0000	-.0014	-.0001	.0003
#3	.0004	-.0001	-.0001	.0000	-.0008	-.0001	.0004
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: MP30670-MB1 Acquired: 8/2/2016 14:03:20 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2866.8	6365.4	57326.	6732.8
Stddev	4.3	4.3	85.	42.7
%RSD	.14867	.06757	.14818	.63393
#1	2862.3	6360.5	57379.	6755.6
#2	2870.8	6367.3	57228.	6683.6
#3	2867.3	6368.4	57372.	6759.2

Zoom In Zoom Out

Sample Name: MP30670-B1 Acquired: 8/2/2016 14:07:33 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0487	27.45	1.982	2.126	.0513	25.90	.0506	.5085	.2035	.2571
Stddev	.0002	.04	.001	.002	.0002	.03	.0000	.0004	.0005	.0004
%RSD	.3398	.1295	.0313	.1095	.3288	.1277	.0558	.0803	.2665	.1609
#1	.0485	27.43	1.982	2.127	.0515	25.86	.0507	.5081	.2031	.2566
#2	.0487	27.49	1.982	2.123	.0511	25.92	.0506	.5086	.2035	.2573
#3	.0488	27.44	1.981	2.128	.0513	25.92	.0506	.5089	.2041	.2574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.72	26.03	25.01	.5170	.4914	25.96	.5160	.4865	.5056	1.993
Stddev	.04	.02	.06	.0006	.0010	.04	.0002	.0011	.0018	.008
%RSD	.1437	.0956	.2557	.1237	.2060	.1478	.0429	.2319	.3607	.4053
#1	26.68	26.03	24.94	.5169	.4903	25.98	.5162	.4862	.5036	1.986
#2	26.72	26.05	25.05	.5165	.4915	25.91	.5160	.4856	.5072	1.990
#3	26.76	26.00	25.05	.5177	.4923	25.98	.5158	.4878	.5059	2.002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.5067	.4954	.4950	1.988	.4773	.5025
Stddev	.0003	.0006	.0006	.0013	.002	.0004	.0005
%RSD	35.22	.1100	.1300	.2630	.1164	.0907	.1084
#1	.0005	.5073	.4957	.4947	1.987	.4771	.5030
#2	.0010	.5063	.4947	.4939	1.987	.4770	.5020
#3	.0009	.5064	.4958	.4964	1.991	.4778	.5024
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP30670-B1 Acquired: 8/2/2016 14:07:33 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2573.5	6177.7	54987.	6696.2
Stddev	3.6	11.6	229.	42.8
%RSD	.13986	.18854	.41606	.63853
#1	2570.1	6164.3	54729.	6743.6
#2	2577.3	6184.1	55063.	6660.6
#3	2573.2	6184.8	55167.	6684.3

Zoom In Zoom Out

Sample Name: C46643-1T Acquired: 8/2/2016 14:11:32 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0004	.0258	-.0012	.0112	.0000	.3968	.0017	.0001	.0025
Stddev	.0001	.0010	.0007	.0001	.000	.0049	.0000	.0001	.0002
%RSD	35.23	3.761	64.20	1.057	305.8	1.227	.3176	107.6	8.110
#1	.0004	.0267	-.0004	.0111	.0000	.3920	.0017	.0001	.0024
#2	.0005	.0248	-.0011	.0113	.0000	.3966	.0017	.0001	.0028
#3	.0002	.0258	-.0019	.0111	-.0001	.4018	.0016	.0000	.0024

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0014	.0546	.2100	.1471	.0139	.0000	F152.3	.0004	.0050
Stddev	.0003	.0012	.0327	.0121	.0000	.0002	1.0	.0001	.0011
%RSD	22.27	2.187	15.56	8.245	.1890	483.1	.6499	18.67	22.91
#1	.0016	.0535	.1806	.1532	.0139	.0002	151.3	.0005	.0059
#2	.0015	.0559	.2043	.1549	.0139	.0001	152.2	.0003	.0037
#3	.0010	.0544	.2452	.1331	.0139	-.0002	153.3	.0005	.0054

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0005	-.0010	.0936	.0001	.0022	.0009	-.0008	.0001	1.194
Stddev	.0005	.0016	.0005	.0002	.0001	.0001	.0007	.0001	.001
%RSD	87.02	153.9	.5831	217.6	2.573	11.40	95.82	197.9	.1051
#1	.0008	.0002	.0936	.0001	.0021	.0008	.0000	.0002	1.193
#2	.0008	-.0005	.0930	.0003	.0022	.0010	-.0008	-.0001	1.193
#3	.0000	-.0028	.0941	-.0001	.0022	.0010	-.0014	.0000	1.195

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2550.2	6072.5	53440.	6614.8
Stddev	.7	.9	171.	61.0
%RSD	.02840	.01472	.32065	.92218
#1	2549.4	6073.4	53622.	6645.0
#2	2550.8	6072.4	53281.	6654.9
#3	2550.5	6071.6	53417.	6544.6

Zoom In Zoom Out

Sample Name: MP30670-D1 Acquired: 8/2/2016 14:15:50 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	-.0001	.0204	-.0009	.0113	.0000	.3905	.0017	-.0001	.0027
Stddev	.0006	.0055	.0006	.0001	.000	.0021	.0000	.0001	.0001
%RSD	799.7	26.74	68.13	1.248	244.7	.5258	1.978	104.8	5.272
#1	.0003	.0239	-.0007	.0113	-.0001	.3920	.0016	-.0002	.0026
#2	-.0007	.0232	-.0004	.0111	.0000	.3881	.0016	.0000	.0028
#3	.0002	.0141	-.0016	.0114	.0000	.3912	.0017	-.0002	.0026

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0010	.0405	.2363	.1405	.0141	-.0004	F150.8	.0004	.0054
Stddev	.0002	.0029	.0212	.0052	.0000	.0001	2.2	.0001	.0007
%RSD	22.10	7.078	8.960	3.694	.1846	23.44	1.460	17.70	12.64
#1	.0011	.0414	.2242	.1347	.0141	-.0005	148.3	.0003	.0047
#2	.0012	.0428	.2240	.1423	.0141	-.0004	152.4	.0004	.0054
#3	.0008	.0373	.2608	.1446	.0141	-.0003	151.8	.0004	.0061

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0003	-.0020	.0985	.0001	.0022	.0006	-.0010	.0000	1.216
Stddev	.0007	.0018	.0025	.0003	.0001	.0000	.0010	.0002	.002
%RSD	202.4	89.46	2.491	408.1	3.805	7.798	100.0	525.1	.1732
#1	.0004	-.0036	.0972	.0001	.0022	.0006	-.0006	-.0002	1.215
#2	-.0004	-.0022	.1014	.0003	.0021	.0006	-.0021	.0002	1.215
#3	.0010	-.0001	.0970	-.0002	.0023	.0007	-.0003	.0002	1.219

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2551.2	6068.7	53236.	6677.6
Stddev	8.2	5.8	123.	30.1
%RSD	.32079	.09608	.23188	.45044
#1	2557.8	6067.7	53136.	6682.6
#2	2553.8	6075.0	53374.	6704.8
#3	2542.1	6063.5	53199.	6645.3

Zoom In Zoom Out

Sample Name: MP30670-SD1 Acquired: 8/2/2016 14:20:07 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0018	.0256	-.0022	.0100	-.0001	.3715	.0012	-.0007	.0014	.0012
Stddev	.0015	.0400	.0011	.0005	.0002	.0133	.0001	.0002	.0005	.0011
%RSD	81.19	156.1	49.55	4.821	181.2	3.587	10.82	28.45	34.75	87.96
#1	.0012	.0697	-.0011	.0097	-.0002	.3660	.0013	-.0006	.0019	.0015
#2	.0035	.0155	-.0021	.0097	-.0002	.3866	.0011	-.0010	.0010	.0021
#3	.0008	-.0083	-.0033	.0105	.0001	.3617	.0011	-.0006	.0013	.0000

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0140	.4522	.1263	.0134	-.0021	153.4	.0003	.0017	-.0015	-.0006
Stddev	.0066	.0710	.1198	.0002	.0005	.4	.0009	.0012	.0052	.0027
%RSD	47.45	15.70	94.84	1.509	25.43	.2432	287.2	71.89	339.1	478.3
#1	.0147	.4369	.0188	.0134	-.0025	153.8	.0012	.0023	-.0043	-.0034
#2	.0070	.3902	.2554	.0131	-.0015	153.0	.0005	.0025	-.0048	-.0003
#3	.0202	.5296	.1046	.0135	-.0021	153.4	-.0007	.0003	.0045	.0020

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0828	.0009	.0018	-.0017	-.0012	-.0004	1.213
Stddev	.0085	.0011	.0003	.0003	.0012	.0002	.001
%RSD	10.25	132.4	17.63	20.98	101.8	46.22	.0448
#1	.0913	-.0002	.0014	-.0013	-.0016	-.0002	1.213
#2	.0743	.0007	.0020	-.0019	.0002	-.0004	1.213
#3	.0828	.0021	.0019	-.0018	-.0022	-.0005	1.214

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2780.9	6403.2	56507.	6753.9
Stddev	5.7	10.9	296.	59.1
%RSD	.20391	.17057	.52344	.87503
#1	2787.4	6415.3	56691.	6736.5
#2	2778.7	6400.1	56665.	6705.5
#3	2776.7	6394.2	56166.	6819.8

Zoom In Zoom Out

Sample Name: MP30670-S1 Acquired: 8/2/2016 14:24:18 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0501	27.70	2.029	2.154	.0521	26.52	.0526	.5067	.2075
Stddev	.0004	.03	.005	.005	.0002	.03	.0002	.0012	.0005
%RSD	.8183	.0916	.2309	.2285	.3497	.0974	.3363	.2335	.2607
#1	.0503	27.68	2.027	2.150	.0523	26.49	.0525	.5065	.2072
#2	.0496	27.73	2.026	2.153	.0522	26.53	.0526	.5057	.2081
#3	.0503	27.70	2.034	2.160	.0519	26.54	.0528	.5080	.2071

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2616	27.35	26.79	25.33	.5365	.4933	F175.6	.5127	.5061
Stddev	.0001	.07	.06	.06	.0003	.0006	4.1	.0004	.0009
%RSD	.0450	.2544	.2175	.2182	.0473	.1236	2.317	.0824	.1824
#1	.2617	27.32	26.73	25.29	.5362	.4926	178.2	.5128	.5052
#2	.2615	27.30	26.80	25.31	.5366	.4935	177.6	.5122	.5059
#3	.2616	27.43	26.85	25.40	.5367	.4938	170.9	.5130	.5071

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.5102	2.055	.0943	.4998	.5058	.5056	1.999	.4838	1.674
Stddev	.0018	.003	.0019	.0005	.0007	.0007	.005	.0014	.004
%RSD	.3586	.1544	1.977	.1060	.1457	.1457	.2650	.2822	.2143
#1	.5082	2.053	.0951	.4995	.5049	.5049	1.993	.4843	1.674
#2	.5107	2.059	.0957	.4996	.5062	.5056	2.000	.4848	1.671
#3	.5118	2.054	.0922	.5005	.5062	.5064	2.003	.4822	1.678

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2434.3	6087.9	53281.	6619.6
Stddev	2.8	11.0	198.	43.9
%RSD	.11402	.18068	.37080	.66308
#1	2436.9	6079.3	53489.	6588.5
#2	2434.6	6100.3	53097.	6600.6
#3	2431.4	6084.1	53256.	6669.8

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: MP30670-S2 Acquired: 8/2/2016 14:28:26 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0495	27.46	2.008	2.125	.0517	26.24	.0520	.5015	.2055
Stddev	.0003	.07	.002	.007	.0003	.08	.0000	.0002	.0007
%RSD	.5923	.2668	.1115	.3348	.5817	.2938	.0675	.0371	.3329
#1	.0492	27.40	2.006	2.118	.0514	26.15	.0520	.5017	.2054
#2	.0494	27.54	2.010	2.132	.0520	26.30	.0520	.5016	.2048
#3	.0498	27.43	2.007	2.124	.0517	26.26	.0521	.5013	.2062

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2587	26.94	26.43	25.16	.5306	.4876	F174.6	.5074	.4985
Stddev	.0010	.14	.06	.06	.0008	.0003	2.1	.0003	.0015
%RSD	.3890	.5202	.2175	.2498	.1479	.0643	1.190	.0605	.2920
#1	.2595	26.78	26.37	25.08	.5300	.4875	176.0	.5076	.4987
#2	.2591	27.05	26.48	25.20	.5302	.4880	175.6	.5076	.4970
#3	.2576	26.99	26.43	25.19	.5315	.4875	172.2	.5071	.4998

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.5033	2.031	.0978	.4962	.4989	.4995	1.974	.4794	1.649
Stddev	.0014	.003	.0060	.0002	.0017	.0005	.004	.0003	.001
%RSD	.2805	.1471	6.158	.0501	.3470	.1019	.1762	.0617	.0717
#1	.5019	2.029	.0917	.4960	.4971	.4999	1.971	.4790	1.650
#2	.5035	2.030	.1038	.4964	.5005	.4989	1.973	.4796	1.650
#3	.5047	2.035	.0978	.4964	.4991	.4998	1.978	.4795	1.648

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2438.6	6084.5	53228.	6600.5
Stddev	3.2	10.6	264.	20.2
%RSD	.13239	.17421	.49645	.30598
#1	2435.1	6073.6	53418.	6619.2
#2	2441.4	6085.1	53339.	6603.3
#3	2439.4	6094.7	52926.	6579.1

Zoom In Zoom Out

Sample Name: C46643-3T Acquired: 8/2/2016 14:32:33 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0001	.0112	-.0010	.0041	.0000	.3370	-.0001	.0000	.0006
Stddev	.0003	.0021	.0004	.0002	.000	.0026	.0000	.000	.0002
%RSD	198.4	18.89	43.06	4.394	204.3	.7833	14.76	173.4	34.07
#1	.0003	.0137	-.0010	.0039	.0000	.3358	-.0001	-.0001	.0005
#2	.0003	.0102	-.0014	.0040	-.0001	.3401	-.0001	.0000	.0004
#3	-.0002	.0098	-.0006	.0042	.0000	.3352	-.0002	.0000	.0008

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0010	.0102	.2419	.1379	.0009	-.0002	F155.2	.0000	-.0005
Stddev	.0002	.0013	.0129	.0081	.0000	.0000	1.7	.0001	.0007
%RSD	24.50	12.85	5.340	5.870	1.521	9.864	1.104	353.8	150.1
#1	.0009	.0093	.2271	.1407	.0009	-.0002	154.0	.0002	.0003
#2	.0008	.0117	.2512	.1443	.0009	-.0003	157.1	.0000	-.0010
#3	.0013	.0096	.2473	.1288	.0009	-.0002	154.4	-.0001	-.0007

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0001	-.0004	.0643	.0002	.0041	.0000	-.0011	.0003	.0141
Stddev	.0004	.0022	.0003	.0001	.0001	.000	.0005	.0002	.0001
%RSD	470.1	615.3	.4202	31.28	1.518	128.2	47.95	82.48	1.045
#1	-.0003	-.0022	.0646	.0002	.0041	.0000	-.0017	.0001	.0142
#2	.0001	.0021	.0642	.0002	.0041	.0000	-.0006	.0005	.0140
#3	.0004	-.0010	.0640	.0003	.0042	.0000	-.0011	.0002	.0139

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2538.5	6063.6	52974.	6597.1
Stddev	2.8	2.5	272.	50.1
%RSD	.11111	.04119	.51395	.75930
#1	2536.9	6061.3	52756.	6633.0
#2	2536.9	6063.2	52887.	6539.9
#3	2541.8	6066.2	53279.	6618.5

Zoom In Zoom Out

Sample Name: C46643-5T Acquired: 8/2/2016 14:36:52 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0001	.4750	-.0010	.0203	-.0001	1.986	-.0001	.0002	.0049
Stddev	.0004	.0054	.0001	.0002	.0000	.001	.0000	.0001	.0002
%RSD	266.2	1.137	5.484	.9929	65.72	.0245	50.03	51.52	4.523
#1	-.0002	.4811	-.0011	.0204	.0000	1.985	.0000	.0001	.0048
#2	.0005	.4708	-.0010	.0205	-.0001	1.986	-.0001	.0003	.0051
#3	.0000	.4731	-.0010	.0201	-.0001	1.986	-.0001	.0002	.0047

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0064	2.198	.3944	.4296	.0348	-.0003	F149.4	.0007	.0013
Stddev	.0000	.007	.0143	.0074	.0001	.0001	1.7	.0001	.0003
%RSD	.5722	.3428	3.637	1.712	.1647	20.49	1.159	17.83	20.25
#1	.0064	2.200	.3864	.4221	.0349	-.0003	150.6	.0008	.0010
#2	.0065	2.189	.4110	.4368	.0348	-.0004	150.1	.0006	.0014
#3	.0064	2.203	.3859	.4298	.0348	-.0003	147.4	.0007	.0015

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0002	-.0009	.2066	.0001	.0129	.1570	-.0012	.0046	.0579
Stddev	.0007	.0022	.0016	.0000	.0001	.0013	.0004	.0002	.0001
%RSD	308.3	262.6	.7860	12.05	1.020	.8253	29.14	4.901	.0989
#1	-.0010	.0017	.2084	.0001	.0127	.1575	-.0014	.0048	.0579
#2	.0000	-.0020	.2064	.0001	.0130	.1556	-.0015	.0044	.0579
#3	.0003	-.0023	.2052	.0001	.0129	.1581	-.0008	.0046	.0578

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2538.1	6092.6	53168.	6602.9
Stddev	4.8	15.0	257.	11.4
%RSD	.19101	.24600	.48285	.17281
#1	2543.5	6109.1	53087.	6607.3
#2	2536.7	6088.9	52962.	6611.4
#3	2534.2	6079.9	53456.	6589.9

Zoom In Zoom Out

Sample Name: C46643-6T Acquired: 8/2/2016 14:41:09 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0004	.0106	-.0009	.0061	.0000	.2196	.0027	-.0002	.0029
Stddev	.0006	.0089	.0009	.0001	.0000	.0023	.0000	.0001	.0002
%RSD	143.4	84.18	111.6	1.491	109.6	1.028	1.865	75.99	5.877
#1	.0008	.0006	.0002	.0062	.0000	.2177	.0026	-.0002	.0029
#2	-.0002	.0134	-.0015	.0060	.0000	.2190	.0027	.0000	.0030
#3	.0006	.0178	-.0012	.0060	.0001	.2221	.0027	-.0002	.0027

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0008	.0010	.2451	.1120	.0008	-.0004	F157.8	.0000	.0012
Stddev	.0001	.0027	.0293	.0137	.0000	.0000	.7	.000	.0003
%RSD	8.929	276.2	11.95	12.24	2.784	10.85	.4631	760.0	25.07
#1	.0009	.0038	.2521	.1049	.0007	-.0003	158.5	-.0001	.0015
#2	.0008	-.0015	.2129	.1278	.0008	-.0004	157.9	.0001	.0011
#3	.0007	.0006	.2702	.1034	.0008	-.0004	157.0	.0000	.0009

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0004	-.0010	.1071	.0001	.0028	-.0001	-.0007	.0004	1.702
Stddev	.0005	.0011	.0034	.0000	.0001	.0002	.0007	.0002	.004
%RSD	116.5	107.3	3.213	32.23	2.598	124.2	88.97	56.10	.2308
#1	.0007	-.0023	.1036	.0001	.0029	-.0001	-.0003	.0002	1.699
#2	.0006	-.0007	.1073	.0001	.0027	.0000	-.0005	.0005	1.702
#3	-.0001	-.0001	.1105	.0001	.0028	-.0003	-.0015	.0006	1.707

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2536.8	6057.6	53099.	6582.6
Stddev	7.2	14.7	118.	7.4
%RSD	.28302	.24193	.22279	.11276
#1	2538.2	6071.6	53001.	6584.3
#2	2543.3	6058.7	53230.	6574.4
#3	2529.1	6042.4	53065.	6589.0

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 14:50:11 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2446	38.96	1.946	2.032	1.975	38.77	1.983	1.982	1.969	1.974
Stddev	.0006	.08	.002	.001	.005	.02	.002	.003	.003	.005
%RSD	.2539	.2024	.1054	.0294	.2610	.0541	.0832	.1254	.1741	.2400
#1	.2453	38.97	1.944	2.032	1.975	38.75	1.982	1.980	1.965	1.979
#2	.2441	39.04	1.946	2.033	1.980	38.79	1.985	1.985	1.970	1.971
#3	.2444	38.88	1.948	2.032	1.969	38.78	1.982	1.981	1.972	1.971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.83	40.06	38.48	2.010	1.935	39.22	1.979	1.952	1.956	1.948
Stddev	.03	.03	.00	.004	.004	.05	.002	.002	.003	.004
%RSD	.0730	.0828	.0047	.1806	.1863	.1337	.1051	.0758	.1346	.2013
#1	38.83	40.06	38.48	2.006	1.931	39.25	1.977	1.954	1.955	1.945
#2	38.86	40.03	38.48	2.012	1.936	39.24	1.981	1.952	1.959	1.952
#3	38.80	40.10	38.48	2.012	1.938	39.16	1.978	1.951	1.954	1.946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.566	1.955	2.039	1.963	1.982	1.941	1.975
Stddev	.002	.002	.026	.001	.002	.003	.003
%RSD	.1220	.1183	1.272	.0675	.0807	.1335	.1668
#1	1.565	1.956	2.022	1.961	1.982	1.939	1.974
#2	1.568	1.957	2.026	1.963	1.980	1.944	1.978
#3	1.565	1.953	2.069	1.964	1.983	1.942	1.972
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 14:50:11 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2498.0	6251.7	55074.	6664.7
Stddev	2.7	5.4	295.	44.8
%RSD	.10891	.08659	.53602	.67164
#1	2496.4	6253.9	55371.	6655.3
#2	2501.1	6245.5	54780.	6713.4
#3	2496.4	6255.6	55071.	6625.3

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 14:56:58 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0045	-.0002	.0003	.0004	.0062	.0002	.0002	.0006	.0003
Stddev	.0002	.0023	.0005	.0002	.0002	.0065	.0001	.0001	.0003	.0001
%RSD	85.17	50.25	204.3	53.30	42.77	104.7	50.32	68.74	54.91	37.44
#1	.0005	.0046	.0003	.0002	.0002	-.0013	.0004	.0003	.0003	.0004
#2	.0002	.0068	-.0004	.0002	.0005	.0103	.0001	.0001	.0009	.0002
#3	.0001	.0022	-.0006	.0005	.0006	.0094	.0002	.0002	.0006	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0143	.0694	.0169	.0006	.0004	.0796	.0003	.0000	.0018	-.0006
Stddev	.0030	.0096	.0265	.0001	.0002	.0111	.0002	.001	.0006	.0013
%RSD	20.90	13.85	156.8	16.05	49.15	13.91	73.07	9105.	30.61	220.2
#1	.0116	.0795	.0009	.0007	.0006	.0671	.0005	-.0003	.0017	-.0009
#2	.0137	.0684	.0475	.0006	.0003	.0881	.0001	.0007	.0024	.0008
#3	.0175	.0604	.0024	.0005	.0002	.0835	.0002	-.0004	.0013	-.0017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0018	.0003	.0006	.0005	-.0001	.0007	.0002
Stddev	.0003	.0003	.0002	.0001	.0002	.0002	.0001
%RSD	17.10	89.59	28.40	24.14	195.4	26.63	59.09
#1	-.0019	.0005	.0004	.0007	-.0001	.0008	.0004
#2	-.0015	.0004	.0006	.0004	.0001	.0008	.0002
#3	-.0021	.0000	.0007	.0004	-.0003	.0005	.0001
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 14:56:58 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2899.0	6515.3	57378.	6675.3
Stddev	1.3	11.5	129.	52.1
%RSD	.04340	.17663	.22441	.77996
#1	2898.2	6507.0	57385.	6712.0
#2	2900.4	6510.5	57246.	6615.7
#3	2898.3	6528.4	57503.	6698.1

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: C46643-7T Acquired: 8/2/2016 15:01:09 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0000	.0175	-.0011	.0152	.0000	.4357	-.0001	-.0001	.0004
Stddev	.000	.0093	.0005	.0002	.0000	.0041	.0000	.0001	.0002
%RSD	4664.	53.18	50.00	1.186	1763.	.9393	47.79	113.5	39.21
#1	.0003	.0257	-.0006	.0151	.0000	.4324	.0000	-.0002	.0006
#2	-.0001	.0074	-.0009	.0154	.0000	.4403	-.0001	.0000	.0004
#3	-.0002	.0194	-.0017	.0152	.0000	.4344	-.0001	-.0001	.0003

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0007	-.0024	.2308	.1781	.0007	-.0002	F149.3	.0000	.0008
Stddev	.0002	.0029	.0227	.0086	.0000	.0001	4.7	.000	.0006
%RSD	20.39	120.9	9.823	4.826	3.356	45.65	3.129	3556.	75.06
#1	.0009	-.0011	.2556	.1729	.0007	-.0002	148.7	.0002	.0007
#2	.0006	-.0004	.2111	.1880	.0007	-.0003	154.3	.0001	.0003
#3	.0007	-.0058	.2257	.1734	.0007	-.0001	145.0	-.0003	.0015

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0004	-.0009	.1109	-.0001	.0036	-.0001	-.0023	.0000	.2112
Stddev	.0002	.0008	.0078	.0001	.0001	.0002	.0007	.0000	.0008
%RSD	56.29	89.63	7.070	111.9	1.598	146.1	28.30	66.09	.3997
#1	.0006	-.0006	.1081	-.0001	.0037	.0001	-.0016	.0000	.2104
#2	.0001	-.0018	.1198	-.0003	.0036	-.0002	-.0024	.0000	.2120
#3	.0006	-.0003	.1049	.0000	.0037	-.0002	-.0029	.0000	.2113

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2545.7	6092.3	53045.	6614.0
Stddev	6.3	10.8	242.	87.4
%RSD	.24591	.17669	.45600	1.3219
#1	2552.9	6102.0	52774.	6638.2
#2	2541.8	6080.7	53240.	6517.0
#3	2542.4	6094.1	53121.	6686.8

Zoom In Zoom Out

Sample Name: C46643-8T Acquired: 8/2/2016 15:05:27 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0002	.0001	-.0014	.0073	.0000	.2951	.0001	.0001	.0015
Stddev	.0003	.0014	.0004	.0003	.000	.0010	.0000	.0001	.0004
%RSD	107.3	943.6	28.48	3.605	224.7	.3422	8.767	61.64	27.35
#1	.0002	.0009	-.0016	.0072	.0000	.2946	.0001	.0001	.0011
#2	.0000	.0011	-.0009	.0076	.0000	.2963	.0001	.0001	.0018
#3	.0005	-.0015	-.0016	.0071	-.0001	.2945	.0001	.0000	.0018

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0009	.0126	.2270	.1254	.0014	-.0003	F172.5	.0002	.0007
Stddev	.0001	.0008	.0158	.0079	.0000	.0001	3.0	.0002	.0002
%RSD	12.16	6.632	6.946	6.286	1.304	18.60	1.766	71.41	29.55
#1	.0011	.0116	.2131	.1271	.0014	-.0003	169.4	.0001	.0008
#2	.0008	.0133	.2238	.1323	.0014	-.0002	175.4	.0004	.0008
#3	.0009	.0128	.2441	.1168	.0014	-.0004	172.8	.0002	.0005

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0008	-.0015	.0625	-.0001	.0030	-.0002	-.0016	.0001	.9424
Stddev	.0004	.0006	.0029	.0001	.0001	.0000	.0005	.0002	.0009
%RSD	45.76	38.75	4.580	104.7	3.776	22.65	30.23	147.9	.0913
#1	.0004	-.0018	.0599	.0000	.0030	-.0001	-.0015	.0003	.9419
#2	.0011	-.0018	.0621	.0000	.0031	-.0002	-.0022	-.0001	.9434
#3	.0009	-.0008	.0656	-.0002	.0029	-.0002	-.0013	.0001	.9418

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2532.1	6062.8	53050.	6640.4
Stddev	5.0	6.7	201.	69.3
%RSD	.19785	.11066	.37862	1.0436
#1	2534.1	6069.8	53022.	6719.9
#2	2535.7	6062.1	52865.	6608.8
#3	2526.3	6056.4	53263.	6592.6

Zoom In Zoom Out

Sample Name: C46643-9T Acquired: 8/2/2016 15:09:46 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0003	.0068	-.0012	.0036	-.0001	.2328	.0008	.0002	.0038
Stddev	.0002	.0072	.0002	.0002	.0000	.0006	.0000	.0000	.0003
%RSD	97.43	105.4	18.29	5.389	46.00	.2608	2.307	26.95	6.670
#1	.0003	.0021	-.0014	.0038	.0000	.2331	.0008	.0001	.0040
#2	.0005	.0150	-.0013	.0036	-.0001	.2332	.0008	.0002	.0035
#3	.0000	.0032	-.0010	.0034	-.0001	.2321	.0008	.0001	.0039

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0009	.0048	.2290	.1380	.0011	-.0003	F166.8	.0000	.0012
Stddev	.0002	.0027	.0105	.0237	.0000	.0001	1.4	.0001	.0009
%RSD	24.26	54.99	4.570	17.17	2.108	17.39	.8175	263.7	73.85
#1	.0007	.0066	.2204	.1420	.0011	-.0004	165.9	.0001	.0011
#2	.0009	.0018	.2260	.1595	.0011	-.0003	166.1	-.0001	.0004
#3	.0011	.0061	.2407	.1126	.0011	-.0003	168.4	.0001	.0021

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0003	-.0011	.1129	-.0002	.0036	-.0003	-.0019	.0000	3.257
Stddev	.0008	.0019	.0015	.0001	.0000	.0001	.0008	.0002	.004
%RSD	311.7	178.9	1.350	25.48	1.363	26.60	39.19	1717.	.1336
#1	.0004	-.0033	.1113	-.0002	.0036	-.0004	-.0027	.0002	3.254
#2	-.0001	.0004	.1129	-.0002	.0035	-.0004	-.0020	-.0001	3.254
#3	-.0011	-.0004	.1143	-.0003	.0036	-.0002	-.0012	-.0001	3.262

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2531.8	6044.9	53091.	6614.8
Stddev	5.0	8.8	399.	42.9
%RSD	.19694	.14498	.75170	.64869
#1	2534.9	6050.2	52894.	6596.4
#2	2534.4	6049.7	53550.	6663.9
#3	2526.0	6034.8	52828.	6584.2

Zoom In Zoom Out

Sample Name: C46643-10T Acquired: 8/2/2016 15:14:05 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	-.0001	.0123	-.0009	.0144	-.0001	.3233	.0000	-.0001	.0007
Stddev	.0004	.0088	.0006	.0002	.0000	.0021	.0000	.0000	.0002
%RSD	353.7	71.43	70.50	1.378	68.59	.6499	120.0	32.85	24.05
#1	-.0002	.0022	-.0014	.0143	-.0001	.3242	.0001	-.0001	.0005
#2	-.0005	.0181	-.0002	.0147	.0000	.3248	.0000	-.0001	.0008
#3	.0003	.0166	-.0011	.0143	.0000	.3209	.0000	-.0002	.0008

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0010	.0538	.2932	.1453	.0034	-.0003	F169.1	.0003	-.0001
Stddev	.0001	.0031	.0204	.0130	.0000	.0001	.4	.0001	.0003
%RSD	13.44	5.688	6.965	8.922	.7284	18.85	.2580	21.80	607.4
#1	.0011	.0506	.2714	.1331	.0034	-.0004	168.6	.0003	-.0003
#2	.0009	.0567	.3118	.1439	.0035	-.0003	169.4	.0003	.0003
#3	.0008	.0541	.2966	.1589	.0034	-.0004	169.2	.0004	-.0002

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0002	-.0018	.0930	.0002	.0025	-.0003	-.0012	.0001	.3147
Stddev	.0011	.0015	.0040	.0003	.0001	.0001	.0009	.0002	.0002
%RSD	562.3	81.02	4.344	167.8	3.385	21.90	71.39	119.5	.0687
#1	.0013	-.0022	.0914	.0004	.0024	-.0003	-.0009	.0000	.3149
#2	.0000	-.0030	.0976	.0002	.0026	-.0003	-.0006	.0003	.3146
#3	-.0008	-.0002	.0901	-.0001	.0025	-.0002	-.0023	.0001	.3145

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2526.6	6063.3	52902.	6543.2
Stddev	2.0	9.6	44.	8.3
%RSD	.07918	.15843	.08311	.12647
#1	2524.5	6052.2	52952.	6536.4
#2	2526.6	6069.2	52884.	6552.4
#3	2528.5	6068.4	52869.	6540.8

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: C46643-11T Acquired: 8/2/2016 15:18:24 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0003	.0076	-.0014	.0160	-.0001	.3056	.0002	.0002	.0023
Stddev	.0002	.0112	.0001	.0003	.0001	.0063	.0000	.0001	.0001
%RSD	73.56	147.8	9.569	1.657	142.4	2.074	3.290	84.13	2.866
#1	.0005	-.0019	-.0013	.0162	.0000	.3056	.0002	.0002	.0024
#2	.0003	.0047	-.0015	.0157	.0000	.2993	.0002	.0003	.0023
#3	.0001	.0200	-.0014	.0161	-.0001	.3120	.0002	.0000	.0023

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0004	.0053	.3106	.1672	.0009	-.0004	F166.3	.0000	.0001
Stddev	.0003	.0018	.0162	.0100	.0000	.0001	.4	.000	.0005
%RSD	62.06	33.41	5.203	6.012	2.519	22.84	.2232	685.4	520.7
#1	.0002	.0044	.2924	.1578	.0009	-.0004	166.5	.0001	.0007
#2	.0007	.0041	.3162	.1660	.0009	-.0003	166.5	.0000	-.0004
#3	.0004	.0073	.3233	.1778	.0008	-.0004	165.8	-.0001	.0000

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0002	-.0013	.1362	-.0002	.0027	-.0004	-.0013	.0000	1.248
Stddev	.0009	.0013	.0032	.0002	.0001	.0001	.0006	.000	.000
%RSD	387.3	101.0	2.347	87.75	3.557	28.54	43.89	415.7	.0165
#1	-.0005	-.0011	.1334	-.0005	.0026	-.0003	-.0014	.0000	1.248
#2	.0000	-.0001	.1397	-.0002	.0026	-.0005	-.0018	-.0003	1.249
#3	.0013	-.0026	.1356	-.0001	.0028	-.0005	-.0007	.0001	1.248

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2532.9	6103.7	52623.	6546.5
Stddev	3.2	6.0	146.	6.5
%RSD	.12655	.09760	.27666	.09927
#1	2532.7	6104.8	52759.	6541.6
#2	2536.2	6097.3	52640.	6543.9
#3	2529.8	6109.1	52469.	6553.9

Zoom In Zoom Out

Sample Name: C46643-12T Acquired: 8/2/2016 15:22:41 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0002	.0136	-.0013	.0100	-.0001	.3837	.0006	-.0001	.0016
Stddev	.0002	.0051	.0009	.0000	.0000	.0007	.0000	.0001	.0003
%RSD	79.18	37.45	69.48	.1092	61.68	.1869	5.020	57.98	17.94
#1	.0004	.0127	-.0008	.0100	.0000	.3841	.0006	-.0002	.0013
#2	.0001	.0190	-.0008	.0099	.0000	.3828	.0006	-.0001	.0018
#3	.0001	.0090	-.0024	.0100	-.0001	.3841	.0006	-.0001	.0017

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0003	.0127	.2984	.1758	.0018	-.0003	F164.6	.0002	.0005
Stddev	.0003	.0023	.0206	.0237	.0000	.0001	1.9	.0001	.0007
%RSD	78.00	18.21	6.917	13.47	.9604	38.24	1.133	57.74	139.0
#1	.0006	.0153	.2924	.1755	.0018	-.0002	163.0	.0001	.0008
#2	.0003	.0117	.3213	.1995	.0018	-.0004	166.6	.0003	-.0003
#3	.0001	.0110	.2814	.1522	.0018	-.0002	164.2	.0001	.0010

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0004	-.0012	.2053	.0000	.0037	-.0003	-.0020	.0000	2.720
Stddev	.0005	.0008	.0055	.0002	.0000	.0000	.0009	.000	.004
%RSD	130.8	62.61	2.673	496.4	1.255	14.87	46.55	1870.	.1568
#1	.0002	-.0013	.2115	.0001	.0037	-.0003	-.0019	.0001	2.718
#2	.0000	-.0019	.2010	-.0002	.0036	-.0003	-.0011	.0000	2.717
#3	.0009	-.0004	.2035	.0002	.0037	-.0004	-.0029	-.0002	2.725

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2531.0	6113.0	52852.	6611.8
Stddev	3.0	8.5	108.	22.1
%RSD	.11854	.13972	.20514	.33462
#1	2532.9	6111.8	52728.	6601.8
#2	2532.5	6122.1	52900.	6596.5
#3	2527.5	6105.2	52929.	6637.2

Zoom In Zoom Out

Sample Name: C46643-13T Acquired: 8/2/2016 15:26:58 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0000	.0133	-.0011	.0077	-.0001	.3476	.0004	.0002	.0025
Stddev	.0002	.0052	.0004	.0001	.0000	.0016	.0000	.0000	.0002
%RSD	317.9	39.37	41.62	1.501	49.65	.4617	4.946	7.299	7.450
#1	.0002	.0190	-.0006	.0076	-.0001	.3460	.0004	.0002	.0026
#2	.0000	.0123	-.0015	.0078	.0000	.3475	.0004	.0002	.0025
#3	-.0001	.0087	-.0011	.0076	-.0001	.3492	.0004	.0002	.0023

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0002	.0000	.3239	.1405	.0008	-.0004	F163.4	.0004	-.0002
Stddev	.0002	.003	.0075	.0062	.0000	.0000	5.4	.0001	.0011
%RSD	122.1	24980.	2.308	4.397	2.503	12.77	3.292	26.98	460.0
#1	.0003	-.0035	.3212	.1348	.0009	-.0004	166.2	.0004	-.0006
#2	.0003	.0020	.3182	.1470	.0008	-.0004	157.2	.0005	-.0011
#3	-.0001	.0015	.3324	.1396	.0008	-.0003	166.7	.0003	.0010

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0006	-.0019	.1441	-.0001	.0031	-.0003	-.0022	.0000	1.793
Stddev	.0006	.0018	.0075	.0001	.0001	.0000	.0002	.000	.001
%RSD	110.4	96.30	5.226	148.4	3.589	14.31	7.755	407.8	.0357
#1	-.0003	-.0035	.1376	-.0001	.0030	-.0003	-.0023	.0001	1.793
#2	-.0013	-.0021	.1524	-.0001	.0031	-.0003	-.0023	.0000	1.793
#3	-.0001	.0000	.1422	.0000	.0032	-.0003	-.0020	-.0002	1.792

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2533.3	6121.8	52797.	6595.1
Stddev	3.6	3.4	315.	79.0
%RSD	.14154	.05480	.59752	1.1986
#1	2530.1	6118.1	52755.	6583.8
#2	2537.2	6124.7	52505.	6679.1
#3	2532.6	6122.6	53132.	6522.2

Zoom In Zoom Out

Sample Name: C46643-14T Acquired: 8/2/2016 15:31:16 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0000	.0017	-.0011	.0176	-.0001	.6904	-.0001	-.0001	.0011
Stddev	.0003	.0075	.0010	.0001	.0001	.0058	.0001	.0000	.0001
%RSD	2337.	433.1	84.58	.7684	87.51	.8362	45.99	23.71	6.127
#1	-.0001	.0072	-.0018	.0175	-.0001	.6886	-.0001	-.0001	.0011
#2	-.0002	.0047	-.0016	.0175	-.0001	.6968	-.0002	-.0001	.0011
#3	.0003	-.0068	.0000	.0177	.0000	.6857	-.0001	-.0001	.0012

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0007	-.0055	.3086	.2550	.0008	-.0003	F169.1	-.0001	.0004
Stddev	.0003	.0019	.0169	.0035	.0000	.0001	2.1	.0001	.0006
%RSD	37.62	33.94	5.466	1.386	1.786	20.61	1.261	216.3	156.1
#1	.0005	-.0034	.3153	.2553	.0008	-.0003	168.4	.0000	-.0002
#2	.0010	-.0071	.2894	.2584	.0008	-.0003	171.5	-.0002	.0009
#3	.0006	-.0061	.3210	.2514	.0008	-.0004	167.4	.0000	.0004

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0002	-.0020	.1185	-.0001	.0044	-.0003	-.0026	.0000	.0300
Stddev	.0008	.0009	.0006	.0001	.0001	.0001	.0007	.0001	.0001
%RSD	333.7	44.17	.4777	68.24	2.415	18.25	27.86	330.3	.3044
#1	.0012	-.0010	.1190	-.0001	.0043	-.0004	-.0020	.0002	.0300
#2	.0000	-.0027	.1179	-.0002	.0045	-.0004	-.0024	-.0001	.0299
#3	-.0004	-.0024	.1186	-.0001	.0045	-.0003	-.0034	.0001	.0300

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2525.9	6114.4	52387.	6545.4
Stddev	6.0	13.1	148.	35.3
%RSD	.23831	.21488	.28270	.53955
#1	2529.4	6117.8	52558.	6538.8
#2	2529.3	6125.5	52314.	6513.9
#3	2518.9	6099.9	52290.	6583.6

Zoom In Zoom Out

Sample Name: C46643-15T Acquired: 8/2/2016 15:35:35 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0002	.0047	-.0011	.0116	-.0001	.2595	.0033	.0005	.0048
Stddev	.0002	.0031	.0008	.0001	.0000	.0018	.0000	.0001	.0001
%RSD	92.28	67.18	69.39	.7524	11.70	.6812	.7583	20.50	2.862
#1	.0001	.0011	-.0012	.0116	-.0001	.2596	.0033	.0004	.0047
#2	.0004	.0070	-.0003	.0115	-.0001	.2577	.0033	.0005	.0048
#3	.0001	.0059	-.0019	.0116	-.0001	.2612	.0033	.0006	.0050

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0004	.0108	.2767	.1962	.0010	-.0004	F165.7	-.0001	-.0005
Stddev	.0004	.0019	.0351	.0172	.0000	.0001	1.2	.0001	.0003
%RSD	96.00	17.55	12.68	8.773	4.041	32.41	.6968	140.5	66.01
#1	.0000	.0127	.2624	.2004	.0010	-.0004	164.9	-.0001	-.0007
#2	.0008	.0108	.2510	.1773	.0010	-.0003	167.0	.0000	-.0001
#3	.0004	.0089	.3166	.2110	.0011	-.0006	165.2	-.0002	-.0006

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0003	-.0013	.1513	.0000	.0034	-.0004	-.0014	.0002	3.025
Stddev	.0016	.0012	.0029	.000	.0000	.0001	.0010	.0001	.004
%RSD	552.1	91.78	1.928	1299.	1.351	19.94	76.51	55.90	.1355
#1	.0006	.0001	.1481	.0003	.0035	-.0004	-.0002	.0001	3.029
#2	.0017	-.0019	.1518	-.0003	.0034	-.0003	-.0017	.0002	3.021
#3	-.0014	-.0020	.1539	-.0001	.0034	-.0003	-.0022	.0003	3.025

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2528.6	6102.6	52728.	6573.0
Stddev	4.8	11.7	156.	14.5
%RSD	.18864	.19235	.29642	.22106
#1	2523.9	6093.3	52588.	6588.5
#2	2528.6	6115.8	52896.	6570.6
#3	2533.4	6098.6	52699.	6559.8

Zoom In Zoom Out

Sample Name: MP30670-MB2 Acquired: 8/2/2016 15:39:53 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0013	-.0015	.0011	.0000	.0819	.0000	-.0003	.0002
Stddev	.0001	.0076	.0008	.0003	.0001	.0020	.000	.0001	.0004
%RSD	67.15	582.5	52.96	23.52	831.5	2.428	95.10	39.78	165.1
#1	.0001	.0073	-.0020	.0012	.0001	.0841	.0000	-.0002	.0003
#2	.0002	.0038	-.0006	.0009	.0000	.0802	.0000	-.0004	-.0002
#3	.0004	-.0072	-.0020	.0014	.0000	.0813	-.0001	-.0002	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	-.0055	.1472	.0496	.0002	-.0006	F145.9	-.0001	.0002
Stddev	.0001	.0013	.0124	.0127	.0000	.0001	1.2	.0001	.0011
%RSD	10.87	22.87	8.414	25.69	6.546	25.34	.8257	136.0	562.5
#1	.0007	-.0044	.1526	.0512	.0002	-.0007	147.0	.0000	.0012
#2	.0006	-.0068	.1331	.0615	.0002	-.0004	144.6	-.0001	-.0009
#3	.0006	-.0053	.1561	.0361	.0002	-.0006	146.1	-.0003	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							2.500		
Low Limit							-2.500		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0012	.0162	-.0001	.0000	-.0004	-.0017	-.0001	.0040
Stddev	.0007	.0006	.0022	.0001	.0000	.0001	.0011	.0003	.0000
%RSD	1876.	47.95	13.33	114.3	288.7	13.68	65.69	338.3	.3708
#1	.0004	-.0012	.0178	.0000	.0000	-.0003	-.0029	.0000	.0040
#2	.0005	-.0017	.0137	.0000	.0000	-.0004	-.0011	.0002	.0039
#3	-.0008	-.0006	.0169	-.0002	.0001	-.0003	-.0009	-.0004	.0040
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP30670-MB2 Acquired: 8/2/2016 15:39:53 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2550.5	6090.6	53015.	6549.3
Stddev	10.2	20.3	74.	25.2
%RSD	.40162	.33305	.13955	.38441
#1	2557.7	6112.7	52933.	6533.0
#2	2538.8	6072.9	53033.	6578.3
#3	2555.1	6086.1	53078.	6536.6

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 15:44:12 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2437	38.57	1.937	2.005	1.963	38.40	1.979	1.976	1.953	1.975
Stddev	.0012	.03	.002	.002	.004	.07	.001	.001	.005	.002
%RSD	.4849	.0666	.0855	.0736	.1973	.1743	.0498	.0243	.2602	.0888
#1	.2429	38.60	1.936	2.004	1.962	38.38	1.979	1.975	1.948	1.974
#2	.2432	38.55	1.939	2.007	1.967	38.47	1.978	1.976	1.952	1.974
#3	.2451	38.57	1.936	2.006	1.960	38.34	1.980	1.976	1.958	1.977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.33	39.70	38.14	2.000	1.930	38.60	1.969	1.954	1.948	1.939
Stddev	.12	.06	.28	.007	.003	.03	.000	.004	.003	.004
%RSD	.3057	.1501	.7298	.3468	.1684	.0905	.0143	.2132	.1770	.1999
#1	38.27	39.66	38.22	1.993	1.926	38.57	1.969	1.958	1.945	1.937
#2	38.47	39.77	38.37	2.001	1.930	38.64	1.969	1.951	1.951	1.944
#3	38.27	39.69	37.83	2.007	1.933	38.61	1.969	1.951	1.948	1.937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.558	1.941	2.010	1.957	1.982	1.934	1.969
Stddev	.002	.001	.003	.006	.004	.005	.002
%RSD	.0948	.0693	.1346	.3251	.2128	.2429	.1222
#1	1.558	1.942	2.009	1.951	1.987	1.930	1.971
#2	1.560	1.942	2.013	1.955	1.981	1.932	1.967
#3	1.557	1.940	2.008	1.963	1.979	1.939	1.970
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 15:44:12 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2509.2	6289.5	55394.	6709.5
Stddev	3.6	6.5	212.	57.1
%RSD	.14434	.10414	.38217	.85060
#1	2505.9	6296.0	55631.	6706.9
#2	2513.1	6289.6	55327.	6653.7
#3	2508.7	6282.9	55223.	6767.8

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 15:48:10 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0137	.0001	.0004	.0005	.0093	.0002	.0002	.0006
Stddev	.0002	.0070	.0012	.0002	.0001	.0004	.0002	.0002	.0001
%RSD	30.08	51.42	877.2	64.47	25.13	4.449	73.93	68.57	26.57
#1	.0003	.0128	.0010	.0001	.0004	.0098	.0004	.0004	.0007
#2	.0006	.0071	.0006	.0005	.0006	.0090	.0002	.0001	.0004
#3	.0006	.0210	-.0012	.0005	.0006	.0091	.0001	.0002	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0252	.0836	.0248	.0005	F.0016	.1038	.0002	-.0005
Stddev	.0004	.0069	.0137	.0133	.0000	.0005	.0049	.0003	.0004
%RSD	61.46	27.33	16.42	53.82	6.834	29.95	4.700	136.1	77.30
#1	.0006	.0330	.0798	.0379	.0005	.0021	.0989	.0005	-.0001
#2	.0009	.0222	.0721	.0253	.0005	.0014	.1087	.0003	-.0010
#3	.0002	.0203	.0988	.0112	.0004	.0013	.1037	-.0001	-.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	-.0010	-.0013	.0005	.0005	.0015	.0000	.0005	.0002
Stddev	.0003	.0015	.0001	.0002	.0001	.0002	.0008	.0002	.0001
%RSD	29.92	146.9	11.55	33.47	15.99	12.54	3054.	35.86	29.83
#1	.0007	-.0026	-.0014	.0007	.0004	.0016	.0006	.0006	.0003
#2	.0012	.0003	-.0011	.0004	.0005	.0015	.0003	.0005	.0002
#3	.0011	-.0007	-.0013	.0004	.0005	.0013	-.0009	.0003	.0002
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 15:48:10 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2890.7	6505.1	57460.	6650.2
Stddev	6.0	8.9	132.	31.9
%RSD	.20836	.13699	.23055	.47906
#1	2896.3	6508.7	57472.	6654.2
#2	2891.3	6511.7	57587.	6616.5
#3	2884.3	6495.0	57323.	6679.8

Zoom In Zoom Out

Sample Name: MP30670-B2 Acquired: 8/2/2016 15:52:20 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0501	27.58	2.005	2.126	.0524	26.03	.0509	.5062	.2052
Stddev	.0002	.07	.003	.005	.0002	.05	.0001	.0004	.0010
%RSD	.4320	.2632	.1533	.2215	.4291	.1926	.1499	.0873	.4690
#1	.0503	27.67	2.008	2.131	.0525	26.06	.0509	.5063	.2060
#2	.0501	27.54	2.003	2.122	.0521	25.97	.0509	.5057	.2042
#3	.0498	27.54	2.003	2.125	.0525	26.06	.0508	.5066	.2056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2618	27.07	26.59	25.28	.5221	.4923	F177.0	.5096	.4992
Stddev	.0006	.09	.06	.04	.0014	.0006	2.5	.0006	.0014
%RSD	.2211	.3340	.2252	.1590	.2596	.1158	1.405	.1080	.2726
#1	.2624	27.11	26.60	25.26	.5233	.4927	179.1	.5092	.4977
#2	.2615	26.96	26.53	25.26	.5206	.4917	174.3	.5092	.5003
#3	.2613	27.13	26.65	25.33	.5224	.4926	177.7	.5102	.4997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value							25.00		
Range							20.00%		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5042	2.032	.0180	.4966	.5040	.5042	1.994	.4838	.5145
Stddev	.0014	.004	.0011	.0019	.0015	.0018	.003	.0015	.0011
%RSD	.2830	.2191	6.375	.3775	.2907	.3574	.1362	.3146	.2063
#1	.5033	2.037	.0167	.4982	.5056	.5057	1.991	.4855	.5149
#2	.5058	2.029	.0182	.4945	.5035	.5022	1.996	.4826	.5133
#3	.5034	2.031	.0190	.4970	.5028	.5047	1.994	.4833	.5153
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP30670-B2 Acquired: 8/2/2016 15:52:20 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2440.1	6092.9	52981.	6512.6
Stddev	3.8	13.8	179.	32.9
%RSD	.15603	.22727	.33699	.50464
#1	2440.8	6085.2	52878.	6535.3
#2	2443.6	6108.9	53187.	6527.6
#3	2436.0	6084.6	52878.	6474.9

Zoom In Zoom Out

Sample Name: MP30670-MB3 Acquired: 8/2/2016 15:56:27 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0008	-.0008	.0000	.0000	.0118	-.0001	-.0003	.0004
Stddev	.0002	.0075	.0002	.000	.0000	.0016	.0000	.0000	.0001
%RSD	249.0	931.4	23.68	6440.	487.7	13.33	16.02	12.36	25.72
#1	.0003	-.0024	-.0009	.0001	.0000	.0117	-.0001	-.0003	.0004
#2	-.0001	.0094	-.0006	.0002	.0000	.0102	-.0002	-.0002	.0003
#3	.0000	-.0046	-.0010	-.0003	.0000	.0133	-.0001	-.0002	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0070	.1699	.0138	.0000	.0000	F170.4	-.0001	.0008
Stddev	.0002	.0041	.0299	.0196	.000	.000	.9	.0002	.0003
%RSD	171.9	58.27	17.57	142.3	43.08	335.4	.5480	290.3	39.97
#1	.0003	.0070	.1363	.0348	.0000	.0001	170.0	-.0002	.0004
#2	-.0001	.0111	.1802	-.0041	-.0001	-.0001	169.7	.0001	.0009
#3	.0001	.0029	.1933	.0107	.0000	-.0001	171.4	.0000	.0010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							2.500		
Low Limit							-2.500		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0010	.0009	.0002	.0000	.0000	-.0012	.0001	.0010
Stddev	.0007	.0005	.0004	.0002	.000	.000	.0007	.0001	.0001
%RSD	301.5	45.01	38.60	133.6	409.1	152.0	55.33	221.3	7.025
#1	.0005	-.0009	.0006	-.0001	-.0001	.0000	-.0008	.0002	.0011
#2	.0008	-.0007	.0010	.0002	.0001	-.0001	-.0019	.0001	.0010
#3	-.0006	-.0015	.0013	.0004	-.0002	.0000	-.0008	-.0001	.0011
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP30670-MB3 Acquired: 8/2/2016 15:56:27 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2532.6	6086.8	52471.	6533.5
Stddev	6.0	11.7	157.	37.0
%RSD	.23789	.19144	.29846	.56676
#1	2530.2	6096.4	52442.	6529.6
#2	2528.2	6090.2	52640.	6572.3
#3	2539.5	6073.8	52331.	6498.6

Zoom In Zoom Out

Sample Name: MP30670-B3 Acquired: 8/2/2016 16:00:48 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0498	27.54	1.996	2.128	.0523	25.98	.0506	.5034	.2041
Stddev	.0002	.07	.004	.010	.0002	.07	.0001	.0002	.0002
%RSD	.3262	.2620	.2141	.4531	.3633	.2660	.1945	.0348	.1211
#1	.0500	27.60	1.993	2.136	.0525	26.03	.0507	.5032	.2039
#2	.0499	27.57	2.001	2.129	.0524	26.01	.0507	.5035	.2043
#3	.0497	27.46	1.994	2.117	.0521	25.90	.0505	.5035	.2042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2606	27.25	26.78	25.40	.5236	.4887	F193.8	.5053	.5021
Stddev	.0004	.12	.13	.03	.0001	.0005	5.7	.0009	.0011
%RSD	.1432	.4524	.4768	.1267	.0181	.1065	2.936	.1811	.2133
#1	.2609	27.37	26.89	25.42	.5235	.4890	198.2	.5048	.5033
#2	.2607	27.27	26.81	25.40	.5236	.4891	195.8	.5064	.5012
#3	.2602	27.12	26.64	25.36	.5236	.4881	187.3	.5048	.5017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value							25.00		
Range							20.00%		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5026	2.024	.0008	.4897	.5050	.5061	1.997	.4833	.5108
Stddev	.0009	.001	.0003	.0004	.0008	.0005	.004	.0014	.0001
%RSD	.1828	.0578	33.99	.0731	.1505	.0928	.1847	.2816	.0292
#1	.5017	2.023	.0008	.4901	.5059	.5067	2.001	.4823	.5108
#2	.5035	2.025	.0010	.4894	.5047	.5057	1.994	.4848	.5107
#3	.5026	2.023	.0005	.4896	.5044	.5061	1.997	.4827	.5110
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP30670-B3 Acquired: 8/2/2016 16:00:48 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2423.7	6109.6	52620.	6444.7
Stddev	4.1	3.5	59.	50.8
%RSD	.16736	.05773	.11173	.78767
#1	2419.3	6106.0	52686.	6402.5
#2	2427.2	6113.0	52573.	6430.5
#3	2424.6	6109.7	52601.	6501.0

Zoom In Zoom Out

Sample Name: MP30671-MB1 Acquired: 8/2/2016 16:04:55 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0016	-.0007	.0000	.0000	.0083	-.0001	-.0003	.0006	-.0002
Stddev	.0004	.0033	.0004	.0000	.000	.0007	.0000	.0001	.0003	.0002
%RSD	188.8	207.2	53.45	9.619	94.24	8.020	36.82	31.36	42.45	126.4
#1	.0002	.0051	-.0011	.0000	.0000	.0090	-.0001	-.0002	.0004	-.0003
#2	.0005	-.0015	-.0007	.0000	.0000	.0082	-.0002	-.0003	.0009	-.0003
#3	-.0002	.0012	-.0003	.0000	-.0001	.0077	-.0001	-.0003	.0006	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0140	.1355	.0038	.0000	.0000	.1664	.0002	-.0004	.0008	-.0010
Stddev	.0056	.0301	.0197	.0000	.0001	.0056	.0001	.0001	.0006	.0009
%RSD	39.85	22.21	519.0	19.17	207.3	3.375	59.07	35.38	74.33	91.84
#1	.0200	.1445	-.0172	.0000	.0002	.1721	.0001	-.0006	.0014	-.0003
#2	.0131	.1019	.0066	.0000	.0000	.1608	.0003	-.0003	.0007	-.0007
#3	.0090	.1601	.0219	.0000	.0000	.1665	.0004	-.0003	.0003	-.0020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022	.0207	-.0001	.0004	-.0005	.0000	.0011
Stddev	.0001	.0003	.0000	.0000	.0004	.000	.0000
%RSD	6.346	1.324	62.48	4.229	84.81	89.35	2.657
#1	.0023	.0210	.0000	.0004	-.0009	.0000	.0011
#2	.0021	.0207	-.0001	.0004	-.0002	-.0001	.0011
#3	.0021	.0205	.0000	.0004	-.0003	-.0001	.0011
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: MP30671-MB1 Acquired: 8/2/2016 16:04:55 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2874.7	6477.0	57166.	6709.8
Stddev	3.1	13.7	129.	63.1
%RSD	.10791	.21205	.22572	.94083
#1	2874.0	6463.5	57102.	6641.0
#2	2878.0	6491.0	57314.	6723.2
#3	2871.9	6476.5	57081.	6765.1

Zoom In Zoom Out

Sample Name: MP30671-B1 Acquired: 8/2/2016 16:09:07 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0472	26.75	1.882	2.075	.0508	25.27	.0492	.4955	.1983	.2554
Stddev	.0002	.04	.002	.004	.0002	.05	.0001	.0003	.0000	.0005
%RSD	.4813	.1315	.1026	.1771	.4610	.1961	.1125	.0548	.0225	.2153
#1	.0472	26.73	1.880	2.077	.0505	25.25	.0492	.4953	.1983	.2547
#2	.0470	26.73	1.884	2.071	.0508	25.24	.0492	.4954	.1983	.2558
#3	.0474	26.79	1.884	2.078	.0510	25.33	.0493	.4958	.1983	.2556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.72	25.89	24.79	.5133	.4822	25.15	.4954	.4793	.4732	1.890
Stddev	.07	.06	.15	.0001	.0003	.05	.0007	.0012	.0020	.003
%RSD	.2593	.2480	.6064	.0142	.0559	.1970	.1390	.2407	.4194	.1739
#1	26.68	25.88	24.64	.5134	.4822	25.16	.4953	.4791	.4709	1.887
#2	26.69	25.82	24.80	.5132	.4820	25.10	.4948	.4782	.4742	1.890
#3	26.80	25.95	24.94	.5133	.4825	25.20	.4961	.4805	.4745	1.894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	.5011	.4964	.4995	1.951	.4687	.4906
Stddev	.0006	.0017	.0009	.0008	.004	.0012	.0003
%RSD	45.66	.3296	.1913	.1522	.2187	.2501	.0600
#1	.0008	.4998	.4968	.4999	1.948	.4674	.4905
#2	.0020	.5006	.4954	.4986	1.955	.4689	.4903
#3	.0013	.5029	.4972	.5000	1.949	.4697	.4909
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP30671-B1 Acquired: 8/2/2016 16:09:07 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2589.5	6318.7	54616.	6593.4
Stddev	2.5	4.0	77.	41.6
%RSD	.09729	.06400	.14096	.63136
#1	2586.8	6314.8	54594.	6595.4
#2	2591.8	6322.9	54702.	6634.0
#3	2590.0	6318.3	54553.	6550.8

Zoom In Zoom Out

Sample Name: FA35800-1 Acquired: 8/2/2016 16:13:05 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0007	60.96	.0156	.1096	.0013	3.069	-.0005	.0094	.0659	.0209
Stddev	.0001	.03	.0008	.0001	.0001	.004	.0000	.0001	.0003	.0004
%RSD	15.26	.0544	4.877	.1343	4.313	.1276	3.765	1.354	.4681	1.791
#1	.0006	60.96	.0148	.1094	.0012	3.065	-.0005	.0095	.0660	.0207
#2	.0006	60.93	.0158	.1096	.0013	3.068	-.0005	.0094	.0655	.0214
#3	.0008	61.00	.0162	.1096	.0013	3.073	-.0005	.0092	.0661	.0208

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	49.26	1.524	1.817	.2797	.0033	.1969	.0210	.0341	.0009	-.0001
Stddev	.13	.015	.032	.0002	.0001	.0049	.0002	.0002	.0013	.0020
%RSD	.2738	.9718	1.763	.0679	2.502	2.503	1.078	.4763	139.8	2746.
#1	49.15	1.520	1.799	.2799	.0034	.1950	.0211	.0340	.0010	-.0011
#2	49.22	1.513	1.798	.2796	.0034	.2024	.0207	.0340	.0021	.0022
#3	49.41	1.541	1.854	.2796	.0033	.1931	.0212	.0343	-.0004	-.0013

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.433	.0179	.0257	.6977	-.0011	.0900	.0486
Stddev	.001	.0001	.0000	.0003	.0001	.0002	.0001
%RSD	.0693	.3631	.0897	.0421	7.783	.1812	.1706
#1	1.432	.0179	.0257	.6980	-.0010	.0899	.0486
#2	1.434	.0180	.0257	.6977	-.0010	.0899	.0485
#3	1.432	.0178	.0257	.6975	-.0012	.0901	.0487

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2738.6	6838.8	58356.	6973.8
Stddev	10.4	14.7	92.	58.6
%RSD	.37958	.21438	.15739	.84012
#1	2728.6	6823.0	58316.	7022.5
#2	2749.4	6851.9	58291.	6990.1
#3	2737.8	6841.6	58461.	6908.7

Zoom In Zoom Out

Sample Name: MP30671-D1 Acquired: 8/2/2016 16:17:08 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0008	71.27	.0175	.1266	.0015	3.541	-.0005	.0112	.0751	.0240
Stddev	.0002	.19	.0003	.0002	.0001	.006	.0000	.0000	.0002	.0001
%RSD	29.17	.2703	1.581	.1482	4.371	.1726	5.949	.2885	.3104	.6139
#1	.0008	71.24	.0173	.1268	.0015	3.544	-.0005	.0112	.0751	.0242
#2	.0007	71.10	.0175	.1264	.0014	3.534	-.0005	.0113	.0753	.0239
#3	.0011	71.48	.0178	.1267	.0014	3.544	-.0005	.0113	.0749	.0239

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	56.97	1.738	2.162	.3351	.0036	.2090	.0241	.0406	-.0006	-.0008
Stddev	.08	.013	.021	.0009	.0001	.0018	.0002	.0011	.0006	.0009
%RSD	.1322	.7595	.9511	.2656	3.181	.8683	.9169	2.659	92.48	109.1
#1	56.90	1.737	2.148	.3362	.0037	.2079	.0239	.0398	-.0007	-.0017
#2	56.97	1.725	2.152	.3346	.0037	.2080	.0241	.0418	.0000	-.0008
#3	57.05	1.752	2.186	.3346	.0035	.2111	.0243	.0401	-.0012	.0000

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.396	.0176	.0299	.7661	-.0016	.1052	.0584
Stddev	.003	.0001	.0001	.0017	.0005	.0006	.0001
%RSD	.1908	.7388	.3815	.2191	28.95	.5772	.0986
#1	1.395	.0175	.0299	.7678	-.0019	.1058	.0583
#2	1.394	.0177	.0300	.7644	-.0019	.1053	.0585
#3	1.399	.0177	.0298	.7661	-.0011	.1046	.0584

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2738.0	6887.4	58999.	7060.0
Stddev	8.8	13.8	285.	9.6
%RSD	.32237	.19978	.48347	.13568
#1	2746.7	6903.3	58763.	7064.9
#2	2729.1	6879.5	58918.	7049.0
#3	2738.2	6879.4	59316.	7066.2

Zoom In Zoom Out

Sample Name: MP30671-SD1 Acquired: 8/2/2016 16:21:12 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0012	65.44	.0128	.1168	.0009	3.384	-.0009	.0098	.0695	.0223
Stddev	.0004	.14	.0025	.0006	.0002	.016	.0002	.0005	.0005	.0021
%RSD	32.69	.2104	19.42	.5549	19.64	.4705	21.40	5.438	.7864	9.499
#1	.0013	65.60	.0155	.1162	.0009	3.391	-.0009	.0094	.0699	.0244
#2	.0007	65.34	.0105	.1175	.0011	3.365	-.0007	.0097	.0697	.0225
#3	.0015	65.38	.0125	.1167	.0007	3.395	-.0011	.0104	.0689	.0201

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	53.21	1.754	2.041	.3016	.0014	.4604	.0228	.0358	-.0028	-.0046
Stddev	.32	.098	.060	.0006	.0002	.0391	.0010	.0005	.0027	.0017
%RSD	.6000	5.564	2.946	.1951	16.35	8.483	4.378	1.316	94.87	36.56
#1	53.58	1.664	2.105	.3016	.0013	.4945	.0216	.0354	-.0015	-.0047
#2	53.01	1.858	2.032	.3010	.0017	.4178	.0233	.0363	-.0059	-.0029
#3	53.04	1.739	1.985	.3022	.0013	.4689	.0234	.0357	-.0011	-.0063

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.581	.0194	.0269	.7359	-.0009	.0957	.0817
Stddev	.000	.0006	.0002	.0016	.0029	.0005	.0003
%RSD	.0254	2.993	.8936	.2235	317.0	.5103	.3420
#1	1.581	.0198	.0271	.7375	.0016	.0962	.0819
#2	1.581	.0197	.0267	.7342	-.0003	.0954	.0814
#3	1.580	.0187	.0271	.7359	-.0041	.0954	.0817

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2876.1	6703.7	58585.	6807.3
Stddev	4.9	4.6	277.	57.2
%RSD	.17087	.06797	.47302	.83964
#1	2872.9	6708.6	58298.	6741.9
#2	2881.8	6699.6	58606.	6847.6
#3	2873.7	6702.9	58851.	6832.5

Zoom In Zoom Out

Sample Name: MP30671-PS1 Acquired: 8/2/2016 16:25:17 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0438	62.32	.1083	.3649	.0499	7.920	.0467	.0570	.1130	.1210
Stddev	.0002	.19	.0004	.0020	.0003	.025	.0001	.0000	.0001	.0002
%RSD	.3590	.3023	.4106	.5546	.5482	.3206	.1824	.0460	.0526	.1879
#1	.0437	62.51	.1080	.3670	.0502	7.949	.0466	.0570	.1129	.1210
#2	.0437	62.13	.1081	.3630	.0498	7.907	.0467	.0570	.1131	.1207
#3	.0440	62.33	.1088	.3647	.0497	7.904	.0468	.0570	.1130	.1212

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	51.24	11.20	6.605	.3234	.0968	9.775	.1148	.0822	.0958	.0871
Stddev	.29	.04	.015	.0006	.0002	.034	.0002	.0007	.0012	.0016
%RSD	.5661	.3840	.2273	.1984	.2183	.3504	.1853	.9055	1.298	1.824
#1	51.57	11.25	6.609	.3241	.0969	9.815	.1146	.0813	.0955	.0870
#2	51.02	11.18	6.589	.3228	.0965	9.758	.1147	.0826	.0948	.0887
#3	51.13	11.17	6.618	.3233	.0969	9.753	.1150	.0825	.0972	.0855

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.428	.0627	.0729	.7805	.0957	.1338	.2892
Stddev	.002	.0004	.0002	.0014	.0012	.0001	.0004
%RSD	.1342	.6078	.3383	.1740	1.264	.0899	.1392
#1	1.426	.0631	.0732	.7821	.0962	.1338	.2888
#2	1.428	.0624	.0727	.7797	.0944	.1339	.2891
#3	1.430	.0626	.0729	.7797	.0967	.1337	.2896

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2671.9	6747.0	57454.	6911.9
Stddev	3.2	8.4	155.	14.7
%RSD	.11907	.12505	.26993	.21209
#1	2673.8	6755.8	57281.	6926.4
#2	2673.7	6746.2	57582.	6912.1
#3	2668.2	6739.0	57499.	6897.1

Zoom In Zoom Out

Sample Name: MP30671-S1 Acquired: 8/2/2016 16:29:19 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0455	98.01	1.714	2.078	.0494	26.65	.0447	.4629	.2530	.2647
Stddev	.0001	.04	.004	.004	.0001	.01	.0002	.0012	.0017	.0004
%RSD	.2384	.0406	.2287	.1829	.2541	.0484	.4344	.2661	.6758	.1677
#1	.0456	97.99	1.717	2.077	.0493	26.64	.0446	.4633	.2514	.2650
#2	.0454	98.06	1.710	2.082	.0495	26.66	.0445	.4615	.2548	.2648
#3	.0454	97.98	1.716	2.074	.0493	26.64	.0449	.4638	.2526	.2642

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	75.04	26.04	25.45	.7559	.4221	23.76	.4823	.5075	.1836	1.720
Stddev	.25	.08	.03	.0015	.0006	.01	.0011	.0001	.0016	.006
%RSD	.3268	.3219	.1042	.1980	.1345	.0579	.2278	.0188	.8445	.3528
#1	74.97	26.09	25.47	.7546	.4227	23.78	.4825	.5076	.1842	1.724
#2	75.31	26.08	25.42	.7575	.4215	23.75	.4811	.5074	.1819	1.713
#3	74.84	25.94	25.45	.7554	.4220	23.76	.4833	.5076	.1848	1.723

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.663	.4431	.4901	1.173	1.884	.5357	.5212
Stddev	.004	.0008	.0005	.001	.004	.0019	.0012
%RSD	.2458	.1707	.1032	.0912	.1977	.3508	.2215
#1	1.667	.4434	.4905	1.172	1.886	.5349	.5209
#2	1.659	.4422	.4903	1.174	1.880	.5379	.5202
#3	1.664	.4436	.4895	1.172	1.886	.5344	.5224

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2566.3	6695.5	57021.	6944.2
Stddev	3.5	11.9	297.	9.7
%RSD	.13679	.17801	.52133	.13976
#1	2562.8	6685.6	57271.	6935.8
#2	2569.8	6708.7	56692.	6942.1
#3	2566.2	6692.3	57101.	6954.8

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 16:33:16 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2442	38.60	1.920	2.014	1.980	38.35	1.978	1.974	1.952	1.986
Stddev	.0011	.06	.004	.005	.005	.07	.003	.003	.007	.002
%RSD	.4406	.1503	.2328	.2261	.2385	.1856	.1419	.1304	.3563	.1099
#1	.2444	38.61	1.918	2.012	1.984	38.39	1.976	1.972	1.948	1.984
#2	.2452	38.65	1.918	2.019	1.982	38.39	1.977	1.973	1.960	1.986
#3	.2430	38.54	1.926	2.011	1.975	38.27	1.981	1.977	1.947	1.989
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.76	40.00	38.52	2.008	1.923	38.95	1.957	1.962	1.931	1.923
Stddev	.01	.08	.14	.006	.005	.04	.004	.003	.006	.005
%RSD	.0331	.1889	.3629	.2844	.2508	.1030	.1879	.1259	.3077	.2677
#1	38.77	40.02	38.67	2.004	1.920	38.95	1.954	1.960	1.927	1.917
#2	38.78	40.07	38.39	2.015	1.922	38.98	1.955	1.965	1.928	1.926
#3	38.75	39.92	38.49	2.005	1.929	38.91	1.961	1.962	1.938	1.926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.546	1.920	2.033	1.971	1.994	1.939	1.968
Stddev	.003	.003	.004	.004	.002	.005	.003
%RSD	.1948	.1747	.1750	.2287	.0939	.2836	.1423
#1	1.545	1.917	2.035	1.967	1.993	1.935	1.966
#2	1.544	1.920	2.035	1.976	1.996	1.945	1.968
#3	1.549	1.924	2.029	1.970	1.993	1.936	1.971
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 16:33:16 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2520.5	6361.3	55433.	6652.8
Stddev	7.0	18.2	237.	27.1
%RSD	.27822	.28559	.42784	.40681
#1	2527.6	6380.1	55559.	6630.0
#2	2513.6	6359.8	55160.	6682.7
#3	2520.3	6343.9	55581.	6645.8

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 16:37:12 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0054	-.0003	.0002	.0004	.0042	.0001	.0001	.0004
Stddev	.0003	.0068	.0003	.0000	.0001	.0022	.0001	.0001	.0001
%RSD	148.7	126.7	106.5	11.18	18.25	52.27	76.08	80.67	31.75
#1	.0005	.0093	-.0007	.0002	.0004	.0035	.0002	.0000	.0003
#2	-.0001	-.0025	-.0001	.0003	.0003	.0025	.0001	.0002	.0005
#3	.0003	.0093	-.0001	.0002	.0005	.0067	.0000	.0001	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0233	.0676	.0185	.0003	F.0016	.0557	.0000	.0003
Stddev	.0001	.0044	.0101	.0191	.0000	.0005	.0067	.0001	.0004
%RSD	42.67	18.93	14.94	103.1	5.350	29.94	11.99	252.4	118.3
#1	-.0003	.0282	.0564	-.0028	.0003	.0022	.0597	.0001	.0008
#2	-.0002	.0221	.0759	.0341	.0003	.0016	.0480	-.0001	.0001
#3	-.0001	.0197	.0706	.0243	.0003	.0012	.0596	.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	-.0006	-.0012	.0002	.0003	.0009	-.0001	.0002	.0001
Stddev	.0002	.0016	.0005	.0001	.0000	.0001	.0004	.0002	.0001
%RSD	10.13	279.2	44.43	77.31	6.699	10.18	347.3	79.66	70.59
#1	.0017	-.0008	-.0017	.0003	.0003	.0010	.0001	.0003	.0002
#2	.0020	-.0020	-.0010	.0003	.0003	.0009	-.0006	.0000	.0002
#3	.0019	.0011	-.0007	.0000	.0003	.0008	.0001	.0004	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 16:37:12 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2890.8	6555.4	57226.	6612.1
Stddev	2.3	5.0	189.	50.5
%RSD	.07960	.07589	.33047	.76410
#1	2889.5	6560.9	57014.	6589.2
#2	2889.4	6551.3	57378.	6670.0
#3	2893.4	6554.1	57286.	6577.0

Zoom In Zoom Out

Sample Name: MP30671-S2 Acquired: 8/2/2016 16:41:24 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0458	98.42	1.718	2.089	.0496	26.84	.0451	.4658	.2618	.2672
Stddev	.0003	.22	.001	.005	.0003	.09	.0000	.0006	.0001	.0011
%RSD	.6359	.2265	.0825	.2320	.5789	.3192	.0760	.1211	.0402	.4205
#1	.0455	98.45	1.719	2.092	.0495	26.81	.0451	.4664	.2619	.2685
#2	.0460	98.62	1.719	2.092	.0499	26.94	.0451	.4655	.2617	.2662
#3	.0460	98.18	1.716	2.083	.0494	26.77	.0450	.4654	.2618	.2670

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	73.94	26.15	25.66	.7466	.4271	23.93	.4855	.5115	.1836	1.727
Stddev	.26	.06	.10	.0017	.0003	.04	.0005	.0006	.0019	.002
%RSD	.3575	.2424	.4076	.2217	.0623	.1791	.1122	.1110	1.051	.1397
#1	73.89	26.13	25.59	.7481	.4268	23.92	.4861	.5116	.1817	1.726
#2	74.23	26.23	25.78	.7448	.4273	23.97	.4851	.5109	.1836	1.730
#3	73.71	26.10	25.61	.7469	.4270	23.89	.4854	.5121	.1855	1.726

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.629	.4476	.4995	1.174	1.895	.5398	.5258
Stddev	.001	.0004	.0006	.002	.008	.0003	.0007
%RSD	.0573	.0885	.1189	.1947	.4407	.0529	.1366
#1	1.630	.4480	.4993	1.174	1.890	.5397	.5265
#2	1.630	.4475	.5002	1.172	1.891	.5395	.5251
#3	1.628	.4472	.4990	1.177	1.905	.5401	.5258

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2558.5	6654.4	56165.	6932.1
Stddev	8.3	17.6	92.	75.7
%RSD	.32478	.26380	.16323	1.0921
#1	2549.4	6634.2	56065.	6975.5
#2	2565.8	6663.0	56184.	6844.7
#3	2560.1	6665.9	56245.	6976.2

Zoom In Zoom Out

Sample Name: FA35800-2 Acquired: 8/2/2016 16:45:20 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0012	346.5	.0118	.4084	.0018	.8496	-.0005	.0063	.2264	.1235
Stddev	.0002	1.6	.0005	.0003	.0000	.0032	.0001	.0001	.0003	.0003
%RSD	14.21	.4753	3.903	.0761	1.259	.3732	17.09	1.387	.1465	.2363
#1	.0011	346.0	.0113	.4088	.0018	.8471	-.0005	.0062	.2262	.1235
#2	.0014	345.1	.0120	.4082	.0018	.8485	-.0004	.0063	.2267	.1232
#3	.0011	348.3	.0121	.4083	.0018	.8532	-.0005	.0063	.2261	.1238

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	15.87	2.552	3.558	.1064	.0060	.1856	.0578	.0614	-.0006	-.0022
Stddev	.04	.014	.005	.0004	.0001	.0133	.0002	.0012	.0006	.0024
%RSD	.2351	.5272	.1543	.3372	1.603	7.140	.2607	1.948	103.6	110.8
#1	15.91	2.541	3.564	.1060	.0059	.1736	.0580	.0619	-.0002	-.0009
#2	15.84	2.567	3.557	.1066	.0061	.1833	.0578	.0622	-.0012	-.0050
#3	15.87	2.548	3.553	.1066	.0059	.1998	.0577	.0600	-.0003	-.0007

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.646	.0237	.0310	1.080	-.0020	.2060	.1267
Stddev	.001	.0003	.0001	.001	.0010	.0007	.0002
%RSD	.0818	1.426	.2335	.0859	52.32	.3521	.1289
#1	1.647	.0234	.0310	1.079	-.0008	.2062	.1266
#2	1.646	.0240	.0309	1.080	-.0028	.2066	.1268
#3	1.645	.0239	.0311	1.080	-.0023	.2052	.1265

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2572.1	7105.2	57106.	7287.5
Stddev	6.4	10.6	200.	31.4
%RSD	.25037	.14900	.35080	.43156
#1	2566.5	7094.4	57266.	7251.6
#2	2570.7	7105.7	57170.	7300.8
#3	2579.1	7115.6	56881.	7310.1

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: FA35800-3 Acquired: 8/2/2016 16:49:29 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0020	123.7	.0373	.1699	.0020	2.128	-.0011	.0102	.1547	.0441
Stddev	.0002	.1	.0003	.0003	.0001	.004	.0001	.0001	.0006	.0004
%RSD	10.55	.1006	.8468	.1765	3.339	.1927	8.146	.7074	.3765	.8180
#1	.0022	123.7	.0376	.1699	.0020	2.133	-.0012	.0103	.1553	.0445
#2	.0018	123.8	.0372	.1701	.0020	2.126	-.0010	.0102	.1547	.0440
#3	.0021	123.6	.0370	.1695	.0019	2.126	-.0011	.0102	.1542	.0438

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	115.1	2.251	2.904	.2079	.0078	.2350	.0291	.0540	-.0010	.0012
Stddev	.3	.014	.006	.0004	.0002	.0026	.0001	.0013	.0013	.0004
%RSD	.2384	.6276	.2010	.1766	2.191	1.117	.3670	2.387	134.5	31.16
#1	115.0	2.235	2.909	.2082	.0079	.2320	.0292	.0529	-.0002	.0009
#2	115.4	2.260	2.898	.2075	.0079	.2372	.0291	.0554	-.0002	.0010
#3	114.9	2.260	2.904	.2079	.0076	.2356	.0290	.0537	-.0025	.0016

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.741	.0188	.0193	.7275	-.0027	.2281	.0629
Stddev	.003	.0001	.0001	.0007	.0008	.0003	.0000
%RSD	.1465	.5645	.4620	.0909	29.17	.1106	.0691
#1	1.744	.0188	.0194	.7283	-.0023	.2284	.0629
#2	1.741	.0189	.0193	.7272	-.0022	.2280	.0629
#3	1.739	.0187	.0192	.7271	-.0036	.2280	.0630

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2702.4	6965.6	58430.	7084.7
Stddev	1.9	12.1	169.	2.5
%RSD	.06975	.17375	.28984	.03597
#1	2704.2	6952.6	58540.	7085.2
#2	2702.5	6976.5	58514.	7087.0
#3	2700.4	6967.6	58235.	7082.0

Zoom In Zoom Out

Sample Name: FA35800-4 Acquired: 8/2/2016 16:53:32 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0045	408.3	.0236	.3264	.0018	1.198	-.0009	.0144	.6066	.1397
Stddev	.0000	1.2	.0005	.0020	.0000	.008	.0001	.0001	.0014	.0001
%RSD	.4970	.2849	1.950	.6255	2.372	.6428	7.221	.7076	.2331	.0711
#1	.0045	409.6	.0231	.3246	.0018	1.201	-.0009	.0143	.6076	.1399
#2	.0045	407.7	.0238	.3261	.0019	1.189	-.0009	.0145	.6050	.1397
#3	.0044	407.5	.0240	.3286	.0019	1.204	-.0010	.0143	.6073	.1397

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	90.69	3.387	4.026	.2097	.0249	.3336	.0553	.1358	-.0002	.0001
Stddev	.45	.021	.040	.0002	.0001	.0019	.0002	.0002	.0009	.0011
%RSD	.4916	.6138	.9938	.0875	.4438	.5682	.4404	.1564	408.4	849.3
#1	90.33	3.383	4.068	.2095	.0248	.3345	.0555	.1358	-.0013	.0013
#2	90.57	3.368	3.988	.2096	.0250	.3314	.0551	.1361	.0004	-.0002
#3	91.19	3.409	4.023	.2099	.0248	.3348	.0554	.1357	.0002	-.0008

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.804	.0260	.0294	.5796	-.0079	.5789	.1021
Stddev	.001	.0003	.0001	.0007	.0007	.0018	.0003
%RSD	.0726	1.226	.3395	.1256	9.323	.3035	.2698
#1	1.805	.0258	.0293	.5804	-.0087	.5803	.1020
#2	1.804	.0263	.0294	.5790	-.0079	.5769	.1018
#3	1.803	.0257	.0295	.5793	-.0072	.5794	.1024

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2551.6	7974.5	64087.	8358.5
Stddev	3.2	13.0	161.	38.1
%RSD	.12482	.16310	.25142	.45616
#1	2553.2	7977.5	63901.	8314.5
#2	2553.7	7985.8	64185.	8380.3
#3	2548.0	7960.3	64176.	8380.8

Zoom In Zoom Out

Sample Name: FA35800-5 Acquired: 8/2/2016 16:57:41 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0017	31.12	.0299	.0509	.0011	.6520	-.0003	.0015	.0701	.0461
Stddev	.0000	.03	.0002	.0002	.0000	.0032	.0000	.0001	.0002	.0002
%RSD	.9977	.0972	.7016	.3530	1.208	.4885	4.736	9.218	.2806	.3727
#1	.0017	31.15	.0300	.0511	.0011	.6484	-.0003	.0015	.0700	.0462
#2	.0017	31.11	.0301	.0509	.0011	.6545	-.0003	.0017	.0703	.0459
#3	.0017	31.09	.0297	.0507	.0011	.6530	-.0003	.0014	.0699	.0462

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	26.62	1.202	.7344	.0780	.0106	.1519	.0044	.0683	-.0013	-.0004
Stddev	.10	.017	.0073	.0001	.0001	.0059	.0001	.0007	.0007	.0005
%RSD	.3885	1.402	.9873	.1610	.5594	3.859	1.426	1.096	50.76	128.6
#1	26.72	1.184	.7260	.0781	.0106	.1577	.0044	.0688	-.0021	-.0010
#2	26.64	1.217	.7386	.0779	.0105	.1460	.0043	.0675	-.0008	.0000
#3	26.51	1.206	.7386	.0780	.0106	.1520	.0044	.0687	-.0011	-.0002

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.493	.0187	.0109	.5731	-.0092	.2557	.0128
Stddev	.002	.0002	.0001	.0006	.0003	.0008	.0000
%RSD	.1380	.8852	.8790	.1024	2.895	.2968	.3221
#1	1.494	.0187	.0110	.5737	-.0090	.2560	.0128
#2	1.490	.0189	.0108	.5729	-.0091	.2548	.0128
#3	1.494	.0186	.0108	.5726	-.0095	.2563	.0129

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2781.9	8972.8	78072.	9075.3
Stddev	5.8	7.5	315.	141.2
%RSD	.20953	.08315	.40362	1.5559
#1	2781.7	8964.7	77860.	8919.4
#2	2787.8	8979.4	78434.	9111.6
#3	2776.1	8974.3	77922.	9194.8

Zoom In Zoom Out

Sample Name: FA35800-6 Acquired: 8/2/2016 17:01:45 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0028	115.4	.0337	.0834	.0011	1.447	-.0007	.0030	.1420	.0510
Stddev	.0003	.0	.0007	.0005	.0001	.003	.0000	.0000	.0005	.0002
%RSD	11.23	.0383	2.148	.5908	5.025	.2152	6.846	1.207	.3611	.3493
#1	.0030	115.4	.0329	.0836	.0010	1.449	-.0007	.0030	.1423	.0510
#2	.0024	115.3	.0337	.0838	.0011	1.449	-.0007	.0030	.1422	.0509
#3	.0029	115.3	.0344	.0829	.0011	1.444	-.0006	.0030	.1414	.0512

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	92.80	2.185	1.189	.1180	.0083	.4971	.0198	.0362	-.0012	-.0003
Stddev	.27	.012	.028	.0003	.0002	.0055	.0002	.0001	.0006	.0008
%RSD	.2879	.5523	2.332	.2275	2.241	1.104	1.158	.3279	44.33	282.5
#1	92.99	2.196	1.220	.1180	.0081	.4917	.0200	.0363	-.0009	-.0009
#2	92.91	2.186	1.166	.1183	.0084	.5027	.0198	.0361	-.0010	-.0006
#3	92.49	2.172	1.181	.1177	.0083	.4969	.0196	.0363	-.0019	.0006

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.660	.0214	.0186	.7347	-.0045	.3145	.0431
Stddev	.003	.0002	.0001	.0010	.0001	.0012	.0001
%RSD	.1791	.9683	.3098	.1314	2.451	.3707	.2396
#1	1.661	.0212	.0186	.7346	-.0043	.3149	.0432
#2	1.657	.0215	.0186	.7357	-.0045	.3154	.0431
#3	1.662	.0216	.0185	.7338	-.0045	.3132	.0430

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2709.3	7405.0	62758.	7602.6
Stddev	3.6	7.9	234.	66.5
%RSD	.13297	.10644	.37263	.87534
#1	2713.0	7410.7	62575.	7538.9
#2	2705.8	7396.0	62678.	7671.7
#3	2709.0	7408.2	63022.	7597.2

Zoom In Zoom Out

Sample Name: FA35800-7 Acquired: 8/2/2016 17:05:47 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0006	50.72	.0097	.0922	.0004	.4372	-.0002	.0017	.0475	.0184
Stddev	.0001	.05	.0006	.0002	.0000	.0014	.0000	.0000	.0005	.0004
%RSD	20.97	.1037	6.303	.1826	3.164	.3246	2.355	2.262	1.001	1.988
#1	.0005	50.71	.0102	.0920	.0004	.4362	-.0002	.0017	.0474	.0182
#2	.0007	50.78	.0100	.0923	.0004	.4366	-.0002	.0017	.0471	.0182
#3	.0006	50.68	.0090	.0922	.0004	.4388	-.0002	.0016	.0480	.0188

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	26.57	.7059	.9868	.0711	.0018	.1190	.0151	.0287	-.0001	-.0022
Stddev	.05	.0087	.0172	.0001	.0001	.0085	.0001	.0004	.0008	.0016
%RSD	.1946	1.239	1.740	.1667	8.412	7.121	.7404	1.374	613.7	72.35
#1	26.52	.7159	.9766	.0712	.0018	.1099	.0152	.0291	.0003	-.0033
#2	26.62	.7016	1.007	.0710	.0019	.1267	.0151	.0285	.0004	-.0004
#3	26.57	.7001	.9771	.0709	.0016	.1204	.0150	.0285	-.0010	-.0030

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.609	.0183	.0066	.5107	-.0027	.0701	.0263
Stddev	.001	.0002	.0000	.0012	.0007	.0002	.0001
%RSD	.0428	.8302	.5851	.2318	25.00	.2540	.3767
#1	1.609	.0182	.0066	.5114	-.0030	.0701	.0264
#2	1.608	.0184	.0066	.5114	-.0019	.0699	.0263
#3	1.608	.0181	.0065	.5093	-.0031	.0703	.0262

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2772.8	6770.4	58832.	6926.4
Stddev	11.1	3.4	247.	20.9
%RSD	.39967	.05032	.41953	.30106
#1	2760.7	6767.8	58739.	6912.5
#2	2782.4	6769.1	59112.	6916.3
#3	2775.4	6774.3	58645.	6950.4

Zoom In Zoom Out

Sample Name: FA35800-8 Acquired: 8/2/2016 17:09:52 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0026	250.9	.0156	.2922	.0011	.4142	-.0006	.0056	.2048	.0755
Stddev	.0002	2.0	.0009	.0007	.0001	.0039	.0000	.0001	.0007	.0004
%RSD	7.585	.7999	6.034	.2347	6.871	.9379	5.928	1.175	.3336	.5448
#1	.0028	248.6	.0152	.2927	.0010	.4167	-.0006	.0056	.2052	.0753
#2	.0024	252.2	.0149	.2924	.0012	.4162	-.0006	.0056	.2040	.0754
#3	.0027	251.9	.0166	.2914	.0011	.4097	-.0005	.0057	.2051	.0760

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	49.27	2.062	2.649	.0722	.0072	.1627	.0381	.0705	-.0023	-.0012
Stddev	.05	.034	.015	.0002	.0000	.0033	.0002	.0015	.0010	.0006
%RSD	.1000	1.661	.5676	.2377	.6707	2.010	.4249	2.123	42.66	46.90
#1	49.32	2.047	2.639	.0724	.0072	.1641	.0382	.0722	-.0017	-.0016
#2	49.28	2.102	2.642	.0720	.0071	.1590	.0381	.0694	-.0017	-.0014
#3	49.22	2.038	2.666	.0722	.0072	.1651	.0379	.0699	-.0034	-.0006

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.639	.0211	.0159	.5987	-.0042	.3576	.0739
Stddev	.001	.0003	.0001	.0009	.0006	.0007	.0002
%RSD	.0463	1.339	.8430	.1467	14.58	.2014	.2443
#1	1.639	.0210	.0160	.5994	-.0043	.3578	.0741
#2	1.640	.0209	.0160	.5977	-.0048	.3568	.0740
#3	1.640	.0214	.0158	.5989	-.0036	.3582	.0737

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2614.6	7253.8	59878.	7519.0
Stddev	4.9	13.6	275.	49.6
%RSD	.18560	.18700	.45882	.65941
#1	2610.0	7239.1	59724.	7513.1
#2	2619.6	7265.8	60195.	7571.2
#3	2614.0	7256.6	59714.	7472.6

Zoom In Zoom Out

Sample Name: FA35800-9 Acquired: 8/2/2016 17:14:03 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0001	13.59	.0048	.0343	.0000	.6849	-.0001	.0000	.0373	.0060
Stddev	.0004	.04	.0003	.0001	.000	.0017	.0000	.0000	.0002	.0002
%RSD	331.6	.2816	6.920	.4015	152.6	.2468	24.02	159.7	.5700	2.933
#1	-.0002	13.63	.0050	.0344	.0000	.6851	-.0001	.0001	.0370	.0059
#2	.0000	13.57	.0044	.0342	.0000	.6865	-.0001	.0000	.0375	.0058
#3	.0005	13.57	.0049	.0344	.0000	.6831	-.0001	.0000	.0372	.0061

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	3.080	.4616	.3512	.0402	.0006	.1466	.0039	.0150	.0000	-.0028
Stddev	.022	.0181	.0096	.0002	.0001	.0030	.0001	.0002	.0004	.0017
%RSD	.7061	3.930	2.731	.4625	14.51	2.026	2.441	1.459	1177.	59.26
#1	3.100	.4500	.3490	.0404	.0007	.1454	.0039	.0153	-.0001	-.0009
#2	3.057	.4523	.3618	.0400	.0005	.1500	.0038	.0148	.0005	-.0037
#3	3.083	.4825	.3430	.0402	.0007	.1445	.0039	.0151	-.0002	-.0040

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.272	.0183	.0044	.4595	-.0021	.0185	.0107
Stddev	.003	.0002	.0001	.0006	.0009	.0003	.0001
%RSD	.2142	.8680	1.139	.1348	44.08	1.414	.9657
#1	1.270	.0182	.0044	.4592	-.0013	.0188	.0106
#2	1.272	.0182	.0044	.4591	-.0018	.0185	.0107
#3	1.275	.0185	.0045	.4602	-.0031	.0182	.0108

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2836.6	6721.7	59202.	6913.4
Stddev	4.6	7.6	59.	72.4
%RSD	.16251	.11378	.09951	1.0474
#1	2831.3	6723.4	59148.	6829.8
#2	2839.1	6728.4	59265.	6953.9
#3	2839.5	6713.4	59194.	6956.6

Zoom In Zoom Out

Sample Name: FA35800-10 Acquired: 8/2/2016 17:18:09 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0022	395.3	.0202	.5960	.0021	1.972	-.0006	.0117	.6700	.1759
Stddev	.0001	2.8	.0007	.0017	.0001	.006	.0000	.0001	.0028	.0006
%RSD	4.684	.6984	3.326	.2862	3.260	.3173	3.130	.9828	.4193	.3564
#1	.0022	394.6	.0210	.5970	.0021	1.969	-.0007	.0115	.6730	.1766
#2	.0021	392.9	.0199	.5969	.0020	1.968	-.0006	.0118	.6696	.1754
#3	.0023	398.3	.0197	.5940	.0021	1.979	-.0006	.0117	.6675	.1757

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	54.89	4.384	6.384	.2026	.0067	.2514	.0961	.1422	-.0014	-.0021
Stddev	.12	.022	.036	.0003	.0001	.0052	.0003	.0010	.0009	.0008
%RSD	.2216	.4939	.5603	.1459	1.049	2.072	.2984	.6863	63.74	37.36
#1	54.90	4.376	6.411	.2029	.0068	.2456	.0958	.1434	-.0023	-.0018
#2	55.01	4.408	6.343	.2025	.0066	.2529	.0963	.1417	-.0013	-.0015
#3	54.76	4.367	6.398	.2023	.0067	.2557	.0962	.1417	-.0005	-.0030

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.651	.0233	.0390	1.170	-.0043	.2559	.1920
Stddev	.001	.0003	.0001	.001	.0001	.0008	.0004
%RSD	.0720	1.257	.1325	.1082	2.459	.3064	.2312
#1	1.649	.0236	.0390	1.172	-.0042	.2563	.1925
#2	1.651	.0231	.0391	1.170	-.0043	.2550	.1919
#3	1.652	.0232	.0390	1.169	-.0044	.2564	.1916

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2535.4	7394.5	60262.	7832.6
Stddev	11.0	19.2	374.	14.8
%RSD	.43471	.26009	.62072	.18939
#1	2528.3	7375.7	60142.	7847.7
#2	2548.1	7414.1	59962.	7831.9
#3	2529.8	7393.5	60681.	7818.1

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 17:22:17 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2468	39.25	1.952	2.050	1.990	39.00	1.999	1.994	1.980	1.997
Stddev	.0008	.11	.003	.003	.004	.07	.002	.001	.002	.001
%RSD	.3220	.2816	.1409	.1525	.1932	.1842	.0881	.0605	.0997	.0580
#1	.2471	39.36	1.954	2.053	1.993	39.05	2.001	1.995	1.981	1.998
#2	.2459	39.27	1.954	2.051	1.990	39.03	1.997	1.993	1.978	1.997
#3	.2474	39.14	1.949	2.047	1.986	38.92	2.000	1.993	1.982	1.996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.15	40.59	38.69	2.029	1.940	39.82	1.985	1.975	1.958	1.963
Stddev	.13	.17	.25	.001	.003	.06	.001	.005	.003	.006
%RSD	.3284	.4110	.6453	.0712	.1711	.1618	.0273	.2373	.1746	.3251
#1	39.29	40.77	38.94	2.029	1.937	39.85	1.985	1.977	1.958	1.961
#2	39.14	40.55	38.69	2.027	1.941	39.87	1.985	1.970	1.962	1.970
#3	39.03	40.44	38.44	2.030	1.943	39.75	1.984	1.979	1.955	1.958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.573	1.955	2.047	1.986	2.004	1.959	1.990
Stddev	.001	.003	.004	.001	.006	.003	.002
%RSD	.0709	.1300	.1781	.0446	.3231	.1533	.1137
#1	1.573	1.957	2.050	1.987	2.006	1.959	1.991
#2	1.574	1.956	2.048	1.985	1.996	1.957	1.987
#3	1.572	1.952	2.043	1.985	2.009	1.963	1.990
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 17:22:17 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2512.4	6311.6	55320.	6662.7
Stddev	8.2	9.7	227.	34.6
%RSD	.32825	.15433	.40984	.51930
#1	2512.4	6319.5	55535.	6624.1
#2	2520.7	6314.6	55341.	6690.8
#3	2504.2	6300.7	55083.	6673.1

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 17:26:14 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0183	.0000	.0003	.0004	.0038	.0001	.0001	.0001
Stddev	.0001	.0018	.0007	.0001	.0001	.0017	.0000	.0001	.0000
%RSD	44.44	9.588	1719.	43.23	20.35	44.43	45.59	145.8	28.52
#1	.0001	.0163	.0004	.0003	.0005	.0032	.0001	.0001	.0001
#2	.0003	.0193	-.0008	.0004	.0004	.0026	.0001	.0000	.0001
#3	.0004	.0194	.0005	.0002	.0003	.0058	.0000	.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0214	.0411	.0202	.0003	F.0014	.0301	.0002	.0002
Stddev	.0001	.0067	.0159	.0100	.0000	.0004	.0074	.0001	.0008
%RSD	33.09	31.36	38.77	49.50	2.576	30.45	24.75	57.95	410.8
#1	.0003	.0291	.0400	.0086	.0003	.0019	.0217	.0004	.0008
#2	.0001	.0181	.0576	.0259	.0003	.0014	.0359	.0001	.0004
#3	.0003	.0169	.0258	.0260	.0003	.0010	.0327	.0002	-.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	-.0006	-.0010	.0001	.0004	.0006	-.0006	.0002	.0001
Stddev	.0014	.0009	.0004	.0002	.0000	.0000	.0002	.0001	.0000
%RSD	107.1	147.6	40.95	213.3	2.085	6.838	40.15	71.75	31.77
#1	.0011	-.0005	-.0008	.0003	.0004	.0006	-.0004	.0002	.0001
#2	.0028	-.0015	-.0007	-.0001	.0004	.0006	-.0005	.0003	.0002
#3	.0000	.0003	-.0014	.0001	.0004	.0006	-.0009	.0000	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 17:26:14 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2881.6	6494.4	57006.	6641.6
Stddev	6.7	6.8	180.	58.5
%RSD	.23420	.10507	.31563	.88006
#1	2889.2	6496.0	56862.	6669.6
#2	2876.4	6500.3	56948.	6574.5
#3	2879.0	6486.9	57208.	6680.8

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: FA35800-11 Acquired: 8/2/2016 17:30:25 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0011	142.5	.0184	.2245	.0017	.9378	-.0007	.0136	.1005	.0475
Stddev	.0003	.4	.0004	.0008	.0000	.0038	.0001	.0000	.0002	.0004
%RSD	28.56	.2708	2.171	.3565	2.150	.4038	12.60	.1850	.1785	.9029
#1	.0008	142.9	.0182	.2254	.0016	.9410	-.0007	.0136	.1003	.0479
#2	.0015	142.3	.0188	.2243	.0017	.9388	-.0008	.0136	.1006	.0473
#3	.0011	142.2	.0181	.2238	.0017	.9336	-.0006	.0136	.1005	.0472

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	73.19	2.253	3.058	.1260	.0056	.2923	.0414	.0571	.0003	-.0010
Stddev	.31	.022	.012	.0005	.0002	.0040	.0002	.0002	.0006	.0002
%RSD	.4303	.9759	.4043	.3642	3.223	1.354	.4515	.3296	213.9	17.59
#1	73.51	2.248	3.072	.1264	.0055	.2960	.0416	.0569	.0008	-.0010
#2	73.18	2.278	3.049	.1255	.0055	.2881	.0414	.0573	.0005	-.0008
#3	72.88	2.234	3.054	.1260	.0058	.2929	.0412	.0571	-.0004	-.0011

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.264	.0193	.0162	.7940	-.0022	.1709	.0823
Stddev	.003	.0001	.0001	.0007	.0004	.0008	.0002
%RSD	.2005	.4036	.7425	.0918	18.85	.4454	.2546
#1	1.267	.0193	.0163	.7948	-.0025	.1717	.0825
#2	1.262	.0194	.0160	.7941	-.0018	.1703	.0821
#3	1.264	.0193	.0162	.7933	-.0024	.1706	.0823

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2674.2	7003.5	59221.	7193.5
Stddev	3.0	6.0	331.	60.6
%RSD	.11222	.08528	.55904	.84189
#1	2671.3	6996.6	58882.	7124.7
#2	2673.8	7007.1	59544.	7238.8
#3	2677.3	7006.8	59236.	7216.9

Zoom In Zoom Out

Sample Name: FA35800-12 Acquired: 8/2/2016 17:34:27 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	.0067	F562.1	.0186	1.024	.0023	1.369	-.0008	.0114
Stddev	.0002	4.9	.0009	.003	.0001	.007	.0001	.0001
%RSD	2.532	.8783	4.816	.2878	2.436	.5010	8.237	.5974
#1	.0066	561.7	.0181	1.021	.0022	1.362	-.0007	.0114
#2	.0066	567.3	.0196	1.025	.0023	1.368	-.0007	.0115
#3	.0069	557.4	.0181	1.027	.0022	1.375	-.0008	.0113

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	.4725	.2060	84.18	3.868	4.393	.1630	.0192	.2119
Stddev	.0009	.0003	.16	.008	.027	.0002	.0002	.0013
%RSD	.1933	.1374	.1912	.2012	.6109	.1438	.7925	.6286
#1	.4729	.2060	84.12	3.864	4.411	.1630	.0191	.2133
#2	.4733	.2057	84.06	3.863	4.362	.1627	.0194	.2118
#3	.4715	.2063	84.37	3.877	4.406	.1632	.0192	.2106

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	.0708	.1137	-.0013	-.0026	1.580	.0320	.0330	.5400
Stddev	.0001	.0012	.0004	.0018	.003	.0008	.0001	.0007
%RSD	.1460	1.052	32.35	69.81	.1557	2.396	.3713	.1246
#1	.0709	.1147	-.0013	-.0012	1.578	.0311	.0329	.5406
#2	.0707	.1124	-.0009	-.0046	1.583	.0324	.0330	.5393
#3	.0707	.1142	-.0017	-.0019	1.581	.0325	.0332	.5402

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	F-.0118	.8577	.1404
Stddev	.0013	.0016	.0003
%RSD	10.79	.1810	.1983
#1	-.0133	.8585	.1407
#2	-.0113	.8587	.1402
#3	-.0109	.8559	.1404

Zoom In Zoom Out

Sample Name: FA35800-12 Acquired: 8/2/2016 17:34:27 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2489.6	7846.3	62870.	8427.6
Stddev	3.7	10.7	391.	76.7
%RSD	.14890	.13671	.62265	.91022
#1	2485.4	7838.9	62419.	8350.5
#2	2491.6	7841.5	63124.	8503.9
#3	2491.9	7858.6	63066.	8428.3

Zoom In Zoom Out

Sample Name: FA35800-13 Acquired: 8/2/2016 17:38:35 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0019	114.4	.2332	.1052	.0011	2.778	-.0005	.0043	1.921	.0544
Stddev	.0003	.3	.0010	.0004	.0000	.004	.0000	.0001	.008	.0004
%RSD	15.45	.2292	.4217	.4264	.7767	.1464	3.575	2.270	.4371	.6660
#1	.0019	114.5	.2323	.1056	.0011	2.775	-.0005	.0042	1.927	.0542
#2	.0021	114.1	.2343	.1047	.0011	2.776	-.0005	.0044	1.925	.0543
#3	.0015	114.5	.2329	.1052	.0011	2.783	-.0005	.0042	1.911	.0548

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	82.00	1.900	1.777	.1504	.0063	.2789	.0221	.0362	.0027	-.0002
Stddev	.33	.018	.009	.0005	.0000	.0065	.0001	.0003	.0000	.0017
%RSD	.3992	.9315	.4839	.3538	.5214	2.334	.4288	.7148	1.457	1122.
#1	82.32	1.882	1.778	.1504	.0063	.2813	.0222	.0360	.0028	-.0010
#2	81.66	1.917	1.767	.1509	.0062	.2839	.0221	.0361	.0027	.0018
#3	82.03	1.901	1.784	.1498	.0063	.2716	.0220	.0365	.0027	-.0013

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.739	.0210	.0261	.8117	-.0028	.2106	.0576
Stddev	.001	.0003	.0001	.0009	.0004	.0008	.0001
%RSD	.0646	1.290	.2831	.1064	12.71	.3587	.2294
#1	1.741	.0207	.0261	.8116	-.0030	.2111	.0577
#2	1.739	.0213	.0262	.8127	-.0024	.2109	.0575
#3	1.738	.0210	.0261	.8110	-.0031	.2097	.0576

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2694.4	6889.0	59552.	7192.8
Stddev	2.7	5.9	325.	80.8
%RSD	.09893	.08495	.54490	1.1237
#1	2695.9	6883.0	59392.	7203.2
#2	2691.3	6889.1	59338.	7268.0
#3	2696.0	6894.7	59925.	7107.3

Zoom In Zoom Out

Sample Name: FA35800-14 Acquired: 8/2/2016 17:42:37 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0054	486.2	.0233	.4475	.0017	.9895	-.0007	.0105	.3937	.1544
Stddev	.0001	2.0	.0006	.0007	.0000	.0062	.0001	.0000	.0013	.0005
%RSD	2.211	.4078	2.699	.1469	.9183	.6267	12.12	.3680	.3233	.3090
#1	.0053	487.2	.0227	.4475	.0017	.9929	-.0006	.0105	.3941	.1544
#2	.0055	483.9	.0233	.4468	.0017	.9823	-.0008	.0105	.3923	.1549
#3	.0053	487.5	.0240	.4481	.0017	.9931	-.0008	.0105	.3948	.1540

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	107.0	3.017	3.807	.1333	.0127	.1961	.0663	.1157	-.0009	-.0024
Stddev	.3	.004	.017	.0004	.0002	.0026	.0002	.0020	.0004	.0008
%RSD	.3052	.1420	.4554	.3173	1.772	1.350	.3634	1.738	49.16	33.88
#1	106.7	3.012	3.812	.1337	.0128	.1939	.0661	.1151	-.0013	-.0015
#2	106.8	3.019	3.787	.1329	.0125	.1991	.0663	.1180	-.0005	-.0030
#3	107.3	3.019	3.821	.1333	.0129	.1954	.0666	.1141	-.0008	-.0028

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	2.013	.0253	.0234	.8423	-.0088	.6579	.1203
Stddev	.004	.0001	.0000	.0024	.0019	.0007	.0004
%RSD	.1782	.4620	.1557	.2863	21.24	.1040	.3184
#1	2.016	.0254	.0234	.8450	-.0069	.6586	.1199
#2	2.009	.0252	.0234	.8403	-.0106	.6573	.1206
#3	2.014	.0253	.0235	.8417	-.0089	.6578	.1204

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2523.1	7501.4	61196.	8095.7
Stddev	7.0	8.1	140.	62.3
%RSD	.27577	.10807	.22912	.77008
#1	2527.2	7509.4	61073.	8157.6
#2	2515.1	7501.8	61349.	8096.6
#3	2527.0	7493.2	61166.	8032.9

Zoom In Zoom Out

Sample Name: FA35800-15 Acquired: 8/2/2016 17:46:46 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0072	F540.9	.0321	.5434	.0018	1.195	-.0006	.0108	.4710
Stddev	.0001	7.9	.0004	.0011	.0000	.004	.0000	.0002	.0017
%RSD	1.846	1.461	1.312	.2114	2.243	.3466	4.665	1.642	.3627
#1	.0072	532.2	.0325	.5447	.0018	1.191	-.0006	.0106	.4726
#2	.0073	547.7	.0317	.5428	.0018	1.199	-.0007	.0110	.4714
#3	.0070	542.8	.0322	.5427	.0017	1.196	-.0006	.0109	.4692

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)
Avg	.1674	132.1	3.091	4.099	.1539	.0174	.2270	.0765	.1350
Stddev	.0003	.2	.007	.008	.0005	.0001	.0069	.0002	.0038
%RSD	.1773	.1246	.2249	.1883	.3498	.8165	3.049	.3159	2.808
#1	.1676	132.1	3.083	4.101	.1545	.0172	.2227	.0762	.1393
#2	.1671	131.9	3.095	4.091	.1535	.0174	.2350	.0765	.1328
#3	.1675	132.2	3.095	4.106	.1536	.0175	.2234	.0767	.1328

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	-.0015	-.0023	1.944	.0253	.0306	.7903	-.0083	.9073	.1200
Stddev	.0005	.0019	.003	.0002	.0000	.0011	.0005	.0025	.0004
%RSD	34.63	83.39	.1425	.7687	.0908	.1454	5.922	.2758	.3327
#1	-.0012	-.0025	1.945	.0254	.0306	.7916	-.0080	.9101	.1204
#2	-.0022	-.0003	1.941	.0251	.0307	.7898	-.0089	.9065	.1199
#3	-.0012	-.0040	1.946	.0254	.0307	.7894	-.0081	.9053	.1196

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2510.1	7333.5	59529.	7929.8
Stddev	5.2	2.5	309.	45.0
%RSD	.20729	.03394	.51982	.56767
#1	2508.3	7332.3	59183.	7961.4
#2	2506.0	7336.4	59622.	7949.7
#3	2515.9	7331.8	59781.	7878.2

Zoom In Zoom Out

Sample Name: FA35800-16 Acquired: 8/2/2016 17:50:55 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0010	80.61	.0145	.2567	.0012	9.078	-.0001	.0045	.0577	.0335
Stddev	.0002	.15	.0005	.0002	.0000	.015	.0000	.0001	.0004	.0001
%RSD	15.75	.1906	3.784	.0660	1.510	.1692	15.96	1.924	.7322	.2250
#1	.0008	80.45	.0151	.2565	.0013	9.060	-.0001	.0044	.0582	.0334
#2	.0011	80.63	.0141	.2567	.0013	9.084	-.0001	.0045	.0574	.0335
#3	.0011	80.75	.0142	.2568	.0012	9.089	-.0001	.0046	.0576	.0334

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	38.93	2.165	2.542	.6480	.0050	.2062	.0283	.0643	.0001	.0003
Stddev	.14	.013	.014	.0020	.0001	.0049	.0001	.0003	.0008	.0004
%RSD	.3511	.5827	.5518	.3092	2.336	2.401	.4861	.4519	786.3	157.6
#1	38.81	2.179	2.557	.6503	.0049	.2103	.0284	.0641	-.0002	.0002
#2	39.08	2.163	2.542	.6467	.0052	.2075	.0282	.0646	.0010	-.0001
#3	38.88	2.154	2.529	.6470	.0051	.2007	.0283	.0643	-.0005	.0007

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.846	.0187	.0582	.8592	-.0025	.0921	.0833
Stddev	.003	.0002	.0001	.0009	.0011	.0004	.0003
%RSD	.1333	.9307	.2040	.1039	43.55	.4102	.3805
#1	1.844	.0185	.0581	.8603	-.0016	.0925	.0830
#2	1.848	.0188	.0583	.8586	-.0037	.0919	.0835
#3	1.847	.0187	.0582	.8588	-.0022	.0919	.0836

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2700.0	6706.9	58823.	7087.2
Stddev	5.5	17.7	423.	47.6
%RSD	.20326	.26417	.71934	.67101
#1	2696.6	6723.5	58334.	7092.4
#2	2697.2	6688.3	59053.	7037.2
#3	2706.3	6709.0	59081.	7131.9

Zoom In Zoom Out

Sample Name: FA35800-17 Acquired: 8/2/2016 17:55:01 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0031	113.2	.0372	.1666	.0012	1.549	-.0003	.0034	.1210	.0894
Stddev	.0002	.3	.0005	.0007	.0001	.006	.0001	.0000	.0006	.0005
%RSD	5.327	.2840	1.335	.3964	6.770	.3947	18.05	1.342	.5099	.5070
#1	.0029	113.5	.0370	.1670	.0011	1.551	-.0003	.0035	.1209	.0896
#2	.0031	113.3	.0368	.1670	.0012	1.554	-.0004	.0035	.1204	.0898
#3	.0033	112.9	.0377	.1658	.0012	1.542	-.0003	.0034	.1216	.0889

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	103.2	2.146	1.818	.1791	.0098	.1880	.0201	.0746	-.0014	-.0014
Stddev	.3	.023	.015	.0002	.0001	.0048	.0002	.0005	.0005	.0006
%RSD	.2977	1.090	.8242	.0858	.6046	2.537	1.215	.6108	33.65	43.80
#1	103.3	2.170	1.824	.1792	.0097	.1900	.0200	.0740	-.0018	-.0014
#2	103.5	2.123	1.829	.1791	.0098	.1915	.0200	.0747	-.0009	-.0008
#3	102.9	2.145	1.801	.1789	.0098	.1826	.0204	.0749	-.0015	-.0019

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	2.435	.0249	.0247	.5869	-.0051	.4092	.0509
Stddev	.003	.0005	.0002	.0014	.0013	.0005	.0001
%RSD	.1211	2.002	.6502	.2303	25.71	.1104	.2363
#1	2.438	.0254	.0248	.5884	-.0042	.4087	.0510
#2	2.432	.0244	.0248	.5861	-.0044	.4095	.0508
#3	2.435	.0249	.0245	.5861	-.0066	.4094	.0509

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2691.7	7300.3	63421.	7723.6
Stddev	1.4	6.2	81.	21.2
%RSD	.05312	.08451	.12834	.27475
#1	2692.7	7298.8	63348.	7711.6
#2	2690.1	7307.1	63509.	7711.1
#3	2692.4	7295.0	63406.	7748.1

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: FA35800-18 Acquired: 8/2/2016 17:59:04 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0042	242.6	.0618	.4206	.0030	6.291	.0005	.0069	.2226	.0459
Stddev	.0001	.6	.0007	.0002	.0000	.030	.0006	.0000	.0017	.0007
%RSD	3.563	.2595	1.120	.0460	1.308	.4828	140.8	.3190	.7528	1.461
#1	.0043	242.6	.0625	.4207	.0030	6.276	-.0001	.0069	.2245	.0465
#2	.0040	242.0	.0611	.4204	.0030	6.326	.0002	.0069	.2218	.0460
#3	.0043	243.2	.0617	.4208	.0029	6.271	.0012	.0069	.2214	.0452

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	271.7	3.136	3.108	.2573	.0112	.2117	.0506	.1122	.0001	.0092
Stddev	5.2	.033	.013	.0009	.0001	.0038	.0005	.0012	.0006	.0009
%RSD	1.901	1.064	.4044	.3439	.8771	1.809	1.003	1.047	642.5	10.21
#1	276.2	3.128	3.113	.2583	.0113	.2073	.0511	.1124	-.0006	.0086
#2	272.9	3.173	3.118	.2568	.0111	.2136	.0504	.1133	.0007	.0088
#3	266.0	3.107	3.094	.2567	.0111	.2142	.0502	.1110	.0002	.0103

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.855	.0219	.0345	.6374	-.0036	.4511	.0529
Stddev	.002	.0003	.0001	.0018	.0015	.0034	.0001
%RSD	.0859	1.458	.4228	.2848	42.14	.7556	.1918
#1	1.855	.0216	.0345	.6392	-.0030	.4547	.0528
#2	1.854	.0218	.0346	.6375	-.0054	.4508	.0528
#3	1.857	.0222	.0343	.6355	-.0026	.4479	.0530

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2636.9	7215.8	61329.	7741.2
Stddev	5.3	9.5	420.	32.8
%RSD	.20038	.13109	.68549	.42398
#1	2634.4	7211.4	60888.	7777.4
#2	2633.3	7209.4	61375.	7713.4
#3	2642.9	7226.7	61725.	7732.9

Zoom In Zoom Out

Sample Name: FA35800-19 Acquired: 8/2/2016 18:03:22 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0050	296.2	.0663	.5070	.0031	7.710	.0013	.0082	.2800	.0559
Stddev	.0001	2.0	.0008	.0006	.0000	.002	.0002	.0001	.0005	.0004
%RSD	2.970	.6607	1.179	.1145	.3346	.0316	12.71	1.805	.1761	.7606
#1	.0049	296.4	.0666	.5075	.0031	7.713	.0012	.0083	.2796	.0564
#2	.0051	294.1	.0654	.5064	.0031	7.708	.0013	.0080	.2800	.0558
#3	.0051	298.0	.0668	.5071	.0031	7.709	.0015	.0083	.2805	.0556

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	288.6	3.745	3.572	.2015	.0141	.2910	.0603	.1149	.0008	.0097
Stddev	2.3	.017	.008	.0002	.0002	.0045	.0002	.0004	.0010	.0021
%RSD	.8010	.4445	.2204	.0949	1.767	1.531	.3942	.3705	121.8	21.44
#1	291.1	3.741	3.564	.2013	.0144	.2947	.0605	.1145	-.0003	.0083
#2	288.1	3.764	3.579	.2016	.0141	.2860	.0601	.1150	.0016	.0121
#3	286.5	3.731	3.573	.2016	.0139	.2921	.0602	.1153	.0011	.0087

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.857	.0237	.0418	.6011	-.0036	.5627	.0633
Stddev	.002	.0004	.0001	.0004	.0014	.0012	.0002
%RSD	.1102	1.518	.1979	.0716	39.83	.2070	.2989
#1	1.859	.0241	.0418	.6015	-.0030	.5613	.0633
#2	1.856	.0235	.0418	.6010	-.0026	.5634	.0631
#3	1.855	.0235	.0419	.6007	-.0053	.5633	.0635

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2633.8	6958.5	59273.	7528.1
Stddev	3.0	2.5	96.	44.4
%RSD	.11534	.03657	.16173	.58999
#1	2637.1	6959.0	59363.	7569.4
#2	2631.1	6960.7	59285.	7533.9
#3	2633.3	6955.7	59172.	7481.1

Zoom In Zoom Out

Sample Name: FA35800-20 Acquired: 8/2/2016 18:07:40 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0125	152.8	.1802	.0098	.0028	.6834	.0149	-.0162	.5707
Stddev	.0011	.3	.0017	.0005	.0004	.0046	.0006	.0005	.0033
%RSD	8.640	.2034	.9267	5.480	14.09	.6663	3.952	2.986	.5765
#1	.0137	153.2	.1789	.0103	.0023	.6856	.0153	-.0156	.5670
#2	.0119	152.8	.1797	.0098	.0030	.6782	.0152	-.0166	.5734
#3	.0119	152.6	.1821	.0093	.0030	.6864	.0142	-.0163	.5716

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.1706	F2024.	.4527	-.0044	.4078	.0349	.2626	.0315	.2899
Stddev	.0008	4.	.0288	.1330	.0020	.0007	.0124	.0004	.0040
%RSD	.4471	.2070	6.355	3012.	.4937	2.000	4.711	1.213	1.378
#1	.1710	2026.	.4811	-.0705	.4055	.0357	.2660	.0318	.2888
#2	.1697	2019.	.4236	.1487	.4087	.0348	.2489	.0311	.2943
#3	.1711	2027.	.4535	-.0914	.4092	.0343	.2730	.0317	.2866

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0071	.0476	2.549	.0356	.0218	1.208	-.0014	.6162	.0720
Stddev	.0070	.0062	.003	.0004	.0003	.004	.0038	.0016	.0004
%RSD	98.85	13.03	.1017	1.070	1.500	.3611	270.7	.2595	.5799
#1	.0080	.0526	2.551	.0352	.0221	1.203	.0000	.6144	.0724
#2	-.0003	.0496	2.546	.0356	.0219	1.210	.0015	.6173	.0716
#3	.0137	.0407	2.551	.0360	.0215	1.211	-.0057	.6169	.0720

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2789.9	6314.7	55762.	6761.9
Stddev	2.1	4.4	303.	32.3
%RSD	.07673	.07044	.54364	.47826
#1	2787.5	6309.6	56082.	6724.8
#2	2790.6	6316.3	55724.	6784.1
#3	2791.7	6318.0	55480.	6776.7

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 18:11:53 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2479	39.57	2.002	2.061	1.962	39.26	2.016	2.015	1.999	1.990
Stddev	.0008	.10	.001	.004	.004	.07	.001	.001	.005	.006
%RSD	.3176	.2549	.0630	.2102	.2006	.1899	.0580	.0354	.2605	.3106
#1	.2470	39.45	2.001	2.057	1.958	39.18	2.015	2.015	1.995	1.984
#2	.2481	39.64	2.003	2.060	1.963	39.32	2.015	2.014	1.997	1.992
#3	.2485	39.61	2.004	2.065	1.966	39.28	2.017	2.015	2.005	1.996

Check ? Chk PassChk PassChk PassChk PassChk PassChk PassChk PassChk PassChk PassChk Pass
Value
Range

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.64	40.37	38.30	2.017	1.971	40.34	2.026	1.971	2.009	2.015
Stddev	.15	.08	.17	.003	.003	.09	.001	.002	.002	.002
%RSD	.3831	.1893	.4496	.1647	.1287	.2141	.0682	.0881	.1172	.0897
#1	38.47	40.28	38.10	2.013	1.968	40.25	2.027	1.971	2.006	2.017
#2	38.69	40.41	38.39	2.018	1.971	40.42	2.024	1.969	2.010	2.013
#3	38.76	40.42	38.40	2.019	1.973	40.34	2.026	1.972	2.010	2.014

Check ? Chk PassChk PassChk PassChk PassChk PassChk PassChk PassChk PassChk PassChk Pass
Value
Range

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.612	2.015	2.005	1.966	1.991	1.967	2.005
Stddev	.001	.001	.050	.003	.001	.004	.001
%RSD	.0490	.0537	2.472	.1669	.0271	.2200	.0689
#1	1.612	2.016	2.000	1.962	1.991	1.963	2.005
#2	1.613	2.014	2.057	1.968	1.992	1.967	2.004
#3	1.612	2.014	1.959	1.968	1.991	1.972	2.007

Check ? None Chk PassChk PassChk PassChk PassChk PassChk Pass
Value
Range

7.1

7

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 18:11:53 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2475.4	6134.4	55163.	6730.3
Stddev	4.3	6.5	202.	51.2
%RSD	.17171	.10521	.36598	.76101
#1	2473.2	6133.8	55367.	6784.8
#2	2480.3	6141.2	55160.	6683.2
#3	2472.6	6128.3	54963.	6722.8

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 18:15:59 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0039	-.0006	.0000	.0003	.0005	.0001	.0001
Stddev	.0002	.0137	.0002	.0001	.0000	.0011	.0000	.0001
%RSD	98.88	353.3	38.58	426.7	5.038	221.3	1.567	86.90
#1	.0001	.0186	-.0003	-.0001	.0003	-.0008	.0001	.0002
#2	.0001	-.0084	-.0006	.0001	.0003	.0012	.0001	.0000
#3	.0004	.0014	-.0008	.0001	.0003	.0011	.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0003	.0238	.0528	.0148	.0002	F.0014	.0299
Stddev	.0001	.0003	.0023	.0332	.0151	.0000	.0003	.0050
%RSD	75.49	93.82	9.728	62.86	102.1	7.495	24.86	16.77
#1	.0002	.0004	.0252	.0759	.0059	.0002	.0018	.0324
#2	.0000	.0004	.0251	.0148	.0063	.0002	.0014	.0331
#3	.0003	.0000	.0211	.0678	.0322	.0002	.0011	.0241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							.0010	
Low Limit							-.0010	

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0003	.0012	F-.0025	-.0008	.0002	.0001	.0005
Stddev	.0002	.0002	.0005	.0006	.0001	.0002	.0000	.0001
%RSD	65.51	56.39	42.30	25.17	8.997	145.3	23.14	11.42
#1	.0003	-.0002	.0014	-.0029	-.0008	.0003	.0002	.0005
#2	.0001	-.0002	.0017	-.0018	-.0009	.0003	.0001	.0004
#3	.0003	-.0005	.0007	-.0029	-.0008	-.0001	.0001	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	None	Chk Pass	Chk Pass	Chk Pass
High Limit				.0020				
Low Limit				-.0020				

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 18:15:59 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm
Avg	-.0006	.0004	.0001
Stddev	.0008	.0001	.0000
%RSD	136.6	15.27	31.99
#1	-.0014	.0005	.0001
#2	-.0005	.0004	.0001
#3	.0002	.0003	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2850.9	6339.8	57438.	6688.6
Stddev	8.5	1.7	181.	84.2
%RSD	.29836	.02616	.31566	1.2586
#1	2857.2	6341.0	57635.	6782.8
#2	2854.4	6340.4	57401.	6620.7
#3	2841.2	6337.9	57278.	6662.3

Zoom In Zoom Out

Sample Name: CRIA Acquired: 8/2/2016 18:20:12 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0093	.2241	.0089	.2138	.0051	1.045	.0052	.0532	.0105	.0260
Stddev	.0002	.0086	.0007	.0004	.0000	.004	.0000	.0000	.0003	.0002
%RSD	1.783	3.828	8.330	.1922	.6463	.3531	.9226	.0322	3.278	.9329
#1	.0091	.2165	.0083	.2138	.0051	1.045	.0051	.0532	.0101	.0260
#2	.0093	.2334	.0097	.2134	.0051	1.042	.0052	.0532	.0106	.0263
#3	.0094	.2225	.0086	.2142	.0050	1.049	.0052	.0532	.0108	.0258

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.3213	10.65	5.167	.0160	.0498	10.56	.0430	.0043	.0053	.0091
Stddev	.0026	.04	.014	.0000	.0002	.01	.0001	.0006	.0005	.0009
%RSD	.8141	.3746	.2703	.2228	.3878	.1236	.1581	13.63	9.866	10.00
#1	.3184	10.66	5.173	.0160	.0500	10.54	.0430	.0048	.0052	.0085
#2	.3217	10.61	5.151	.0160	.0498	10.56	.0430	.0037	.0049	.0102
#3	.3236	10.69	5.177	.0160	.0497	10.57	.0429	.0044	.0059	.0087

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1181	.0530	.0101	.0101	.0099	.0484	.0216
Stddev	.0003	.0002	.0000	.0001	.0003	.0002	.0000
%RSD	.2926	.3922	.4456	1.220	3.138	.3104	.0410
#1	.1182	.0528	.0101	.0100	.0096	.0485	.0216
#2	.1183	.0528	.0102	.0102	.0102	.0485	.0216
#3	.1177	.0532	.0101	.0100	.0099	.0483	.0215

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2780.9	6335.6	56630.	6722.5
Stddev	3.7	13.7	93.	58.6
%RSD	.13463	.21554	.16383	.87233
#1	2784.9	6345.5	56711.	6677.1
#2	2780.3	6341.1	56651.	6788.7
#3	2777.5	6320.0	56529.	6701.7

Zoom In Zoom Out

Sample Name: ICSA Acquired: 8/2/2016 18:24:17 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0002	499.0	-.0008	-.0003	.0000	475.5	-.0002	.0001	-.0002	.0002
Stddev	.0001	4.1	.0010	.0001	.0001	5.3	.0001	.0001	.0006	.0001
%RSD	73.01	.8143	120.1	35.55	186.4	1.124	44.15	161.8	234.0	66.85
#1	.0003	498.8	-.0007	-.0002	.0001	477.2	-.0003	.0000	-.0003	.0003
#2	.0000	495.0	-.0019	-.0003	.0001	469.5	-.0001	.0000	.0003	.0002
#3	.0002	503.1	.0001	-.0004	-.0001	479.8	-.0001	.0002	-.0008	.0001

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	181.1	.0547	496.2	.0001	.0000	.1811	.0003	.0001	.0009	.0022
Stddev	.2	.0103	1.0	.0001	.000	.0101	.0001	.0015	.0028	.0020
%RSD	.1004	18.87	.2068	69.01	56.37	5.603	48.77	1557.	309.2	92.64
#1	181.2	.0436	496.4	.0000	.0000	.1694	.0003	.0013	-.0020	.0002
#2	180.9	.0641	495.1	.0001	-.0001	.1861	.0004	.0006	.0034	.0020
#3	181.3	.0562	497.1	.0001	.0000	.1877	.0001	-.0016	.0013	.0042

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	.0510	.0020	.0020	-.0007	-.0011	.0000	-.0006
Stddev	.0005	.0002	.0005	.0001	.0006	.000	.0001
%RSD	.9499	10.64	24.01	10.08	55.42	1206.	13.59
#1	.0516	.0023	.0018	-.0006	-.0017	.0002	-.0005
#2	.0507	.0020	.0026	-.0007	-.0005	-.0002	-.0007
#3	.0507	.0019	.0017	-.0007	-.0012	.0000	-.0006

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2174.0	5646.6	48520.	6409.1
Stddev	7.6	6.4	172.	44.3
%RSD	.34997	.11382	.35432	.69085
#1	2165.4	5640.7	48362.	6419.1
#2	2176.7	5645.6	48703.	6447.5
#3	2179.9	5653.5	48493.	6360.7

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 8/2/2016 18:28:36 Type: Unk
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	F.9927	495.5	1.074	.5274	.4874	466.1	.9518	.4759	.5077
Stddev	.0022	3.6	.002	.0010	.0004	5.3	.0013	.0009	.0037
%RSD	.2215	.7176	.1507	.1834	.0865	1.129	.1349	.1938	.7234
#1	.9906	494.8	1.076	.5269	.4870	471.7	.9526	.4769	.5068
#2	.9924	499.4	1.073	.5285	.4878	465.4	.9524	.4758	.5118
#3	.9949	492.4	1.073	.5268	.4874	461.3	.9503	.4750	.5047

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)
Avg	.5344	175.9	.0703	484.8	.5052	.9989	.1984	.9567	.9583
Stddev	.0009	.3	.0159	.4	.0018	.0003	.0082	.0010	.0012
%RSD	.1700	.1534	22.63	.0854	.3612	.0327	4.121	.0998	.1205
#1	.5342	176.2	.0562	485.2	.5038	.9990	.1912	.9577	.9596
#2	.5336	175.8	.0875	484.9	.5072	.9985	.1967	.9565	.9573
#3	.5354	175.7	.0671	484.4	.5045	.9991	.2073	.9558	.9580

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	1.015	1.016	.0894	.9249	1.001	.9950	.9536	.4665	.9481
Stddev	.001	.003	.0004	.0009	.001	.0017	.0016	.0010	.0015
%RSD	.0950	.3230	.4352	.1012	.0734	.1737	.1648	.2119	.1591
#1	1.015	1.014	.0896	.9238	1.001	.9932	.9553	.4661	.9497
#2	1.015	1.015	.0897	.9254	1.0000	.9966	.9530	.4676	.9479
#3	1.013	1.020	.0889	.9254	1.000	.9953	.9523	.4658	.9467

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	2142.7	5629.2	48681.	6459.3
Stddev	2.5	1.5	308.	27.6
%RSD	.11744	.02603	.63343	.42681
#1	2142.1	5628.7	48887.	6437.0
#2	2145.4	5630.8	48327.	6490.1
#3	2140.4	5628.0	48830.	6450.7

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 18:32:51 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2473	39.62	2.000	2.062	1.969	39.28	2.008	2.009	1.993	1.988
Stddev	.0011	.07	.001	.004	.003	.04	.003	.002	.001	.002
%RSD	.4433	.1842	.0450	.2136	.1434	.1000	.1523	.1107	.0554	.0827
#1	.2470	39.57	2.000	2.057	1.970	39.30	2.012	2.011	1.992	1.990
#2	.2464	39.71	1.999	2.064	1.971	39.31	2.006	2.007	1.994	1.987
#3	.2485	39.60	2.000	2.065	1.966	39.24	2.007	2.009	1.994	1.988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.66	40.50	38.36	2.013	1.969	40.28	2.022	1.957	2.009	2.011
Stddev	.03	.02	.13	.001	.002	.02	.001	.001	.000	.004
%RSD	.0874	.0441	.3451	.0711	.1050	.0580	.0540	.0411	.0129	.1910
#1	38.63	40.49	38.44	2.013	1.968	40.31	2.023	1.956	2.008	2.010
#2	38.69	40.52	38.44	2.015	1.967	40.27	2.021	1.957	2.008	2.008
#3	38.66	40.48	38.21	2.012	1.971	40.27	2.021	1.957	2.009	2.016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.612	2.012	2.008	1.965	1.987	1.964	1.995
Stddev	.000	.003	.021	.001	.006	.002	.004
%RSD	.0240	.1465	1.047	.0399	.3155	.0762	.1771
#1	1.612	2.015	2.027	1.964	1.989	1.962	1.998
#2	1.611	2.010	1.985	1.965	1.980	1.963	1.996
#3	1.612	2.011	2.013	1.966	1.992	1.965	1.991
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/2/2016 18:32:51 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2461.1	6079.2	54607.	6637.9
Stddev	.6	5.3	95.	17.3
%RSD	.02352	.08660	.17306	.26008
#1	2461.6	6076.7	54522.	6626.5
#2	2461.2	6075.7	54591.	6629.4
#3	2460.5	6085.3	54708.	6657.7

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Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 18:36:54 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0176	-.0003	.0003	.0006	.0179	.0001	.0001	.0003
Stddev	.0001	.0066	.0007	.0001	.0001	.0019	.0001	.0001	.0004
%RSD	21.84	37.37	273.6	42.26	13.93	10.36	103.8	198.0	113.1
#1	.0006	.0206	.0005	.0002	.0005	.0158	.0002	.0002	.0003
#2	.0004	.0223	-.0003	.0002	.0006	.0185	.0001	.0000	.0007
#3	.0005	.0101	-.0010	.0004	.0007	.0194	.0000	.0000	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0291	.0520	.0225	.0004	F.0015	.0475	.0003	.0007
Stddev	.0005	.0034	.0204	.0152	.0001	.0005	.0090	.0001	.0002
%RSD	110.3	11.79	39.30	67.82	28.26	33.22	18.92	27.53	28.54
#1	.0010	.0316	.0718	.0255	.0004	.0021	.0390	.0003	.0005
#2	.0001	.0305	.0531	.0360	.0004	.0015	.0569	.0002	.0008
#3	.0002	.0252	.0310	.0059	.0002	.0010	.0466	.0004	.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	-.0001	-.0023	.0001	.0005	.0007	-.0008	.0004	.0000
Stddev	.0008	.0017	.0001	.0002	.0000	.0002	.0008	.0003	.000
%RSD	54.74	2468.	6.313	173.4	1.674	22.10	97.12	71.87	623.5
#1	.0012	.0010	-.0023	.0000	.0005	.0008	-.0013	.0004	.0001
#2	.0024	-.0020	-.0022	.0004	.0005	.0008	-.0013	.0006	.0000
#3	.0009	.0008	-.0025	.0000	.0005	.0005	.0001	.0001	-.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/2/2016 18:36:54 Type: QC
Method: 60102007_041712(v233) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2874.9	6345.8	57696.	6719.4
Stddev	8.9	14.3	388.	24.5
%RSD	.31116	.22553	.67213	.36458
#1	2883.8	6361.4	57810.	6697.6
#2	2875.1	6342.9	58014.	6745.9
#3	2865.9	6333.2	57264.	6714.9

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	X	3	V	-0.009834	0.000000	No
			Fe	-0.000001	0.000000	No
			Mg	0.000002	0.000000	No
Al 396.152 { 85}	X	1	Mo	0.035224	0.000000	No
As 189.042 {478}	X	5	Fe	-0.000092	0.000000	No
			Cr	-0.000226	0.000000	No
			Mo	-0.000017	0.000000	No
			Al	0.000004	0.000000	No
			Ca	0.000002	0.000000	No
Ba 455.403 { 74}	X	1	Fe	0.000019	0.000000	No
Be 313.042 {108}	X	2	V	0.000115	0.000000	No
			Ti	-0.000059	0.000000	No
Ca 317.933 {106}	X	None				
Cd 226.502 {449}	X	4	Fe	0.000110	0.000000	No
			Ca	0.000001	0.000000	No
			Al	-0.000001	0.000000	No
			Ti	0.000151	0.000000	No
Co 228.616 {447}	X	3	Mo	-0.001220	0.000000	No
			Ti	0.003012	0.000000	No
			Fe	0.000005	0.000000	No
Cr 267.716 {126}	X	3	Al	0.000005	0.000000	No
			Fe	0.000003	0.000000	No
			Ca	0.000002	0.000000	No
Cu 324.754 {104}	X	10	Fe	-0.000138	0.000000	No
			Ca	0.000002	0.000000	No
			Mo	0.000528	0.000000	No
			Sn	-0.000012	0.000000	No
			V	-0.000158	0.000000	No
			Ti	-0.000251	0.000000	No
			Al	0.000004	0.000000	No
			Mg	0.000002	0.000000	No
			Co	-0.000787	0.000000	No
			Cd	0.000240	0.000000	No
Fe 259.940 {130}	X	None				
In 230.606 {446}*	X	None				
K 766.490 { 44}	X	None				
Mg 279.079 {121}	X	None				
Mn 257.610 {131}	X	2	Fe	-0.000007	0.000000	No
			Mg	0.000001	0.000000	No
Mo 202.030 {467}	X	1	Fe	-0.000017	0.000000	No
Na 589.592 { 57}	X	None				
Ni 231.604 {445}	X	7	Fe	-0.000057	0.000000	No
			Co	-0.000054	0.000000	No
			Mo	0.000005	0.000000	No
			Sb	-0.000120	0.000000	No
			Al	0.000003	0.000000	No
			Be	-0.000269	0.000000	No
			Tl	0.000440	0.000000	No
Pb 220.353 {453}	X	9	Al	0.000303	0.000000	No
			Fe	-0.000102	0.000000	No
			Mo	-0.001012	0.000000	No
			Cu	0.001070	0.000000	No
			Ti	0.000036	0.000000	No
			Si	0.000071	0.000000	No
			Ca	0.000001	0.000000	No
			Cr	0.000050	0.000000	No
			Mg	0.000004	0.000000	No

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Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Sb 206.833 {463}	☒	10	Fe	0.000007	0.000000	No
			Cr	0.012140	0.000000	No
			Mo	-0.004076	0.000000	No
			V	-0.000611	0.000000	No
			Sn	-0.010736	0.000000	No
			Ti	0.000040	0.000000	No
			Ca	-0.000001	0.000000	No
			Ni	-0.000438	0.000000	No
			Mg	-0.000002	0.000000	No
			Al	0.000003	0.000000	No
Se 196.090 {472}	☒	10	Fe	-0.000045	0.000000	No
			Ca	-0.000001	0.000000	No
			Mn	0.000574	0.000000	No
			Mo	0.000111	0.000000	No
			Al	-0.000006	0.000000	No
			V	0.000000	0.000000	No
			Zn	0.000000	0.000000	No
			Sr	0.000137	0.000000	No
			As	-0.000032	0.000000	No
			Be	0.000212	0.000000	No
Si 212.412 {459}	☒	1	Mo	0.019120	0.000000	No
Sn 189.989 {477}	☒	None				
Sr 407.771 { 83}	☒	1	Ca	0.000094	0.000000	No
Ti 334.941 {101}	☒	1	Ca	-0.000007	0.000000	No
Tl 190.856 {477}	☒	11	Co	0.001145	0.000000	No
			Fe	0.000007	0.000000	No
			Al	-0.000011	0.000000	No
			Ba	-0.000051	0.000000	No
			Ti	-0.002651	0.000000	No
			Sb	0.000012	0.000000	No
			Ca	0.000003	0.000000	No
			Cr	0.000230	0.000000	No
			Mg	-0.000003	0.000000	No
			Mn	0.000818	0.000000	No
			V	-0.038621	0.000000	No
V 292.402 {115}	☒	5	Fe	0.000009	0.000000	No
			Cr	-0.002590	0.000000	No
			Mo	-0.005797	0.000000	No
			Ti	0.000364	0.000000	No
			Mn	-0.000693	0.000000	No
Y 224.306 {450}*	☒	None				
Y 360.073 { 94}*	☒	None				
Y 371.030 { 91}*	☒	None				
Zn 206.200 {463}	☒	5	Cr	-0.000965	0.000000	No
			Al	0.000005	0.000000	No
			Ca	0.000003	0.000000	No
			Fe	0.000006	0.000000	No
			As	0.001128	0.000000	No

	Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
	Ag 328.068 {103}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	-0.001150	0.561051	0.000000	1.000000
	Al 396.152 { 85}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	-0.008430	0.162836	0.000000	1.000000
	As 189.042 {478}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	-0.000326	0.235868	0.000000	1.000000
	Ba 455.403 { 74}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.009471	12.114188	0.000000	1.000000
	Be 313.042 {108}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000157	8.422128	0.000000	1.000000
	Ca 317.933 {106}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.004919	0.277835	0.000000	1.000000
	Cd 226.502 {449}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000146	4.814805	0.000000	1.000000
	Co 228.616 {447}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000406	2.347213	0.000000	1.000000
	Cr 267.716 {126}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000079	0.395110	0.000000	1.000000
	Cu 324.754 {104}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.005711	0.646107	0.000000	1.000000
	Fe 259.940 {130}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.001286	0.142411	0.000000	1.000000
	In 230.606 {446}*	8/2/2016 8:58:04	5/5/2010 12:30:54	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
	K 766.490 { 44}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	-0.000563	0.118074	0.000000	1.000000
	Mg 279.079 {121}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	-0.000421	0.023987	0.000000	1.000000
	Mn 257.610 {131}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000453	2.600781	0.000000	1.000000
	Mo 202.030 {467}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000739	1.289452	0.000000	1.000000
	Na 589.592 { 57}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.003232	0.349958	0.000000	1.000000
	Ni 231.604 {445}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000409	1.580844	0.000000	1.000000
	Pb 220.353 {453}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	-0.001349	1.136048	0.000000	1.000000
	Sb 206.833 {463}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000382	0.261869	0.000000	1.000000
	Se 196.090 {472}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	-0.000121	0.164969	0.000000	1.000000
	Si 212.412 {459}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.011893	0.510610	0.000000	1.000000
	Sn 189.989 {477}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000196	0.536498	0.000000	1.000000
	Sr 407.771 { 83}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.003805	16.007813	0.000000	1.000000
	Ti 334.941 {101}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.000897	1.690447	0.000000	1.000000
	Tl 190.856 {477}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	-0.003183	0.550894	0.000000	1.000000
	V 292.402 {115}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	-0.000249	0.617335	0.000000	1.000000
	Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
	Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
	Y 371.030 { 91}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
	Zn 206.200 {463}	8/2/2016 8:58:04	8/2/2016 8:23:05	Linear	1/Conc	0.003480	2.996447	0.000000	1.000000

	Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
							Slope	Y-int	Slope factor	Offset
	Ag 328.068 {103}	0.999993	0.000020	0.000378	0.001259	OK.	1.000000	0.000000	1	0
	Al 396.152 { 85}	0.999942	0.002824	0.008932	0.029773	OK.	1.000000	0.000000	1	0
	As 189.042 {478}	0.999809	0.000371	0.000653	0.002178	OK.	1.000000	0.000000	1	0
	Ba 455.403 { 74}	0.999902	0.013700	0.000166	0.000552	OK.	1.000000	0.000000	1	0
	Be 313.042 {108}	0.999866	0.011086	0.000069	0.000229	OK.	1.000000	0.000000	1	0
	Ca 317.933 {106}	0.999884	0.006824	0.002546	0.008487	OK.	1.000000	0.000000	1	0
	Cd 226.502 {449}	0.999876	0.006114	0.000048	0.000161	OK.	1.000000	0.000000	1	0
	Co 228.616 {447}	0.999900	0.002681	0.000106	0.000355	OK.	1.000000	0.000000	1	0
	Cr 267.716 {126}	0.999890	0.000471	0.000299	0.000995	OK.	1.000000	0.000000	1	0
	Cu 324.754 {104}	0.999910	0.000696	0.000272	0.000907	OK.	1.000000	0.000000	1	0
	Fe 259.940 {130}	0.999789	0.004718	0.002333	0.007777	OK.	1.000000	0.000000	1	0
	In 230.606 {446}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	K 766.490 { 44}	0.999930	0.002258	0.023744	0.079148	OK.	1.000000	0.000000	1	0
	Mg 279.079 {121}	0.999832	0.000709	0.017409	0.058032	OK.	1.000000	0.000000	1	0
	Mn 257.610 {131}	0.999829	0.003869	0.000042	0.000140	OK.	1.000000	0.000000	1	0
	Mo 202.030 {467}	0.999995	0.000337	0.000124	0.000415	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	0.999942	0.006090	0.007894	0.026312	OK.	1.000000	0.000000	1	0
	Ni 231.604 {445}	0.999891	0.001879	0.000158	0.000527	OK.	1.000000	0.000000	1	0
	Pb 220.353 {453}	0.999743	0.002084	0.000519	0.001728	OK.	1.000000	0.000000	1	0
	Sb 206.833 {463}	0.999854	0.000359	0.000939	0.003130	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	0.999829	0.000245	0.001424	0.004746	OK.	1.000000	0.000000	1	0
	Si 212.412 {459}	0.988837	0.006315	0.000342	0.001140	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	0.999921	0.000543	0.000239	0.000798	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	0.999986	0.006824	0.000076	0.000253	OK.	1.000000	0.000000	1	0
	Ti 334.941 {101}	0.999998	0.000292	0.000114	0.000379	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	0.999855	0.000727	0.000684	0.002279	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	0.999998	0.000091	0.000249	0.000829	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Zn 206.200 {463}	0.999878	0.003776	0.000057	0.000190	OK.	1.000000	0.000000	1	0

Zoom In ▶ Zoom Out

Sample Name: Blank Acquired: 8/3/2016 8:22:25 Type: Cal
Method: 60102007_042011(v226) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.0002**	**.0029**	**-.0006**	**.0015**	**.0012**	**.0058**	**-.0015**	**-.0008**	**-.0003**
Stddev	.0002	.0011	.0001	.0015	.0009	.0005	.0001	.0002	.0001
%RSD	124.2	39.42	8.941	99.39	70.09	7.995	6.896	28.04	26.64
#1	-.0003	.0024	-.0006	.0032	.0018	.0053	-.0015	-.0005	-.0004
#2	-.0004	.0021	-.0006	.0012	.0002	.0058	-.0016	-.0007	-.0003
#3	.0001	.0042	-.0005	.0002	.0016	.0063	-.0014	-.0010	-.0002

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0079**	**.0008**	**-.0108**	**-.0003**	**.0003**	**.0008**	**-.0045**	**.0006**	**-.0002**
Stddev	.0002	.0003	.0032	.0006	.0000	.0001	.0011	.0001	.0006
%RSD	1.960	35.00	29.55	207.0	8.483	12.52	24.98	22.52	265.9
#1	.0080	.0009	-.0082	.0001	.0003	.0006	-.0039	.0005	.0000
#2	.0077	.0010	-.0099	-.0009	.0003	.0008	-.0039	.0007	-.0008
#3	.0079	.0005	-.0144	.0000	.0003	.0008	-.0058	.0006	.0002

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0008**	**-.0003**	**.0041**	**.0006**	**-.0006**	**.0013**	**-.0016**	**-.0007**	**.0008**
Stddev	.0003	.0000	.0002	.0001	.0003	.0001	.0002	.0001	.0001
%RSD	39.43	15.37	5.290	17.36	42.46	7.470	15.77	7.387	14.10
#1	.0011	-.0003	.0041	.0005	-.0005	.0012	-.0013	-.0007	.0009
#2	.0004	-.0003	.0039	.0006	-.0010	.0014	-.0018	-.0006	.0008
#3	.0008	-.0003	.0043	.0007	-.0004	.0013	-.0017	-.0007	.0007

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2372.2**	**5368.9**	**39948.**	**4161.4**
Stddev	2.2	7.7	129.	19.1
%RSD	.09221	.14316	.32341	.46018
#1	2370.5	5361.4	39832.	4139.3
#2	2371.4	5376.8	39925.	4171.2
#3	2374.7	5368.4	40088.	4173.6

◀ Zoom In ▶ Zoom Out

Sample Name: LowStd Acquired: 8/3/2016 8:26:15 Type: Cal
Method: 60102007_042011(v226) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0339**	**2.111**	**.0756**	**3.279**	**5.904**	**3.096**	**2.045**	**1.128**	**.2390**
Stddev	.0004	.007	.0001	.012	.013	.011	.002	.001	.0008
%RSD	1.176	.3491	.1575	.3737	.2226	.3669	.1056	.1281	.3552
#1	.0342	2.104	.0756	3.270	5.909	3.086	2.047	1.128	.2380
#2	.0335	2.112	.0757	3.274	5.890	3.093	2.043	1.129	.2397
#3	.0340	2.118	.0755	3.293	5.915	3.108	2.046	1.126	.2392

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.3866**	**2.229**	**.7812**	**.3566**	**1.114**	**.4874**	**3.263**	**.6160**	**.3854**
Stddev	.0009	.008	.0046	.0014	.004	.0002	.014	.0010	.0011
%RSD	.2389	.3446	.5825	.4061	.3297	.0318	.4178	.1606	.2747
#1	.3856	2.220	.7766	.3553	1.110	.4875	3.276	.6164	.3863
#2	.3867	2.232	.7813	.3565	1.116	.4872	3.249	.6168	.3843
#3	.3875	2.235	.7856	.3582	1.117	.4875	3.263	.6149	.3857

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1009**	**.0561**	**.1653**	**.1884**	**6.376**	**.8194**	**.1267**	**.3268**	**1.122**
Stddev	.0002	.0005	.0002	.0003	.014	.0019	.0006	.0014	.003
%RSD	.2072	.9094	.0990	.1692	.2204	.2324	.4922	.4418	.2501
#1	.1007	.0556	.1654	.1880	6.360	.8187	.1260	.3251	1.125
#2	.1010	.0566	.1652	.1885	6.383	.8216	.1270	.3276	1.121
#3	.1011	.0562	.1654	.1886	6.385	.8180	.1271	.3276	1.121

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2267.4**	**5303.0**	**39212.**	**4151.5**
Stddev	4.4	6.5	222.	15.7
%RSD	.19492	.12197	.56564	.37829
#1	2262.3	5299.0	39430.	4162.5
#2	2270.6	5310.4	38987.	4158.6
#3	2269.2	5299.5	39219.	4133.5

◀ Zoom In ▶ Zoom Out

Sample Name: MidStd Acquired: 8/3/2016 8:30:00 Type: Cal
Method: 60102007_042011(v226) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1375**	**8.059**	**.3252**	**13.89**	**24.63**	**11.63**	**8.461**	**4.707**	**.9758**
Stddev	.0001	.041	.0004	.06	.16	.06	.004	.001	.0013
%RSD	.0868	.5021	.1323	.4281	.6592	.4776	.0492	.0172	.1379
#1	.1376	8.081	.3254	13.93	24.77	11.66	8.464	4.707	.9769
#2	.1374	8.084	.3254	13.92	24.68	11.67	8.462	4.707	.9743
#3	.1375	8.013	.3247	13.82	24.46	11.57	8.456	4.708	.9762

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.646**	**8.308**	**3.045**	**1.347**	**4.527**	**1.921**	**12.52**	**2.540**	**1.653**
Stddev	.002	.045	.020	.005	.006	.002	.07	.002	.000
%RSD	.0881	.5372	.6580	.3837	.1365	.1195	.5275	.0853	.0271
#1	1.647	8.326	3.059	1.351	4.531	1.919	12.57	2.539	1.653
#2	1.644	8.341	3.054	1.349	4.520	1.924	12.54	2.539	1.653
#3	1.647	8.258	3.022	1.341	4.529	1.920	12.44	2.543	1.652

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.4383**	**.2423**	**.6742**	**.7523**	**25.85**	**3.255**	**.5559**	**1.280**	**4.557**
Stddev	.0009	.0003	.0012	.0011	.17	.004	.0011	.001	.008
%RSD	.2155	.1076	.1767	.1488	.6496	.1289	.2064	.0932	.1733
#1	.4389	.2425	.6753	.7533	25.94	3.259	.5549	1.279	4.551
#2	.4388	.2423	.6743	.7511	25.95	3.255	.5571	1.279	4.554
#3	.4372	.2420	.6729	.7526	25.65	3.251	.5556	1.281	4.566

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2144.3**	**5143.4**	**39045.**	**4134.0**
Stddev	2.4	3.6	94.	20.6
%RSD	.11262	.06941	.24091	.49726
#1	2147.1	5144.4	39113.	4124.9
#2	2143.0	5139.4	38938.	4119.6
#3	2142.8	5146.3	39085.	4157.6

◀ Zoom In ▶ Zoom Out

Sample Name: HighStd Acquired: 8/3/2016 8:33:52 Type: Cal
Method: 60102007_042011(v226) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.2734**	**16.00**	**.6472**	**27.42**	**47.87**	**22.79**	**16.43**	**9.172**	**1.875**
Stddev	.0006	.06	.0005	.07	.25	.10	.03	.012	.012
%RSD	.2319	.3997	.0736	.2669	.5126	.4291	.1622	.1264	.6237
#1	.2740	16.07	.6474	27.49	48.15	22.90	16.43	9.165	1.888
#2	.2734	15.97	.6466	27.42	47.71	22.71	16.41	9.166	1.866
#3	.2727	15.96	.6474	27.34	47.75	22.76	16.46	9.185	1.871

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.224**	**16.50**	**6.084**	**2.656**	**8.511**	**3.852**	**24.88**	**4.928**	**3.310**
Stddev	.005	.06	.022	.008	.052	.005	.11	.007	.008
%RSD	.1489	.3916	.3585	.3173	.6084	.1378	.4528	.1436	.2493
#1	3.228	16.57	6.109	2.665	8.533	3.851	25.01	4.926	3.308
#2	3.226	16.45	6.073	2.648	8.451	3.848	24.87	4.923	3.303
#3	3.219	16.47	6.070	2.656	8.547	3.858	24.78	4.936	3.319

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.8721**	**.4806**	**1.849**	**1.467**	**50.64**	**6.520**	**1.103**	**2.519**	**8.833**
Stddev	.0026	.0010	.004	.000	.20	.004	.004	.008	.014
%RSD	.2946	.1986	.2028	.0262	.4048	.0679	.3230	.3199	.1597
#1	.8697	.4796	1.845	1.467	50.86	6.517	1.100	2.529	8.843
#2	.8718	.4805	1.850	1.467	50.62	6.517	1.102	2.515	8.817
#3	.8748	.4815	1.853	1.466	50.45	6.525	1.107	2.515	8.839

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1987.4**	**4936.8**	**38186.**	**4083.2**
Stddev	3.6	8.4	145.	15.0
%RSD	.18156	.16990	.37965	.36731
#1	1986.1	4941.7	38022.	4067.0
#2	1991.5	4941.6	38242.	4096.7
#3	1984.7	4927.1	38295.	4085.8

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: HSTD Acquired: 8/3/2016 8:37:51 Type: QC
Method: 60102007_042011(v226) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4980**	**79.66**	**4.027**	**4.021**	**3.977**	**79.32**	**3.972**	**3.982**	**3.937**
Stddev	.0027	.56	.011	.027	.030	.58	.005	.004	.010
%RSD	.5384	.6985	.2617	.6747	.7438	.7325	.1395	.1112	.2584
#1	.5002	79.05	4.035	3.994	3.944	78.85	3.978	3.981	3.945
#2	.4950	80.12	4.015	4.048	4.002	79.97	3.968	3.977	3.940
#3	.4986	79.82	4.030	4.021	3.985	79.14	3.970	3.986	3.925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.977**	**79.46**	**80.16**	**79.35**	**3.927**	**4.010**	**79.92**	**3.968**	**4.023**
Stddev	.005	.60	.50	.54	.016	.004	.55	.002	.009
%RSD	.1361	.7528	.6191	.6763	.3976	.1012	.6862	.0565	.2196
#1	3.979	78.84	79.70	78.84	3.915	4.008	79.35	3.967	4.028
#2	3.971	80.03	80.69	79.91	3.921	4.007	80.45	3.966	4.029
#3	3.981	79.50	80.10	79.31	3.944	4.014	79.96	3.970	4.013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.040**	**4.023**	**4.505**	**3.967**	**3.980**	**3.997**	**4.014**	**3.962**	**3.951**
Stddev	.013	.010	.015	.003	.032	.019	.003	.005	.006
%RSD	.3092	.2381	.3251	.0639	.7954	.4707	.0810	.1354	.1567
#1	4.037	4.015	4.497	3.969	3.945	3.983	4.017	3.968	3.954
#2	4.030	4.019	4.496	3.964	4.006	4.018	4.011	3.960	3.954
#3	4.054	4.034	4.522	3.967	3.990	3.988	4.013	3.958	3.943
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: HSTD Acquired: 8/3/2016 8:37:51 Type: QC
Method: 60102007_042011(v226) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1988.4**	**4926.8**	**38109.**	**4065.9**
Stddev	4.4	3.0	76.	37.8
%RSD	.21979	.06133	.19917	.93083
#1	1985.2	4923.7	38048.	4089.3
#2	1986.5	4929.7	38086.	4022.3
#3	1993.3	4927.2	38194.	4086.2

Zoom In Zoom Out

Sample Name: ICV Acquired: 8/3/2016 8:44:02 Type: QC
Method: 60102007_042011(v226) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2545**	**40.91**	**1.991**	**2.086**	**2.004**	**42.28**	**2.020**	**2.026**	**2.011**
Stddev	.0006	.20	.004	.007	.013	.17	.001	.000	.013
%RSD	.2328	.4823	.2186	.3146	.6388	.4055	.0574	.0094	.6578
#1	.2549	41.13	1.991	2.094	2.013	42.43	2.021	2.025	1.996
#2	.2547	40.84	1.995	2.082	2.010	42.32	2.019	2.026	2.019
#3	.2538	40.76	1.986	2.082	1.990	42.09	2.021	2.026	2.018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.010**	**41.18**	**41.71**	**42.39**	**2.036**	**1.910**	**42.87**	**2.009**	**1.997**
Stddev	.006	.18	.21	.34	.011	.003	.20	.002	.003
%RSD	.3058	.4311	.4941	.7924	.5573	.1423	.4608	.0803	.1408
#1	2.016	41.32	41.95	42.54	2.023	1.907	43.08	2.007	1.999
#2	2.004	41.24	41.62	42.62	2.045	1.912	42.85	2.010	1.993
#3	2.009	40.98	41.56	42.01	2.040	1.911	42.69	2.010	1.998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.005**	**2.028**	**.2474**	**2.039**	**1.897**	**1.952**	**2.072**	**1.882**	**2.003**
Stddev	.002	.008	.0006	.001	.006	.004	.001	.008	.002
%RSD	.0945	.4103	.2380	.0647	.3261	.2058	.0693	.4323	.1013
#1	2.004	2.019	.2467	2.038	1.903	1.949	2.072	1.875	2.005
#2	2.004	2.032	.2475	2.039	1.896	1.951	2.070	1.891	2.001
#3	2.007	2.034	.2479	2.041	1.891	1.957	2.073	1.882	2.004
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: ICV Acquired: 8/3/2016 8:44:02 Type: QC
Method: 60102007_042011(v226) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2128.3**	**5095.6**	**38925.**	**4151.2**
Stddev	5.2	3.4	215.	26.6
%RSD	.24224	.06679	.55240	.63961
#1	2126.8	5092.6	39162.	4129.8
#2	2134.0	5099.3	38871.	4142.8
#3	2124.0	5095.0	38742.	4180.9

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Zoom In Zoom Out

Sample Name: ICB Acquired: 8/3/2016 8:49:55 Type: QC
Method: 60102007_042011(v226) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0036**	**.0004**	**-.0003**	**.0001**	**.0029**	**.0000**	**.0001**	**.0000**
Stddev	.0006	.0059	.0004	.0002	.0000	.0024	.0000	.0002	.0002
%RSD	134.8	164.6	103.8	79.93	31.57	85.15	55.37	239.6	366.3
#1	.0000	.0018	.0003	.0000	.0001	.0003	.0000	-.0001	.0002
#2	.0002	-.0012	.0008	-.0003	.0001	.0051	.0001	.0002	.0001
#3	.0011	.0102	.0001	-.0004	.0001	.0032	.0000	.0001	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0063**	**.0031**	**.0074**	**.0001**	F **.0012**	**.0218**	**.0002**	**-.0001**
Stddev	.0003	.0012	.0451	.0144	.0000	.0002	.0015	.0000	.0005
%RSD	69.57	19.58	1473.	194.8	43.75	17.91	6.879	22.64	370.1
#1	.0002	.0074	.0081	.0159	.0001	.0014	.0204	.0002	.0000
#2	.0008	.0066	.0455	.0155	.0001	.0012	.0217	.0002	-.0007
#3	.0003	.0050	-.0444	-.0092	.0000	.0010	.0234	.0002	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**-.0002**	**.0008**	**-.0001**	**.0001**	**.0006**	**.0001**	**-.0001**	**.0001**
Stddev	.0004	.0001	.0005	.0004	.0001	.0001	.0009	.0001	.0000
%RSD	106.7	51.93	61.98	505.2	81.18	8.852	898.5	84.65	36.81
#1	.0000	-.0002	.0014	-.0001	.0002	.0007	.0010	-.0002	.0002
#2	.0004	-.0001	.0005	.0003	.0002	.0006	-.0008	-.0001	.0001
#3	.0008	-.0002	.0005	-.0005	.0000	.0006	.0001	.0000	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: ICB Acquired: 8/3/2016 8:49:55 Type: QC
Method: 60102007_042011(v226) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2433.4**	**5384.1**	**40882.**	**4232.0**
Stddev	2.9	6.9	170.	14.1
%RSD	.11758	.12778	.41660	.33385
#1	2433.6	5376.8	40948.	4221.4
#2	2430.5	5385.1	41010.	4248.0
#3	2436.2	5390.4	40689.	4226.6

Zoom In Zoom Out

Sample Name: CRIA Acquired: 8/3/2016 9:01:47 Type: QC
Method: 60102007_042011(v226) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0090**	**.2126**	**.0104**	**.2070**	**.0051**	**1.066**	**.0053**	**.0533**	**.0108**
Stddev	.0001	.0057	.0008	.0005	.0000	.006	.0001	.0001	.0002
%RSD	1.200	2.702	7.285	.2251	.3747	.5298	1.794	.2013	1.923
#1	.0090	.2083	.0097	.2067	.0051	1.060	.0052	.0534	.0110
#2	.0090	.2191	.0112	.2067	.0051	1.069	.0054	.0533	.0107
#3	.0091	.2104	.0103	.2075	.0051	1.070	.0053	.0532	.0106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0267**	**.3176**	**10.26**	**5.241**	**.0163**	**.0500**	**10.32**	**.0430**	**.0044**
Stddev	.0005	.0007	.07	.047	.0001	.0001	.02	.0000	.0004
%RSD	1.889	.2230	.6737	.8878	.6142	.2358	.1794	.0875	8.656
#1	.0267	.3180	10.19	5.188	.0162	.0501	10.30	.0431	.0043
#2	.0272	.3167	10.32	5.259	.0164	.0500	10.33	.0430	.0048
#3	.0262	.3179	10.29	5.276	.0164	.0499	10.34	.0430	.0041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0044**	**.0112**	**.1179**	**.0523**	**.0100**	**.0101**	**.0104**	**.0489**	**.0220**
Stddev	.0013	.0019	.0006	.0005	.0001	.0002	.0016	.0001	.0000
%RSD	29.56	16.81	.5338	.8940	1.157	1.985	15.83	.1606	.0546
#1	.0056	.0102	.1185	.0523	.0100	.0099	.0098	.0488	.0220
#2	.0030	.0100	.1178	.0518	.0099	.0103	.0123	.0489	.0220
#3	.0045	.0134	.1172	.0527	.0101	.0101	.0091	.0490	.0220
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CRIA Acquired: 8/3/2016 9:01:47 Type: QC
Method: 60102007_042011(v226) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2373.6**	**5344.2**	**40264.**	**4234.6**
Stddev	5.1	4.2	100.	45.5
%RSD	.21451	.07880	.24906	1.0734
#1	2379.1	5340.5	40266.	4281.6
#2	2372.5	5343.3	40163.	4231.3
#3	2369.2	5348.8	40363.	4190.8

Zoom In Zoom Out

Sample Name: ICSA Acquired: 8/3/2016 9:07:05 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**504.0**	**.0000**	**-.0001**	**.0000**	**495.7**	**-.0007**	**.0005**	**-.0001**
Stddev	.0005	2.7	.001	.0003	.000	3.3	.0001	.0002	.0006
%RSD	409.3	.5431	4580.	474.9	60.36	.6669	20.00	31.68	1049.
#1	-.0006	504.9	.0010	-.0002	.0000	496.8	-.0006	.0006	.0001
#2	-.0002	506.2	-.0013	.0002	-.0001	498.3	-.0009	.0006	-.0007
#3	.0004	501.0	.0002	-.0002	-.0001	492.0	-.0007	.0003	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**189.9**	**.0334**	**531.7**	**.0004**	**.0000**	**.1686**	**.0000**	**.0000**
Stddev	.0002	.6	.0322	.9	.0002	.000	.0108	.000	.002
%RSD	137.6	.3213	96.52	.1759	42.30	948.2	6.415	1506.	6848.
#1	.0000	190.1	-.0035	531.8	.0003	.0003	.1791	-.0001	-.0024
#2	.0004	190.5	.0473	532.5	.0006	-.0002	.1693	.0002	.0015
#3	.0001	189.3	.0563	530.7	.0003	-.0002	.1575	-.0001	.0008
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0020**	**.0000**	**.0545**	F **.0031**	**-.0001**	**-.0007**	**-.0013**	**.0000**	**-.0008**
Stddev	.0019	.002	.0010	.0008	.0002	.0000	.0020	.0002	.0000
%RSD	98.41	63110.	1.797	26.69	335.5	5.405	156.5	830.0	5.480
#1	.0000	-.0024	.0540	.0040	.0002	-.0007	-.0014	.0001	-.0008
#2	.0039	.0020	.0556	.0025	-.0003	-.0007	-.0032	-.0002	-.0009
#3	.0019	.0004	.0538	.0027	-.0001	-.0007	.0008	.0002	-.0009
Check ?	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Zoom In Zoom Out

Sample Name: ICSA Acquired: 8/3/2016 9:07:05 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1840.6**	**4700.4**	**35370.**	**3876.1**
Stddev	2.4	10.4	37.	10.8
%RSD	.12917	.22162	.10334	.27837
#1	1838.3	4688.4	35330.	3880.3
#2	1840.4	4707.5	35379.	3863.9
#3	1843.1	4705.2	35401.	3884.2

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 8/3/2016 9:13:22 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.038**	**508.3**	**1.102**	**.5379**	**.5176**	**496.3**	**.9825**	**.4947**	**.5186**
Stddev	.003	1.4	.004	.0035	.0019	3.2	.0020	.0013	.0010
%RSD	.2912	.2752	.3395	.6569	.3598	.6543	.2050	.2597	.2016
#1	1.035	508.9	1.106	.5338	.5160	495.8	.9841	.4955	.5193
#2	1.039	506.7	1.099	.5402	.5196	493.3	.9803	.4932	.5192
#3	1.040	509.3	1.099	.5396	.5172	499.7	.9832	.4953	.5174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5542**	**185.8**	**-.0070**	**523.8**	**.5120**	**1.032**	**.1950**	**.9853**	**1.025**
Stddev	.0017	.1	.0302	.9	.0003	.002	.0152	.0021	.002
%RSD	.3002	.0362	429.5	.1684	.0668	.1567	7.797	.2122	.1614
#1	.5528	185.7	.0245	523.1	.5122	1.033	.1792	.9876	1.027
#2	.5538	185.8	-.0357	523.6	.5122	1.030	.1963	.9848	1.023
#3	.5560	185.9	-.0099	524.8	.5116	1.032	.2096	.9835	1.024
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.055**	**1.048**	**.1158**	**.9636**	**1.015**	**1.006**	**1.008**	**.4758**	**.9758**
Stddev	.008	.003	.0015	.0030	.006	.001	.004	.0022	.0027
%RSD	.7225	.2556	1.304	.3120	.5756	.1316	.4190	.4698	.2736
#1	1.062	1.048	.1171	.9671	1.008	1.007	1.012	.4734	.9780
#2	1.057	1.046	.1142	.9619	1.020	1.005	1.004	.4778	.9728
#3	1.047	1.051	.1162	.9618	1.016	1.007	1.008	.4762	.9765
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 8/3/2016 9:13:22 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1822.6**	**4693.7**	**35635.**	**3846.0**
Stddev	2.3	9.8	88.	7.2
%RSD	.12810	.20803	.24577	.18617
#1	1821.5	4682.5	35564.	3840.2
#2	1825.3	4698.9	35733.	3854.0
#3	1821.0	4699.9	35609.	3843.9

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Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 9:18:13 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2519**	**39.73**	**2.032**	**2.021**	**2.014**	**40.05**	**2.056**	**2.052**	**2.047**
Stddev	.0009	.15	.004	.004	.007	.20	.004	.002	.011
%RSD	.3656	.3897	.1822	.2052	.3618	.5025	.1879	.0760	.5503
#1	.2508	39.82	2.035	2.024	2.019	40.27	2.060	2.053	2.060
#2	.2526	39.82	2.028	2.023	2.017	40.02	2.052	2.053	2.042
#3	.2522	39.55	2.033	2.016	2.005	39.87	2.055	2.050	2.039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.025**	**39.56**	**39.83**	**39.72**	**2.082**	**2.001**	**39.73**	**2.050**	**2.017**
Stddev	.013	.12	.13	.25	.007	.002	.11	.003	.004
%RSD	.6477	.2912	.3155	.6293	.3451	.0760	.2848	.1296	.2198
#1	2.013	39.65	39.91	39.98	2.090	2.000	39.82	2.051	2.022
#2	2.021	39.59	39.91	39.68	2.079	2.003	39.75	2.053	2.015
#3	2.039	39.43	39.69	39.49	2.077	2.002	39.60	2.048	2.014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.037**	**2.039**	**1.642**	**2.042**	**2.003**	**1.992**	**2.031**	**2.015**	**2.050**
Stddev	.003	.006	.006	.001	.006	.006	.005	.004	.002
%RSD	.1678	.2930	.3460	.0476	.3211	.3152	.2523	.2091	.1016
#1	2.041	2.043	1.647	2.041	2.007	1.998	2.035	2.020	2.050
#2	2.035	2.042	1.644	2.043	2.006	1.991	2.025	2.014	2.049
#3	2.034	2.032	1.636	2.043	1.996	1.986	2.031	2.011	2.053
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 9:18:13 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2137.3**	**5105.5**	**39043.**	**4120.0**
Stddev	3.5	9.0	219.	15.3
%RSD	.16168	.17618	.55997	.37015
#1	2137.4	5114.7	38842.	4106.2
#2	2140.6	5096.7	39010.	4117.3
#3	2133.7	5105.1	39276.	4136.4

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 9:24:59 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.0000**	**-.0003**	**.0001**	**.0003**	**.0156**	**.0003**	**.0002**	**.0004**
Stddev	.0002	.0039	.0001	.0004	.0000	.0033	.0001	.0002	.0003
%RSD	68.09	24770.	53.11	675.6	5.625	20.93	31.99	76.83	72.43
#1	.0001	-.0041	-.0001	.0002	.0003	.0149	.0003	.0003	.0002
#2	.0005	.0035	-.0004	-.0004	.0003	.0191	.0003	.0003	.0002
#3	.0002	.0007	-.0004	.0003	.0003	.0127	.0002	.0000	.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0006**	**.0152**	**-.0028**	**.0043**	**.0004**	**.0006**	**.0371**	**.0007**	**-.0002**
Stddev	.0001	.0019	.0099	.0050	.0000	.0002	.0075	.0002	.0006
%RSD	11.74	12.80	355.3	114.0	8.801	32.40	20.33	24.44	268.7
#1	.0007	.0148	-.0103	.0038	.0004	.0009	.0411	.0008	-.0002
#2	.0006	.0135	-.0066	.0095	.0004	.0006	.0417	.0005	-.0008
#3	.0006	.0173	.0085	-.0003	.0004	.0005	.0284	.0007	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0016**	**-.0006**	**.0018**	**.0006**	**.0004**	**.0004**	**-.0002**	**.0002**	**.0003**
Stddev	.0007	.0011	.0002	.0001	.0000	.0001	.0006	.0002	.0000
%RSD	46.48	186.1	9.495	11.91	7.995	16.38	339.5	128.5	13.39
#1	.0025	.0006	.0017	.0005	.0003	.0004	-.0008	.0002	.0003
#2	.0010	-.0014	.0017	.0006	.0004	.0003	.0001	.0004	.0004
#3	.0013	-.0010	.0020	.0006	.0003	.0005	.0002	-.0001	.0004
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 9:24:59 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2424.4**	**5384.7**	**40666.**	**4198.7**
Stddev	1.9	6.4	92.	35.9
%RSD	.07808	.11854	.22718	.85499
#1	2425.3	5377.8	40566.	4205.0
#2	2425.7	5390.4	40749.	4160.0
#3	2422.2	5385.8	40683.	4231.0

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: MP30672-MB1 Acquired: 8/3/2016 9:29:00 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**-.0005**	**-.0004**	**-.0005**	**.0001**	**.0255**	**.0000**	**.0000**	**.0009**
Stddev	.0003	.0220	.0010	.0001	.0001	.0027	.0000	.000	.0001
%RSD	119.2	4009.	242.5	26.08	125.7	10.64	97.07	1347.	7.553
#1	.0002	-.0258	-.0016	-.0006	.0001	.0265	.0000	.0000	.0009
#2	.0005	.0144	.0001	-.0004	.0000	.0225	.0001	.0001	.0009
#3	.0000	.0097	.0002	-.0004	.0001	.0276	.0000	-.0001	.0010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.1376**	**.0192**	**.0160**	**.0005**	**.0004**	**.0196**	**.0006**	**.0000**
Stddev	.0002	.0010	.0451	.0160	.0000	.0001	.0104	.0001	.001
%RSD	36.00	.6935	234.7	100.1	6.114	12.73	52.91	18.35	2261.
#1	.0003	.1387	.0420	.0013	.0006	.0005	.0296	.0006	-.0002
#2	.0007	.1369	-.0328	.0331	.0005	.0004	.0089	.0006	.0009
#3	.0006	.1373	.0485	.0136	.0005	.0005	.0202	.0008	-.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0011**	**.0040**	**.0214**	**.0002**	**.0005**	**-.0006**	**-.0001**	**.0040**
Stddev	.0006	.0008	.0001	.0002	.0001	.0001	.0012	.0001	.0001
%RSD	854.3	70.65	1.440	.7802	88.62	26.34	210.3	75.59	2.407
#1	-.0008	.0002	.0040	.0216	.0001	.0006	.0007	.0000	.0041
#2	.0003	.0015	.0040	.0213	.0000	.0005	-.0016	-.0001	.0040
#3	.0003	.0016	.0039	.0213	.0003	.0003	-.0008	-.0001	.0039
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP30672-MB1 Acquired: 8/3/2016 9:29:00 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2431.6**	**5396.0**	**40867.**	**4188.1**
Stddev	4.9	6.0	234.	21.3
%RSD	.19986	.11111	.57302	.50921
#1	2435.8	5402.9	40743.	4212.6
#2	2426.3	5391.7	40722.	4177.9
#3	2432.7	5393.6	41137.	4173.8

Zoom In Zoom Out

Sample Name: MP30672-B1 Acquired: 8/3/2016 9:33:30 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0464**	**26.91**	**1.911**	**2.013**	**.0513**	**25.74**	**.0495**	**.4965**	**.2014**
Stddev	.0005	.05	.003	.006	.0002	.08	.0001	.0003	.0005
%RSD	1.015	.2007	.1678	.2804	.3324	.2922	.1570	.0642	.2570
#1	.0461	26.92	1.910	2.012	.0515	25.74	.0495	.4966	.2016
#2	.0469	26.85	1.915	2.007	.0513	25.66	.0494	.4968	.2008
#3	.0461	26.95	1.908	2.018	.0512	25.82	.0496	.4961	.2017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2537**	**26.34**	**25.01**	**25.04**	**.5155**	**.4823**	**25.22**	**.5043**	**.4768**
Stddev	.0004	.08	.13	.14	.0021	.0010	.08	.0012	.0013
%RSD	.1716	.3115	.5345	.5641	.4147	.2089	.3179	.2469	.2778
#1	.2541	26.39	25.00	25.13	.5175	.4814	25.24	.5029	.4777
#2	.2538	26.24	24.88	24.88	.5133	.4821	25.14	.5050	.4774
#3	.2532	26.37	25.15	25.10	.5157	.4834	25.29	.5050	.4753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4868**	**1.917**	**.0151**	**.5151**	**.4813**	**.4848**	**1.918**	**.4736**	**.4987**
Stddev	.0028	.003	.0004	.0003	.0016	.0005	.002	.0025	.0004
%RSD	.5851	.1611	2.871	.0667	.3241	.1102	.1112	.5324	.0714
#1	.4852	1.917	.0148	.5147	.4829	.4854	1.916	.4757	.4990
#2	.4901	1.920	.0148	.5154	.4798	.4845	1.920	.4708	.4983
#3	.4851	1.914	.0156	.5151	.4812	.4844	1.918	.4744	.4988
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP30672-B1 Acquired: 8/3/2016 9:33:30 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2250.4**	**5274.8**	**39897.**	**4154.0**
Stddev	5.1	10.2	270.	29.7
%RSD	.22712	.19390	.67639	.71551
#1	2244.5	5263.1	39588.	4131.7
#2	2253.1	5279.6	40017.	4187.8
#3	2253.6	5281.8	40085.	4142.7

Zoom In Zoom Out

Sample Name: FA35681-1 Acquired: 8/3/2016 9:37:42 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**124.9**	**.0586**	**1.264**	**.0040**	**49.06**	**-.0004**	**.0762**	**.2486**
Stddev	.0002	.4	.0009	.001	.0001	.16	.0001	.0001	.0003
%RSD	245.8	.2858	1.567	.1023	1.300	.3324	16.38	.1769	.1282
#1	-.0002	125.3	.0584	1.263	.0039	49.23	-.0004	.0763	.2487
#2	.0001	124.7	.0595	1.264	.0040	48.90	-.0004	.0762	.2489
#3	-.0001	124.7	.0577	1.265	.0039	49.06	-.0003	.0761	.2483

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1443**	**211.0**	**12.92**	**55.49**	**2.804**	**.0029**	**3.395**	**.2711**	**.0498**
Stddev	.0008	.5	.04	.30	.024	.0002	.017	.0007	.0023
%RSD	.5407	.2270	.3218	.5323	.8615	6.173	.5058	.2399	4.631
#1	.1451	211.6	12.97	55.83	2.776	.0028	3.414	.2717	.0476
#2	.1442	210.8	12.88	55.30	2.814	.0031	3.381	.2712	.0522
#3	.1436	210.7	12.92	55.33	2.820	.0028	3.389	.2704	.0498

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0013**	**-.0009**	**2.192**	**.0162**	**.2882**	F **5.184**	**-.0027**	**.3876**	**.5626**
Stddev	.0011	.0014	.001	.0003	.0010	.010	.0018	.0013	.0005
%RSD	83.28	147.7	.0560	2.111	.3463	.2007	67.75	.3414	.0941
#1	.0003	-.0022	2.193	.0166	.2894	5.172	-.0038	.3861	.5631
#2	.0025	.0005	2.193	.0162	.2875	5.189	-.0036	.3885	.5620
#3	.0012	-.0012	2.191	.0159	.2878	5.191	-.0006	.3881	.5627

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2094.7**	**6117.4**	**46054.**	**4798.9**
Stddev	2.4	6.6	97.	15.8
%RSD	.11345	.10853	.21098	.32995
#1	2094.5	6115.7	46148.	4780.7
#2	2097.1	6124.8	45954.	4809.2
#3	2092.4	6111.9	46061.	4806.9

Zoom In Zoom Out

Sample Name: MP30672-D1 Acquired: 8/3/2016 9:42:16 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0001**	**128.4**	**.0569**	**1.398**	**.0045**	**53.02**	**-.0005**	**.0771**	**.2560**
Stddev	.0003	.3	.0006	.002	.0001	.14	.0001	.0003	.0010
%RSD	395.4	.2085	1.044	.1377	1.320	.2705	19.09	.3777	.3890
#1	.0001	128.6	.0575	1.396	.0044	53.09	-.0005	.0774	.2551
#2	-.0003	128.5	.0566	1.400	.0045	53.11	-.0004	.0768	.2558
#3	.0004	128.1	.0565	1.397	.0045	52.85	-.0004	.0771	.2571

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1494**	**215.9**	**13.50**	**56.90**	**2.910**	**.0028**	**3.613**	**.2745**	**.0503**
Stddev	.0005	.4	.01	.27	.018	.0002	.001	.0004	.0013
%RSD	.3679	.1732	.0955	.4742	.6345	6.050	.0374	.1415	2.573
#1	.1490	216.3	13.50	56.81	2.901	.0027	3.615	.2749	.0501
#2	.1500	216.0	13.52	57.20	2.931	.0030	3.613	.2742	.0491
#3	.1492	215.6	13.49	56.69	2.897	.0028	3.612	.2743	.0517

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0023**	**-.0013**	**2.107**	**.0163**	**.3026**	F **5.306**	**-.0020**	**.4018**	**.5667**
Stddev	.0002	.0023	.002	.0003	.0011	.064	.0024	.0001	.0016
%RSD	6.947	173.3	.1142	1.934	.3695	1.213	117.4	.0125	.2872
#1	.0024	-.0013	2.105	.0160	.3036	5.284	-.0019	.4017	.5684
#2	.0021	-.0037	2.110	.0161	.3028	5.379	.0003	.4017	.5666
#3	.0024	.0010	2.106	.0166	.3014	5.256	-.0045	.4018	.5652

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2082.7**	**6186.6**	**46280.**	**4808.0**
Stddev	1.2	8.8	130.	21.7
%RSD	.05918	.14263	.28094	.45156
#1	2083.9	6181.0	46260.	4816.8
#2	2082.8	6181.9	46162.	4783.3
#3	2081.4	6196.7	46419.	4823.9

Zoom In Zoom Out

Sample Name: MP30672-SD1 Acquired: 8/3/2016 9:46:50 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0004**	**146.5**	**.0680**	**1.488**	**.0043**	**58.95**	**-.0014**	**.0927**	**.2976**
Stddev	.0005	1.0	.0018	.009	.0000	.47	.0003	.0002	.0018
%RSD	109.8	.6802	2.641	.5773	.4863	.7998	20.81	.2334	.5940
#1	.0009	147.0	.0660	1.498	.0043	59.10	-.0013	.0924	.2963
#2	.0004	145.3	.0687	1.480	.0043	58.43	-.0012	.0927	.2968
#3	.0000	147.1	.0694	1.487	.0043	59.33	-.0017	.0928	.2996

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1702**	**255.5**	**14.97**	**65.65**	**3.460**	**.0018**	**4.022**	**.3330**	**.0423**
Stddev	.0020	1.8	.11	.82	.008	.0006	.051	.0009	.0025
%RSD	1.174	.7049	.7178	1.250	.2293	34.44	1.272	.2620	5.906
#1	.1712	256.3	14.90	65.93	3.457	.0013	4.001	.3321	.0396
#2	.1715	253.4	14.91	64.72	3.455	.0024	3.986	.3330	.0428
#3	.1679	256.8	15.09	66.29	3.470	.0016	4.081	.3339	.0445

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0003**	**-.0029**	**2.623**	**.0190**	**.3411**	**6.175**	**.0027**	**.4607**	**.7243**
Stddev	.0030	.0113	.003	.0014	.0019	.028	.0035	.0017	.0017
%RSD	1064.	384.4	.1276	7.531	.5460	.4475	128.7	.3587	.2316
#1	-.0015	.0024	2.622	.0192	.3410	6.162	.0063	.4590	.7234
#2	-.0026	-.0160	2.621	.0175	.3392	6.207	.0026	.4606	.7232
#3	.0032	.0047	2.627	.0203	.3429	6.157	-.0007	.4623	.7262

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2323.0**	**5583.5**	**41631.**	**4253.4**
Stddev	5.7	4.3	120.	14.2
%RSD	.24560	.07745	.28769	.33280
#1	2323.1	5584.8	41731.	4250.8
#2	2328.7	5587.0	41499.	4268.7
#3	2317.3	5578.7	41664.	4240.7

Zoom In Zoom Out

Sample Name: MP30672-PS1 Acquired: 8/3/2016 9:51:10 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0409**	**124.7**	**.1433**	**1.477**	**.0488**	**53.07**	**.0417**	**.1172**	**.2865**
Stddev	.0003	.3	.0013	.002	.0001	.22	.0000	.0002	.0010
%RSD	.6820	.2354	.9001	.1089	.1880	.4113	.0272	.1748	.3477
#1	.0408	125.0	.1421	1.478	.0489	53.32	.0417	.1174	.2855
#2	.0407	124.4	.1433	1.475	.0487	52.95	.0417	.1172	.2875
#3	.0412	124.7	.1447	1.478	.0489	52.93	.0417	.1170	.2866

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2324**	**208.9**	**21.60**	**58.94**	**2.790**	**.0869**	**12.32**	**.3505**	**.0995**
Stddev	.0013	.8	.07	.49	.019	.0002	.02	.0001	.0017
%RSD	.5399	.3952	.3349	.8368	.6785	.2494	.1633	.0297	1.715
#1	.2318	209.8	21.65	59.49	2.774	.0872	12.34	.3504	.0978
#2	.2316	208.7	21.52	58.78	2.785	.0868	12.30	.3504	.0995
#3	.2339	208.2	21.63	58.55	2.811	.0868	12.32	.3506	.1012

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0910**	**.0804**	**2.075**	**.0571**	**.3261**	F **5.080**	**.0962**	**.4236**	**.7691**
Stddev	.0018	.0010	.002	.0006	.0002	.024	.0026	.0015	.0006
%RSD	2.004	1.233	.1171	.9906	.0554	.4648	2.730	.3430	.0729
#1	.0928	.0810	2.076	.0577	.3263	5.088	.0943	.4219	.7691
#2	.0892	.0809	2.077	.0571	.3262	5.098	.0951	.4245	.7696
#3	.0910	.0792	2.072	.0566	.3259	5.053	.0992	.4243	.7685

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2083.0**	**6096.4**	**45887.**	**4736.2**
Stddev	3.7	3.5	72.	12.3
%RSD	.17556	.05708	.15639	.25891
#1	2087.2	6099.2	45943.	4727.0
#2	2080.7	6092.5	45913.	4731.6
#3	2081.0	6097.5	45806.	4750.1

Zoom In Zoom Out

Sample Name: MP30672-S1 Acquired: 8/3/2016 9:55:41 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0401**	**162.9**	**1.635**	**3.175**	**.0483**	**75.76**	**.0395**	**.4803**	**.4378**
Stddev	.0001	.3	.001	.013	.0001	.26	.0001	.0007	.0014
%RSD	.3418	.2141	.0444	.4188	.1806	.3468	.2796	.1460	.3129
#1	.0403	162.5	1.634	3.168	.0482	75.55	.0394	.4797	.4392
#2	.0401	163.1	1.635	3.191	.0483	75.68	.0395	.4801	.4364
#3	.0400	163.1	1.635	3.167	.0483	76.06	.0396	.4810	.4378

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.3703**	**245.2**	**35.37**	**80.99**	**3.399**	**.3850**	**26.05**	**.6977**	**.5591**
Stddev	.0018	.6	.09	.51	.013	.0002	.10	.0006	.0034
%RSD	.4955	.2303	.2573	.6315	.3922	.0519	.3768	.0926	.6004
#1	.3709	245.0	35.30	80.59	3.384	.3850	25.94	.6972	.5553
#2	.3682	244.7	35.47	80.81	3.403	.3848	26.13	.6975	.5617
#3	.3717	245.8	35.34	81.57	3.410	.3852	26.08	.6984	.5602

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1371**	**1.573**	**2.089**	**.4105**	**.7378**	F **5.809**	**1.951**	**.8149**	**1.007**
Stddev	.0005	.001	.001	.0002	.0019	.019	.007	.0011	.002
%RSD	.3407	.0847	.0598	.0578	.2533	.3297	.3730	.1328	.2092
#1	.1374	1.573	2.088	.4108	.7369	5.830	1.944	.8142	1.005
#2	.1365	1.574	2.089	.4103	.7399	5.803	1.959	.8143	1.008
#3	.1373	1.572	2.090	.4104	.7365	5.793	1.951	.8161	1.009

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1998.4**	**6157.1**	**46381.**	**4811.4**
Stddev	8.5	7.7	77.	45.3
%RSD	.42604	.12582	.16676	.94120
#1	2008.1	6164.7	46318.	4806.9
#2	1992.1	6157.4	46357.	4858.8
#3	1995.1	6149.2	46467.	4768.5

Zoom In Zoom Out

Sample Name: MP30672-S2 Acquired: 8/3/2016 10:00:09 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0386**	**177.6**	**1.597**	**3.372**	**.0472**	**82.75**	**.0382**	**.4737**	**.4595**
Stddev	.0005	.3	.005	.006	.0003	.40	.0002	.0008	.0038
%RSD	1.353	.1700	.3024	.1797	.6160	.4887	.5523	.1598	.8171
#1	.0382	177.9	1.598	3.379	.0475	83.04	.0380	.4735	.4556
#2	.0383	177.3	1.591	3.368	.0469	82.29	.0382	.4730	.4631
#3	.0392	177.6	1.601	3.369	.0472	82.91	.0384	.4745	.4597

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.3799**	**269.3**	**36.17**	**86.98**	**3.689**	**.3736**	**25.91**	**.7070**	**.5648**
Stddev	.0021	.9	.16	.25	.052	.0011	.03	.0017	.0015
%RSD	.5630	.3428	.4423	.2882	1.409	.2823	.1180	.2470	.2709
#1	.3791	270.1	36.30	87.21	3.635	.3730	25.94	.7079	.5648
#2	.3783	268.3	35.99	86.71	3.739	.3730	25.88	.7050	.5633
#3	.3823	269.5	36.23	87.03	3.692	.3748	25.89	.7081	.5664

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1227**	**1.519**	**1.114**	**.3944**	**.7814**	F **6.367**	**1.940**	**.8506**	**1.047**
Stddev	.0004	.004	.004	.0006	.0018	.070	.003	.0024	.001
%RSD	.2952	.2755	.3809	.1608	.2307	1.093	.1563	.2827	.0855
#1	.1224	1.520	1.111	.3938	.7833	6.322	1.941	.8479	1.047
#2	.1227	1.514	1.113	.3943	.7810	6.447	1.936	.8524	1.047
#3	.1231	1.523	1.119	.3951	.7798	6.331	1.942	.8515	1.046

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1971.9**	**6290.9**	**47348.**	**4912.1**
Stddev	3.1	6.6	295.	40.6
%RSD	.15787	.10502	.62396	.82741
#1	1968.3	6288.8	47649.	4884.4
#2	1973.9	6298.3	47059.	4958.8
#3	1973.5	6285.6	47338.	4893.2

Zoom In Zoom Out

Sample Name: FA35681-2 Acquired: 8/3/2016 10:04:37 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0002**	**123.4**	**.0471**	**1.272**	**.0042**	**49.09**	**-.0003**	**.0774**	**.2450**
Stddev	.0002	.5	.0004	.001	.0000	.13	.0001	.0001	.0013
%RSD	109.5	.3708	.9185	.1047	1.040	.2679	15.95	.1351	.5240
#1	.0000	123.1	.0475	1.270	.0042	48.99	-.0004	.0775	.2458
#2	.0002	123.9	.0467	1.273	.0043	49.04	-.0003	.0774	.2457
#3	.0005	123.2	.0472	1.272	.0042	49.24	-.0003	.0773	.2436

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1463**	**215.0**	**12.44**	**55.26**	**2.804**	**.0026**	**3.470**	**.2701**	**.0495**
Stddev	.0005	.6	.02	.15	.016	.0001	.022	.0004	.0007
%RSD	.3733	.2910	.1434	.2676	.5816	4.729	.6430	.1437	1.374
#1	.1458	214.3	12.44	55.17	2.823	.0025	3.457	.2704	.0488
#2	.1469	215.4	12.42	55.43	2.792	.0025	3.457	.2696	.0496
#3	.1463	215.3	12.45	55.18	2.797	.0027	3.496	.2702	.0501

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0011**	**-.0037**	**2.203**	**.0161**	**.2896**	F **5.097**	**-.0031**	**.3909**	**.5544**
Stddev	.0004	.0018	.002	.0001	.0011	.030	.0020	.0009	.0013
%RSD	34.34	48.45	.1096	.9204	.3757	.5897	63.73	.2304	.2358
#1	.0011	-.0054	2.203	.0160	.2902	5.123	-.0054	.3903	.5559
#2	.0015	-.0037	2.202	.0161	.2903	5.105	-.0021	.3920	.5537
#3	.0007	-.0019	2.206	.0163	.2884	5.064	-.0018	.3905	.5535

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2092.8**	**6199.2**	**46625.**	**4811.3**
Stddev	1.8	9.0	167.	8.0
%RSD	.08831	.14564	.35768	.16614
#1	2092.9	6199.8	46455.	4814.4
#2	2094.7	6189.8	46633.	4817.3
#3	2091.0	6207.8	46788.	4802.2

Zoom In Zoom Out

Sample Name: FA35795-1 Acquired: 8/3/2016 10:09:11 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0007**	**297.6**	**.1832**	**1.453**	**.0086**	**11.41**	**-.0022**	**.0988**	**.3134**
Stddev	.0003	.8	.0007	.006	.0001	.02	.0002	.0003	.0009
%RSD	39.32	.2695	.3910	.3955	.5904	.1830	10.44	.3367	.2794
#1	-.0010	298.4	.1827	1.459	.0087	11.43	-.0019	.0986	.3136
#2	-.0008	297.6	.1840	1.451	.0087	11.41	-.0024	.0987	.3125
#3	-.0004	296.8	.1829	1.448	.0086	11.39	-.0023	.0992	.3143

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.3915**	**389.9**	**17.06**	**46.78**	F **4.905**	**.0142**	**1.047**	**.2052**	**3.873**
Stddev	.0023	1.8	.05	.09	.006	.0002	.007	.0009	.024
%RSD	.5805	.4536	.3201	.2023	.1314	1.702	.6826	.4597	.6293
#1	.3892	387.9	17.12	46.89	4.901	.0140	1.055	.2041	3.892
#2	.3937	391.2	17.01	46.74	4.903	.0143	1.045	.2058	3.846
#3	.3916	390.5	17.04	46.71	4.913	.0144	1.042	.2056	3.882

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0097**	**-.0007**	**1.519**	**.0248**	**.1921**	**2.658**	**-.0012**	**.5595**	**.7838**
Stddev	.0019	.0038	.003	.0002	.0005	.004	.0015	.0012	.0014
%RSD	19.68	541.8	.1677	.8701	.2767	.1322	134.5	.2202	.1834
#1	.0097	-.0028	1.518	.0251	.1927	2.654	-.0024	.5582	.7837
#2	.0077	.0037	1.517	.0247	.1917	2.657	-.0016	.5596	.7824
#3	.0115	-.0030	1.522	.0248	.1920	2.661	.0006	.5606	.7852

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1987.3**	**6428.8**	**47406.**	**4835.3**
Stddev	9.1	13.0	136.	9.7
%RSD	.45868	.20284	.28687	.20154
#1	1982.1	6442.5	47534.	4834.1
#2	1997.9	6416.6	47421.	4826.2
#3	1982.1	6427.1	47264.	4845.6

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 10:13:43 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2521	40.40	1.993	2.052	2.066	40.98	2.029	2.037	2.050
Stddev	.0012	.18	.002	.014	.012	.20	.003	.001	.006
%RSD	.4685	.4367	.1116	.6557	.5831	.4979	.1670	.0535	.2988
#1	.2525	40.44	1.993	2.059	2.072	41.11	2.025	2.036	2.054
#2	.2531	40.55	1.995	2.061	2.073	41.08	2.029	2.038	2.053
#3	.2508	40.21	1.991	2.037	2.052	40.74	2.032	2.037	2.043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.030	39.78	40.87	40.65	2.119	1.984	40.91	2.058	2.003
Stddev	.007	.16	.29	.15	.010	.003	.22	.004	.006
%RSD	.3289	.3975	.7211	.3701	.4530	.1583	.5393	.1893	.2955
#1	2.037	39.85	40.88	40.75	2.118	1.980	40.99	2.053	1.997
#2	2.025	39.89	41.16	40.72	2.128	1.986	41.08	2.059	2.004
#3	2.027	39.60	40.57	40.47	2.109	1.985	40.66	2.061	2.009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.993	2.008	1.614	2.041	2.049	1.961	2.011	2.041	2.060
Stddev	.007	.006	.003	.005	.011	.006	.002	.007	.008
%RSD	.3720	.3246	.2016	.2575	.5159	.2965	.0811	.3311	.3895
#1	2.001	2.007	1.615	2.035	2.052	1.968	2.010	2.044	2.053
#2	1.992	2.015	1.616	2.043	2.058	1.959	2.013	2.046	2.058
#3	1.986	2.002	1.610	2.045	2.037	1.957	2.012	2.033	2.069
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 10:13:43 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2155.7	5204.3	39195.	4021.5
Stddev	3.0	4.0	127.	20.8
%RSD	.14070	.07666	.32294	.51786
#1	2157.9	5203.4	39097.	4015.4
#2	2157.0	5200.9	39151.	4004.4
#3	2152.2	5208.7	39338.	4044.7

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 10:17:54 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0140	.0000	.0005	.0005	.0127	.0002	.0003	.0004
Stddev	.0001	.0058	.0002	.0003	.0001	.0013	.0000	.0001	.0001
%RSD	33.61	41.19	518.8	62.68	26.70	10.46	14.78	31.85	28.70
#1	.0006	.0088	-.0002	.0008	.0006	.0127	.0003	.0003	.0003
#2	.0003	.0131	.0002	.0002	.0005	.0114	.0002	.0003	.0006
#3	.0004	.0202	.0002	.0004	.0003	.0141	.0003	.0002	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0322	-.0378	.0249	.0005	F .0014	.0088	.0005	-.0002
Stddev	.0003	.0051	.0338	.0264	.0000	.0003	.0029	.0002	.0003
%RSD	51.46	15.78	89.49	106.2	7.390	23.50	33.49	38.95	182.2
#1	.0007	.0378	-.0572	.0456	.0005	.0017	.0056	.0004	-.0005
#2	.0002	.0309	.0013	-.0048	.0005	.0014	.0094	.0007	-.0001
#3	.0006	.0279	-.0574	.0338	.0005	.0010	.0114	.0004	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	.0011	.0018	.0002	.0006	.0010	-.0003	.0002	.0003
Stddev	.0003	.0007	.0003	.0003	.0001	.0001	.0002	.0001	.0002
%RSD	21.00	59.05	17.23	120.2	14.90	7.974	78.89	54.79	51.83
#1	.0016	.0010	.0015	.0005	.0007	.0011	-.0001	.0001	.0005
#2	.0011	.0019	.0021	.0000	.0006	.0010	-.0002	.0002	.0002
#3	.0011	.0005	.0018	.0002	.0005	.0009	-.0005	.0003	.0002
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 10:17:54 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2446.0	5474.8	40884.	4102.3
Stddev	6.1	6.9	227.	16.7
%RSD	.25063	.12596	.55577	.40645
#1	2440.2	5478.3	40659.	4086.1
#2	2452.4	5479.2	40882.	4101.4
#3	2445.3	5466.9	41113.	4119.4

Zoom In Zoom Out

Sample Name: FA35795-2 Acquired: 8/3/2016 10:22:24 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0007**	**273.6**	**.1581**	**1.459**	**.0087**	**13.84**	**-.0018**	**.0815**	**.2910**
Stddev	.0002	.8	.0005	.006	.0000	.08	.0003	.0004	.0005
%RSD	35.75	.2978	.3430	.4024	.2441	.5431	13.87	.4340	.1731
#1	-.0005	274.1	.1578	1.465	.0088	13.88	-.0021	.0811	.2905
#2	-.0005	274.1	.1577	1.459	.0087	13.88	-.0018	.0815	.2911
#3	-.0009	272.7	.1587	1.453	.0087	13.75	-.0016	.0818	.2915

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.3584**	**347.0**	**16.89**	**45.34**	F **4.290**	**.0124**	**1.005**	**.1993**	F **9.944**
Stddev	.0011	2.9	.05	.25	.015	.0003	.010	.0004	.030
%RSD	.3023	.8346	.2686	.5606	.3407	2.322	.9964	.1855	.3046
#1	.3572	349.3	16.91	45.44	4.274	.0123	1.004	.1989	9.912
#2	.3593	347.9	16.92	45.52	4.302	.0127	1.015	.1997	9.947
#3	.3587	343.7	16.84	45.05	4.294	.0121	.9954	.1994	9.972

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0245**	**-.0013**	**1.668**	**.0268**	**.1990**	**2.593**	**-.0034**	**.5084**	**.7618**
Stddev	.0008	.0018	.001	.0001	.0013	.005	.0034	.0018	.0016
%RSD	3.394	136.5	.0687	.4605	.6438	.1908	101.8	.3542	.2153
#1	.0236	-.0004	1.667	.0267	.2001	2.587	-.0032	.5071	.7603
#2	.0250	-.0033	1.668	.0270	.1992	2.596	-.0068	.5076	.7615
#3	.0250	-.0002	1.669	.0268	.1976	2.595	.0000	.5105	.7635

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2017.6**	**6591.7**	**48809.**	**4984.5**
Stddev	5.4	9.3	47.	53.5
%RSD	.26785	.14155	.09550	1.0737
#1	2022.9	6596.3	48762.	4964.5
#2	2017.6	6597.8	48811.	4943.8
#3	2012.1	6580.9	48855.	5045.1

Zoom In Zoom Out

Sample Name: FA35795-3 Acquired: 8/3/2016 10:26:57 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0005**	**216.4**	**.1545**	**1.152**	**.0073**	**9.729**	**-.0004**	**.0997**	**.2549**
Stddev	.0001	.5	.0004	.004	.0001	.019	.0002	.0002	.0007
%RSD	23.67	.2368	.2629	.3893	.8158	.1983	60.93	.1996	.2719
#1	-.0005	216.3	.1544	1.156	.0072	9.710	-.0001	.0998	.2543
#2	-.0004	215.9	.1550	1.147	.0073	9.728	-.0006	.0995	.2556
#3	-.0006	216.9	.1542	1.154	.0073	9.749	-.0004	.0998	.2547

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2851**	**309.5**	**13.67**	**36.15**	F **6.897**	**.0116**	**.9920**	**.1646**	**3.257**
Stddev	.0016	3.8	.06	.14	.033	.0001	.0146	.0003	.008
%RSD	.5725	1.221	.4183	.3776	.4839	.6082	1.472	.1660	.2525
#1	.2870	305.6	13.66	35.99	6.933	.0116	.9902	.1645	3.266
#2	.2847	313.2	13.72	36.23	6.890	.0117	.9784	.1643	3.251
#3	.2838	309.7	13.61	36.22	6.868	.0117	1.007	.1649	3.253

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0083**	**.0013**	**2.994**	**.0216**	**.1427**	**3.049**	**-.0032**	**.5027**	**.6138**
Stddev	.0013	.0032	.002	.0001	.0003	.024	.0020	.0009	.0027
%RSD	15.68	244.9	.0637	.6406	.2254	.7741	63.82	.1880	.4332
#1	.0088	-.0013	2.993	.0217	.1426	3.022	-.0054	.5037	.6167
#2	.0068	.0003	2.996	.0216	.1424	3.066	-.0027	.5018	.6132
#3	.0093	.0048	2.994	.0214	.1430	3.058	-.0015	.5027	.6114

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2080.5**	**6184.2**	**45881.**	**4667.3**
Stddev	.5	5.1	226.	27.9
%RSD	.02434	.08211	.49155	.59824
#1	2080.3	6181.8	46045.	4698.8
#2	2080.1	6180.8	45624.	4645.5
#3	2081.1	6190.1	45974.	4657.7

Zoom In Zoom Out

Sample Name: FA35795-4 Acquired: 8/3/2016 10:31:34 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**263.1**	**.1752**	**1.320**	**.0086**	**9.762**	**-.0021**	**.1150**	**.2974**
Stddev	.0001	.5	.0002	.003	.0001	.032	.0001	.0001	.0008
%RSD	130.3	.1944	.1240	.1953	.9867	.3318	6.364	.1226	.2641
#1	-.0002	262.9	.1750	1.319	.0086	9.776	-.0023	.1148	.2976
#2	.0000	262.6	.1755	1.317	.0085	9.725	-.0020	.1150	.2981
#3	.0000	263.6	.1752	1.322	.0085	9.785	-.0020	.1151	.2965

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2395**	**365.1**	**15.19**	**42.71**	F **8.315**	**.0133**	**1.524**	**.1967**	**1.394**
Stddev	.0004	2.2	.11	.18	.012	.0004	.007	.0004	.008
%RSD	.1769	.5944	.7380	.4289	.1482	3.123	.4835	.1914	.5491
#1	.2399	367.2	15.19	42.76	8.327	.0134	1.516	.1970	1.387
#2	.2390	362.9	15.08	42.50	8.303	.0129	1.526	.1963	1.392
#3	.2395	365.3	15.31	42.85	8.316	.0137	1.530	.1968	1.402

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0043**	**.0030**	**3.761**	**.0211**	**.1436**	**3.377**	**.0000**	**.6052**	**.6783**
Stddev	.0015	.0019	.005	.0003	.0010	.027	.002	.0009	.0002
%RSD	35.10	62.41	.1465	1.368	.7200	.7981	10220.	.1508	.0322
#1	.0026	.0028	3.767	.0209	.1436	3.402	.0017	.6046	.6781
#2	.0049	.0050	3.756	.0209	.1426	3.348	-.0002	.6047	.6784
#3	.0055	.0012	3.760	.0214	.1447	3.380	-.0016	.6063	.6785

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2028.3**	**6225.3**	**46214.**	**4680.5**
Stddev	6.8	7.9	28.	25.7
%RSD	.33734	.12732	.06004	.54928
#1	2034.6	6217.4	46238.	4659.7
#2	2029.3	6233.2	46184.	4709.2
#3	2021.0	6225.4	46221.	4672.6

Zoom In Zoom Out

Sample Name: FA35795-5 Acquired: 8/3/2016 10:36:14 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0014**	**212.7**	**.1375**	**1.739**	**.0067**	**6.565**	**-.0017**	**.1691**	**.2360**
Stddev	.0002	.8	.0009	.007	.0001	.024	.0002	.0004	.0014
%RSD	13.65	.3560	.6386	.3776	1.109	.3684	9.314	.2344	.6016
#1	.0017	212.5	.1383	1.740	.0067	6.572	-.0018	.1690	.2370
#2	.0013	213.6	.1365	1.745	.0068	6.585	-.0018	.1688	.2367
#3	.0014	212.1	.1376	1.732	.0066	6.538	-.0015	.1696	.2344

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1837**	**283.8**	**12.35**	**33.70**	F **18.51**	**.0150**	**.9564**	**.1733**	**1.277**
Stddev	.0013	.8	.02	.07	.09	.0001	.0124	.0002	.003
%RSD	.7135	.2723	.2020	.2175	.4706	.9127	1.301	.1287	.2050
#1	.1825	283.4	12.37	33.70	18.43	.0149	.9649	.1730	1.279
#2	.1851	284.7	12.35	33.76	18.51	.0151	.9622	.1734	1.278
#3	.1835	283.3	12.32	33.62	18.60	.0151	.9421	.1734	1.274

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0068**	**.0041**	**1.536**	**.0197**	**.1084**	**2.973**	**.0087**	**.4851**	**.5373**
Stddev	.0005	.0025	.002	.0004	.0004	.009	.0016	.0015	.0014
%RSD	7.831	61.07	.1528	1.855	.3886	.2984	18.90	.3138	.2569
#1	.0070	.0020	1.534	.0193	.1081	2.974	.0096	.4859	.5387
#2	.0071	.0035	1.535	.0200	.1088	2.982	.0097	.4861	.5374
#3	.0062	.0069	1.538	.0197	.1081	2.964	.0068	.4834	.5360

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2099.7**	**5957.3**	**43804.**	**4446.2**
Stddev	5.3	11.0	106.	24.4
%RSD	.25085	.18391	.24175	.54959
#1	2095.3	5959.0	43683.	4471.1
#2	2098.2	5967.3	43848.	4422.2
#3	2105.5	5945.6	43880.	4445.2

Zoom In Zoom Out

Sample Name: FA35795-6 Acquired: 8/3/2016 10:40:39 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0012**	**196.9**	**.1885**	**1.701**	**.0102**	**6.794**	**-.0005**	**.1953**	**.2517**
Stddev	.0003	.4	.0007	.004	.0001	.029	.0004	.0002	.0006
%RSD	22.68	.1855	.3843	.2084	.8220	.4269	67.34	.1042	.2536
#1	.0013	196.9	.1882	1.697	.0102	6.825	-.0009	.1951	.2510
#2	.0009	197.2	.1893	1.704	.0101	6.790	-.0002	.1955	.2522
#3	.0014	196.5	.1879	1.701	.0102	6.767	-.0006	.1952	.2520

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2020**	**339.6**	**10.72**	**28.59**	F **21.95**	**.0154**	**.8981**	**.1652**	**2.152**
Stddev	.0007	3.0	.01	.13	.01	.0004	.0081	.0004	.007
%RSD	.3599	.8945	.1233	.4492	.0313	2.320	.9037	.2361	.3224
#1	.2028	342.9	10.71	28.73	21.96	.0157	.8998	.1656	2.158
#2	.2014	336.8	10.71	28.50	21.95	.0150	.9052	.1651	2.144
#3	.2018	339.2	10.73	28.52	21.94	.0155	.8892	.1649	2.154

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0081**	**.0045**	**1.437**	**.0188**	**.1027**	**2.267**	**.0128**	**.5944**	**.5254**
Stddev	.0007	.0022	.001	.0002	.0001	.008	.0038	.0016	.0011
%RSD	8.796	49.01	.0450	1.325	.1175	.3582	29.28	.2630	.2043
#1	.0089	.0071	1.437	.0188	.1027	2.272	.0086	.5942	.5265
#2	.0076	.0035	1.438	.0191	.1028	2.258	.0140	.5930	.5243
#3	.0078	.0030	1.436	.0187	.1026	2.272	.0159	.5961	.5255

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2066.0**	**6212.0**	**46032.**	**4640.2**
Stddev	9.3	5.4	279.	31.6
%RSD	.45037	.08662	.60662	.68002
#1	2058.9	6208.1	46353.	4604.1
#2	2076.6	6209.7	45893.	4654.1
#3	2062.6	6218.1	45850.	4662.6

Zoom In Zoom Out

Sample Name: FA35796-1 Acquired: 8/3/2016 10:45:13 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**66.96**	**.0545**	**.5235**	**.0043**	**112.5**	**.0007**	**.1092**	**.1347**
Stddev	.0002	.06	.0007	.0019	.0000	.3	.0001	.0001	.0006
%RSD	429.5	.0846	1.294	.3681	.1955	.3081	9.114	.1307	.4124
#1	-.0003	66.90	.0552	.5218	.0043	112.2	.0007	.1093	.1342
#2	.0001	67.01	.0545	.5233	.0042	112.8	.0006	.1091	.1353
#3	.0000	66.95	.0538	.5256	.0043	112.3	.0007	.1091	.1347

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1210**	**172.4**	**8.116**	**59.82**	F **5.930**	**.0075**	**.4600**	**.1962**	**.1573**
Stddev	.0001	.2	.035	.13	.036	.0001	.0073	.0003	.0008
%RSD	.0728	.1200	.4354	.2162	.6137	1.944	1.586	.1619	.5005
#1	.1209	172.3	8.129	59.75	5.890	.0073	.4685	.1965	.1571
#2	.1211	172.7	8.077	59.97	5.961	.0076	.4554	.1959	.1567
#3	.1210	172.3	8.144	59.73	5.941	.0076	.4563	.1960	.1582

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0018**	**-.0001**	**2.410**	**.0163**	**.1003**	**2.098**	**-.0007**	**.2312**	**.4486**
Stddev	.0010	.0022	.000	.0002	.0002	.007	.0013	.0003	.0007
%RSD	54.98	4078.	.0186	1.301	.1568	.3317	196.6	.1104	.1458
#1	.0029	.0007	2.410	.0164	.1004	2.093	.0006	.2310	.4483
#2	.0016	-.0025	2.410	.0161	.1004	2.096	-.0020	.2315	.4493
#3	.0010	.0016	2.410	.0165	.1001	2.106	-.0007	.2312	.4482

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2110.5**	**6019.0**	**45407.**	**4619.4**
Stddev	6.7	11.5	173.	19.7
%RSD	.31859	.19171	.38085	.42609
#1	2115.2	6018.7	45605.	4628.8
#2	2102.8	6007.7	45333.	4596.8
#3	2113.6	6030.7	45283.	4632.7

Zoom In Zoom Out

Sample Name: FA35796-2 Acquired: 8/3/2016 10:49:40 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**78.38**	**.0503**	**.5864**	**.0041**	**41.06**	**.0001**	**.0819**	**.1165**
Stddev	.0005	.08	.0007	.0019	.0001	.04	.0001	.0001	.0004
%RSD	348.9	.1068	1.402	.3165	1.458	.0898	177.6	.1227	.3252
#1	-.0006	78.34	.0511	.5885	.0042	41.04	.0000	.0820	.1163
#2	-.0003	78.33	.0498	.5854	.0041	41.04	.0001	.0819	.1170
#3	.0004	78.48	.0501	.5852	.0041	41.10	.0000	.0818	.1163

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1092**	**125.6**	**7.107**	**29.47**	F **4.218**	**.0060**	**.3250**	**.1477**	**.2198**
Stddev	.0003	.2	.041	.16	.026	.0001	.0036	.0004	.0020
%RSD	.3062	.1939	.5770	.5474	.6078	1.242	1.111	.2525	.8945
#1	.1089	125.4	7.075	29.32	4.211	.0060	.3227	.1476	.2221
#2	.1092	125.6	7.091	29.64	4.247	.0059	.3231	.1481	.2183
#3	.1096	125.9	7.153	29.45	4.198	.0061	.3291	.1474	.2192

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0014**	**-.0014**	**2.388**	**.0163**	**.0680**	**1.849**	**-.0016**	**.1917**	**.3755**
Stddev	.0010	.0007	.004	.0003	.0002	.002	.0009	.0004	.0006
%RSD	75.64	54.64	.1498	1.801	.3616	.1044	53.04	.2341	.1717
#1	.0014	-.0017	2.388	.0164	.0677	1.849	-.0026	.1922	.3748
#2	.0024	-.0019	2.384	.0166	.0680	1.851	-.0014	.1917	.3761
#3	.0003	-.0005	2.391	.0160	.0682	1.847	-.0009	.1913	.3757

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2205.2**	**6051.8**	**45093.**	**4575.8**
Stddev	4.8	11.1	132.	1.9
%RSD	.21582	.18369	.29316	.04086
#1	2200.6	6045.8	45133.	4577.4
#2	2210.1	6045.0	44946.	4573.7
#3	2204.8	6064.7	45201.	4576.4

Zoom In Zoom Out

Sample Name: FA35796-3 Acquired: 8/3/2016 10:54:08 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0000**	**74.32**	**.0527**	**.6851**	**.0043**	**68.55**	**.0010**	**.0824**	**.1163**
Stddev	.0003	.13	.0003	.0008	.0001	.08	.0001	.0003	.0002
%RSD	1832.	.1737	.5061	.1124	2.140	.1238	5.422	.3722	.1414
#1	.0002	74.30	.0530	.6856	.0043	68.56	.0010	.0824	.1161
#2	.0002	74.20	.0525	.6842	.0042	68.63	.0011	.0821	.1164
#3	-.0004	74.45	.0526	.6855	.0044	68.46	.0010	.0828	.1163

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1263**	**127.5**	**7.889**	**41.97**	F **5.163**	**.0053**	**.3480**	**.1447**	**.4095**
Stddev	.0010	.1	.019	.04	.050	.0000	.0049	.0007	.0010
%RSD	.8230	.1144	.2366	.1008	.9676	.3625	1.422	.4493	.2427
#1	.1275	127.6	7.886	42.01	5.106	.0053	.3531	.1441	.4090
#2	.1257	127.4	7.909	41.97	5.199	.0053	.3433	.1447	.4089
#3	.1258	127.3	7.873	41.92	5.185	.0053	.3475	.1454	.4106

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0015**	**-.0016**	**2.590**	**.0162**	**.0855**	**1.811**	**-.0009**	**.2040**	**.4501**
Stddev	.0002	.0026	.005	.0004	.0006	.002	.0016	.0007	.0010
%RSD	16.17	162.2	.2133	2.608	.7488	.1252	170.5	.3251	.2277
#1	.0017	-.0021	2.584	.0167	.0860	1.813	-.0001	.2033	.4508
#2	.0016	-.0040	2.593	.0159	.0848	1.811	-.0027	.2041	.4489
#3	.0012	.0012	2.594	.0161	.0858	1.809	.0001	.2047	.4506

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2180.6**	**6071.9**	**45691.**	**4574.6**
Stddev	3.7	.6	92.	2.2
%RSD	.16922	.01034	.20238	.04813
#1	2180.9	6071.4	45785.	4576.8
#2	2176.7	6072.6	45600.	4572.4
#3	2184.1	6071.8	45687.	4574.5

Zoom In Zoom Out

Sample Name: FA35796-4 Acquired: 8/3/2016 10:58:35 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0001**	**55.34**	**.0358**	**.9629**	**.0045**	**35.43**	**.0014**	**.0719**	**.0883**
Stddev	.0002	.18	.0010	.0064	.0001	.06	.0001	.0002	.0006
%RSD	198.7	.3196	2.921	.6682	1.277	.1629	7.107	.2739	.7108
#1	.0000	55.54	.0348	.9699	.0045	35.38	.0014	.0719	.0881
#2	.0002	55.19	.0356	.9572	.0044	35.42	.0013	.0717	.0877
#3	.0000	55.29	.0369	.9615	.0045	35.49	.0014	.0721	.0889

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0694**	**106.8**	**6.441**	**23.17**	**F 7.537**	**.0044**	**.2668**	**.1055**	**.1540**
Stddev	.0003	.1	.041	.07	.040	.0001	.0057	.0000	.0012
%RSD	.4347	.1314	.6351	.2896	.5317	2.482	2.140	.0334	.7480
#1	.0691	107.0	6.481	23.11	7.531	.0045	.2733	.1054	.1553
#2	.0694	106.7	6.443	23.16	7.579	.0044	.2626	.1055	.1535
#3	.0697	106.9	6.399	23.24	7.500	.0043	.2644	.1055	.1532

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0022**	**-.0014**	**1.895**	**.0150**	**.0695**	**2.085**	**.0017**	**.1822**	**.3927**
Stddev	.0014	.0025	.004	.0001	.0003	.002	.0023	.0003	.0013
%RSD	62.92	181.5	.2067	.9082	.4990	.0741	137.1	.1431	.3426
#1	.0006	-.0042	1.899	.0152	.0699	2.085	.0010	.1823	.3924
#2	.0028	-.0005	1.894	.0149	.0693	2.083	.0043	.1825	.3942
#3	.0031	.0006	1.892	.0149	.0693	2.086	-.0002	.1819	.3915

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2240.3**	**6145.4**	**46020.**	**4621.5**
Stddev	7.5	10.5	209.	16.2
%RSD	.33457	.17012	.45428	.35081
#1	2235.6	6134.4	45804.	4628.1
#2	2236.4	6155.2	46035.	4633.3
#3	2249.0	6146.8	46222.	4603.0

Zoom In Zoom Out

Sample Name: FA35796-5 Acquired: 8/3/2016 11:03:01 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**83.64**	**.0487**	**.4850**	**.0038**	**11.08**	**-.0005**	**.0809**	**.1222**
Stddev	.0003	.44	.0009	.0017	.0000	.05	.0002	.0002	.0004
%RSD	380.5	.5244	1.897	.3563	.7853	.4906	34.07	.2979	.3129
#1	-.0002	83.90	.0484	.4869	.0038	11.12	-.0005	.0808	.1218
#2	.0002	83.89	.0497	.4849	.0038	11.09	-.0006	.0807	.1223
#3	-.0003	83.14	.0480	.4834	.0039	11.02	-.0003	.0812	.1226

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1135**	**126.0**	**6.733**	**15.93**	**3.722**	**.0046**	**.2188**	**.1431**	**.4168**
Stddev	.0009	.7	.012	.04	.015	.0001	.0064	.0004	.0034
%RSD	.7534	.5706	.1821	.2397	.4032	1.726	2.935	.2512	.8170
#1	.1125	126.6	6.723	15.93	3.705	.0047	.2236	.1427	.4129
#2	.1139	126.2	6.747	15.98	3.728	.0046	.2213	.1432	.4192
#3	.1140	125.2	6.729	15.90	3.733	.0046	.2115	.1434	.4182

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0021**	**-.0011**	**1.462**	**.0165**	**.0551**	**1.780**	**-.0004**	**.2025**	**.3389**
Stddev	.0011	.0011	.004	.0005	.0004	.005	.0007	.0003	.0007
%RSD	51.76	106.2	.2538	3.228	.6388	.2935	159.0	.1481	.2116
#1	.0008	-.0009	1.463	.0170	.0551	1.776	-.0010	.2024	.3383
#2	.0028	.0000	1.457	.0164	.0554	1.786	-.0006	.2029	.3388
#3	.0026	-.0023	1.464	.0160	.0547	1.778	.0003	.2023	.3397

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2235.3**	**6094.5**	**45469.**	**4543.1**
Stddev	4.6	17.7	199.	18.5
%RSD	.20753	.29031	.43797	.40789
#1	2239.3	6089.2	45239.	4529.6
#2	2236.3	6114.2	45592.	4535.4
#3	2230.2	6080.1	45575.	4564.2

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 11:07:28 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2540**	**40.61**	**1.980**	**2.075**	**2.082**	**41.41**	**2.019**	**2.035**	**2.054**
Stddev	.0006	.02	.004	.006	.001	.10	.001	.002	.006
%RSD	.2280	.0581	.2287	.2872	.0415	.2500	.0702	.0964	.2925
#1	.2534	40.63	1.975	2.081	2.082	41.32	2.019	2.033	2.052
#2	.2545	40.59	1.979	2.069	2.083	41.52	2.020	2.037	2.049
#3	.2541	40.63	1.984	2.076	2.081	41.39	2.017	2.035	2.061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.033**	**39.67**	**41.54**	**40.88**	**2.137**	**1.979**	**41.47**	**2.067**	**2.000**
Stddev	.005	.06	.05	.23	.007	.002	.05	.002	.003
%RSD	.2514	.1561	.1126	.5577	.3323	.0969	.1097	.0734	.1643
#1	2.028	39.60	41.58	40.63	2.135	1.978	41.47	2.066	1.999
#2	2.038	39.69	41.49	41.08	2.131	1.979	41.51	2.068	1.997
#3	2.035	39.72	41.56	40.93	2.145	1.982	41.42	2.066	2.003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.980**	**1.998**	**1.605**	**2.048**	**2.069**	**1.952**	**2.001**	**2.058**	**2.069**
Stddev	.004	.006	.002	.001	.002	.006	.002	.009	.005
%RSD	.1803	.3048	.1096	.0366	.0969	.3315	.1114	.4465	.2575
#1	1.984	2.000	1.604	2.048	2.072	1.945	2.003	2.054	2.069
#2	1.977	1.992	1.605	2.048	2.069	1.957	1.998	2.050	2.074
#3	1.979	2.004	1.607	2.047	2.068	1.956	2.001	2.068	2.063
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 11:07:28 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2157.3**	**5232.5**	**39141.**	**3968.5**
Stddev	1.9	6.5	130.	23.6
%RSD	.08683	.12345	.33095	.59355
#1	2157.1	5234.2	39268.	3971.9
#2	2155.6	5225.3	39145.	3943.5
#3	2159.3	5237.9	39009.	3990.2

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 11:11:40 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**-.0045**	**-.0001**	**.0000**	**.0003**	**.0101**	**.0002**	**.0003**	**.0004**
Stddev	.0002	.0108	.0010	.000	.0000	.0008	.0000	.0000	.0000
%RSD	177.6	242.1	1241.	486.7	2.942	7.758	18.45	6.639	3.955
#1	.0003	-.0167	.0010	-.0002	.0003	.0095	.0002	.0003	.0004
#2	-.0001	.0037	-.0006	-.0002	.0003	.0110	.0003	.0003	.0003
#3	.0001	-.0004	-.0006	.0002	.0003	.0098	.0002	.0003	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0216**	**-.0172**	**-.0015**	**.0004**	**F .0014**	**.0010**	**.0003**	**-.0002**
Stddev	.0003	.0020	.0478	.0218	.0000	.0002	.0070	.0003	.0004
%RSD	68.37	9.210	277.2	1417.	1.681	15.76	671.1	76.17	192.2
#1	.0005	.0231	.0315	.0235	.0004	.0016	.0019	.0005	.0003
#2	.0001	.0223	-.0192	-.0167	.0004	.0013	.0076	.0000	-.0005
#3	.0005	.0193	-.0640	-.0114	.0004	.0012	-.0063	.0004	-.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0013**	**.0006**	**.0020**	**.0003**	**.0004**	**.0006**	**.0002**	**-.0001**	**.0003**
Stddev	.0018	.0010	.0002	.0002	.0000	.0001	.0002	.0002	.0001
%RSD	140.2	187.1	11.52	67.10	10.02	11.30	117.5	174.0	30.34
#1	.0033	.0017	.0023	.0005	.0004	.0007	.0002	-.0003	.0003
#2	.0004	-.0004	.0021	.0003	.0005	.0006	.0003	-.0003	.0002
#3	.0001	.0003	.0018	.0001	.0004	.0006	.0000	.0001	.0002
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 11:11:40 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2445.2**	**5503.7**	**41142.**	**4034.2**
Stddev	6.3	7.1	205.	24.8
%RSD	.25850	.12934	.49752	.61516
#1	2448.7	5500.4	41376.	4054.9
#2	2449.0	5511.8	40997.	4041.1
#3	2437.9	5498.8	41053.	4006.7

Zoom In Zoom Out

Sample Name: FA35796-6 Acquired: 8/3/2016 11:16:10 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0000**	**59.56**	**.0428**	**.4845**	**.0033**	**82.57**	**.0005**	**.0723**	**.0886**
Stddev	.000	.15	.0007	.0019	.0001	.21	.0000	.0004	.0003
%RSD	1398.	.2499	1.540	.3937	2.039	.2600	2.291	.4943	.3039
#1	.0002	59.64	.0422	.4855	.0033	82.80	.0005	.0720	.0884
#2	.0000	59.39	.0435	.4823	.0033	82.37	.0005	.0722	.0889
#3	-.0003	59.66	.0426	.4857	.0032	82.53	.0005	.0727	.0885

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1132**	**104.1**	**6.394**	**42.66**	**3.917**	**.0052**	**.3686**	**.1286**	**.4040**
Stddev	.0001	.3	.040	.17	.012	.0001	.0052	.0005	.0022
%RSD	.0855	.2539	.6226	.3891	.3033	2.720	1.413	.3820	.5374
#1	.1133	104.2	6.421	42.82	3.929	.0053	.3715	.1283	.4031
#2	.1133	103.8	6.412	42.49	3.916	.0050	.3626	.1283	.4024
#3	.1131	104.3	6.348	42.68	3.905	.0052	.3718	.1292	.4065

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0022**	**-.0003**	**2.319**	**.0155**	**.0778**	**1.520**	**-.0014**	**.1724**	**.3521**
Stddev	.0008	.0010	.003	.0002	.0006	.002	.0006	.0003	.0013
%RSD	35.01	364.1	.1063	1.004	.8130	.1306	44.83	.1822	.3590
#1	.0017	-.0009	2.319	.0156	.0777	1.520	-.0010	.1725	.3511
#2	.0018	-.0008	2.317	.0155	.0773	1.522	-.0022	.1726	.3517
#3	.0030	.0009	2.322	.0153	.0785	1.518	-.0012	.1720	.3535

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2184.3**	**5873.0**	**44229.**	**4425.3**
Stddev	.8	6.0	199.	10.9
%RSD	.03564	.10282	.45096	.24683
#1	2184.9	5879.0	43999.	4412.7
#2	2183.5	5873.3	44335.	4431.2
#3	2184.7	5866.9	44353.	4432.0

Zoom In Zoom Out

Sample Name: FA35796-7 Acquired: 8/3/2016 11:20:37 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0000**	**57.76**	**.0544**	**.3265**	**.0030**	**177.8**	**.0022**	**.0717**	**.0985**
Stddev	.001	.14	.0007	.0005	.0000	1.9	.0001	.0002	.0003
%RSD	1588.	.2376	1.240	.1566	.2896	1.092	5.509	.3024	.3065
#1	.0001	57.83	.0549	.3270	.0030	179.3	.0022	.0715	.0989
#2	-.0005	57.84	.0536	.3259	.0030	178.4	.0021	.0719	.0984
#3	.0003	57.60	.0546	.3266	.0030	175.6	.0023	.0718	.0984

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1105**	**116.1**	**6.428**	**88.71**	**3.518**	**.0065**	**.5117**	**.1535**	**.1558**
Stddev	.0002	.4	.058	.47	.039	.0003	.0131	.0002	.0012
%RSD	.1574	.3640	.9078	.5273	1.112	5.004	2.562	.1434	.7792
#1	.1106	116.4	6.495	89.14	3.555	.0069	.5248	.1533	.1552
#2	.1105	116.3	6.407	88.78	3.477	.0062	.5118	.1536	.1572
#3	.1103	115.7	6.384	88.21	3.521	.0065	.4985	.1537	.1550

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0021**	**.0017**	**2.804**	**.0207**	**.1090**	**2.035**	**-.0027**	**.1598**	**1.584**
Stddev	.0009	.0011	.006	.0003	.0001	.010	.0015	.0007	.003
%RSD	40.86	60.40	.2081	1.293	.1188	.5105	56.24	.4467	.1555
#1	.0027	.0026	2.800	.0207	.1090	2.047	-.0031	.1605	1.587
#2	.0025	.0006	2.802	.0209	.1089	2.027	-.0011	.1591	1.582
#3	.0011	.0021	2.811	.0204	.1091	2.031	-.0041	.1598	1.584

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2098.7**	**6031.7**	**45425.**	**4590.7**
Stddev	7.1	3.7	252.	50.8
%RSD	.33947	.06167	.55585	1.1071
#1	2095.1	6031.1	45143.	4541.3
#2	2094.1	6028.3	45631.	4587.9
#3	2106.9	6035.7	45501.	4642.8

SGS ACCUTEST FA35653

Zoom In Zoom Out

Sample Name: FA35796-8 Acquired: 8/3/2016 11:25:11 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0000**	**113.5**	**.0677**	**.8504**	**.0058**	**35.17**	**.0000**	**.1121**	**.1508**
Stddev	.0005	.4	.0004	.0034	.0000	.24	.000	.0001	.0005
%RSD	1434.	.3455	.6091	.4056	.6656	.6904	361.9	.0933	.3506
#1	.0001	113.1	.0676	.8481	.0059	35.04	.0000	.1122	.1507
#2	-.0005	113.9	.0681	.8543	.0058	35.45	-.0001	.1120	.1503
#3	.0004	113.6	.0673	.8486	.0058	35.03	.0000	.1121	.1513

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.3406**	**167.3**	**11.68**	**23.44**	**F 5.588**	**.0076**	**.4510**	**.1833**	**2.971**
Stddev	.0004	.6	.06	.15	.010	.0002	.0028	.0001	.009
%RSD	.1132	.3641	.4975	.6263	.1743	2.658	.6106	.0311	.2887
#1	.3402	166.8	11.62	23.27	5.578	.0076	.4536	.1834	2.966
#2	.3405	168.0	11.74	23.54	5.589	.0078	.4481	.1834	2.966
#3	.3410	167.0	11.68	23.50	5.597	.0074	.4512	.1833	2.981

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0022**	**-.0014**	**3.098**	**.0163**	**.1176**	**2.371**	**-.0014**	**.2714**	**.5447**
Stddev	.0009	.0015	.004	.0006	.0004	.007	.0012	.0008	.0005
%RSD	41.60	105.7	.1444	3.856	.3636	.2862	83.73	.2949	.0880
#1	.0013	-.0003	3.098	.0164	.1171	2.366	-.0026	.2712	.5450
#2	.0031	-.0008	3.093	.0157	.1178	2.369	-.0015	.2707	.5441
#3	.0021	-.0031	3.102	.0169	.1179	2.379	-.0002	.2723	.5450

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2173.8**	**6179.2**	**46171.**	**4641.1**
Stddev	6.9	2.9	145.	20.0
%RSD	.31780	.04681	.31387	.43182
#1	2181.0	6182.4	46171.	4658.1
#2	2172.9	6178.5	46316.	4619.0
#3	2167.3	6176.8	46026.	4646.2

Zoom In Zoom Out

Sample Name: FA35796-9 Acquired: 8/3/2016 11:29:37 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0003**	**63.16**	**.0389**	**.7322**	**.0040**	**15.71**	**.0005**	**.0714**	**.0999**
Stddev	.0002	.12	.0005	.0019	.0001	.06	.0001	.0002	.0004
%RSD	67.20	.1935	1.331	.2618	2.050	.3573	11.83	.2180	.3766
#1	.0004	63.08	.0385	.7320	.0039	15.65	.0006	.0713	.0995
#2	.0004	63.30	.0386	.7304	.0039	15.77	.0004	.0715	.1003
#3	.0001	63.11	.0394	.7343	.0041	15.72	.0005	.0712	.0997

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1862**	**112.0**	**6.973**	**12.61**	**F 5.489**	**.0053**	**.2279**	**.1118**	**1.171**
Stddev	.0009	.3	.045	.06	.011	.0001	.0145	.0002	.003
%RSD	.5004	.2697	.6532	.5143	.2058	.9887	6.349	.1699	.2689
#1	.1870	111.7	6.972	12.54	5.501	.0053	.2384	.1118	1.172
#2	.1864	112.3	7.018	12.67	5.478	.0052	.2114	.1121	1.168
#3	.1852	111.9	6.927	12.61	5.487	.0053	.2338	.1117	1.174

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0017**	**-.0003**	**2.393**	**.0161**	**.0730**	**1.799**	**-.0004**	**.1878**	**.3772**
Stddev	.0014	.0010	.001	.0002	.0001	.002	.0003	.0003	.0005
%RSD	79.64	359.9	.0505	1.439	.1916	.1028	82.72	.1609	.1340
#1	.0031	-.0002	2.394	.0160	.0728	1.801	-.0002	.1877	.3767
#2	.0003	-.0013	2.392	.0159	.0731	1.798	-.0003	.1881	.3774
#3	.0018	.0007	2.393	.0164	.0731	1.798	-.0007	.1875	.3776

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2263.2**	**6075.5**	**45445.**	**4541.9**
Stddev	8.1	16.9	70.	11.8
%RSD	.35872	.27785	.15342	.25972
#1	2256.9	6056.2	45521.	4554.4
#2	2272.4	6087.2	45383.	4531.0
#3	2260.3	6083.2	45432.	4540.3

Zoom In Zoom Out

Sample Name: FA35796-10 Acquired: 8/3/2016 11:34:04 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0001**	**88.39**	**.0502**	**.4809**	**.0040**	**11.29**	**-.0006**	**.0922**	**.1451**
Stddev	.0004	.27	.0013	.0017	.0000	.05	.0000	.0002	.0005
%RSD	256.3	.3013	2.534	.3487	.1180	.4209	2.094	.1866	.3205
#1	.0001	88.34	.0516	.4795	.0040	11.29	-.0006	.0924	.1449
#2	-.0002	88.15	.0492	.4804	.0040	11.25	-.0006	.0920	.1456
#3	.0005	88.68	.0498	.4828	.0040	11.34	-.0006	.0922	.1448

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1082**	**137.9**	**6.633**	**17.79**	**3.919**	**.0049**	**.2467**	**.1644**	**.1625**
Stddev	.0002	.3	.061	.07	.013	.0002	.0051	.0005	.0020
%RSD	.1671	.1839	.9167	.4182	.3255	3.176	2.079	.2822	1.201
#1	.1082	137.7	6.621	17.78	3.905	.0047	.2408	.1642	.1625
#2	.1083	137.8	6.578	17.72	3.929	.0050	.2501	.1640	.1645
#3	.1080	138.2	6.698	17.87	3.924	.0049	.2492	.1649	.1606

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0011**	**.0000**	**2.689**	**.0162**	**.0584**	**2.035**	**-.0018**	**.2434**	**.3891**
Stddev	.0015	.0024	.005	.0004	.0001	.007	.0015	.0008	.0003
%RSD	134.4	12970.	.1818	2.323	.2530	.3629	83.21	.3281	.0731
#1	.0011	-.0024	2.690	.0165	.0585	2.039	-.0004	.2428	.3887
#2	-.0004	.0023	2.684	.0158	.0582	2.039	-.0035	.2443	.3892
#3	.0026	.0001	2.693	.0164	.0584	2.026	-.0016	.2432	.3893

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2227.1**	**6165.1**	**45888.**	**4557.7**
Stddev	3.3	4.6	136.	21.7
%RSD	.14626	.07503	.29716	.47634
#1	2230.5	6164.8	45959.	4560.2
#2	2226.8	6169.9	45730.	4578.0
#3	2224.0	6160.6	45974.	4534.8

Zoom In Zoom Out

Sample Name: FA35800-21 Acquired: 8/3/2016 11:38:31 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**192.3**	**.0853**	**.2501**	**.0023**	**5.603**	**-.0026**	**.0079**	**.1980**
Stddev	.0004	.5	.0003	.0008	.0001	.027	.0001	.0001	.0003
%RSD	434.3	.2584	.3646	.3217	3.057	.4803	2.327	1.077	.1516
#1	-.0002	192.4	.0856	.2498	.0023	5.603	-.0027	.0080	.1978
#2	-.0004	192.7	.0853	.2511	.0022	5.629	-.0026	.0078	.1983
#3	.0003	191.7	.0850	.2496	.0023	5.575	-.0026	.0080	.1979

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0477**	**229.5**	**3.591**	**2.599**	**.0887**	**.0066**	**.1673**	**.0450**	**.0533**
Stddev	.0001	.2	.030	.032	.0002	.0001	.0131	.0005	.0008
%RSD	.1061	.0974	.8236	1.228	.2777	2.079	7.837	1.220	1.521
#1	.0478	229.7	3.557	2.580	.0884	.0068	.1677	.0445	.0541
#2	.0477	229.7	3.611	2.635	.0889	.0066	.1802	.0450	.0525
#3	.0478	229.3	3.605	2.580	.0888	.0065	.1540	.0456	.0534

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0004**	**.0044**	**2.988**	**.0229**	**.0282**	**.5509**	**-.0047**	**.4076**	**.0556**
Stddev	.0018	.0023	.002	.0002	.0003	.0014	.0016	.0022	.0002
%RSD	473.4	52.89	.0691	.8381	1.086	.2548	33.77	.5310	.4098
#1	-.0005	.0036	2.986	.0229	.0284	.5494	-.0065	.4051	.0554
#2	-.0008	.0070	2.988	.0231	.0284	.5521	-.0043	.4090	.0555
#3	.0025	.0025	2.990	.0227	.0279	.5513	-.0034	.4087	.0558

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2185.8**	**5693.1**	**41927.**	**4153.9**
Stddev	6.7	12.8	269.	27.6
%RSD	.30581	.22401	.64198	.66527
#1	2178.0	5689.2	42128.	4183.1
#2	2189.6	5682.7	41621.	4128.1
#3	2189.6	5707.4	42032.	4150.6

Zoom In Zoom Out

Sample Name: FA35800-22 Acquired: 8/3/2016 11:42:50 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**42.15**	**.0241**	**.0535**	**.0004**	**.3451**	**-.0007**	**.0019**	**.0817**
Stddev	.0004	.05	.0006	.0006	.0001	.0046	.0001	.0000	.0004
%RSD	182.4	.1177	2.606	1.143	18.93	1.333	9.485	2.152	.5182
#1	.0002	42.20	.0248	.0542	.0003	.3472	-.0007	.0019	.0816
#2	-.0005	42.14	.0240	.0532	.0004	.3398	-.0006	.0018	.0822
#3	-.0003	42.10	.0236	.0531	.0005	.3483	-.0008	.0018	.0814

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0336**	**55.25**	**.7378**	**.5605**	**.1181**	**.0040**	**.1030**	**.0070**	**.0291**
Stddev	.0002	.13	.0224	.0239	.0007	.0001	.0104	.0002	.0003
%RSD	.4472	.2430	3.033	4.268	.5897	1.623	10.10	2.265	1.035
#1	.0338	55.39	.7635	.5853	.1186	.0040	.1127	.0072	.0292
#2	.0335	55.13	.7222	.5586	.1173	.0040	.0920	.0070	.0294
#3	.0335	55.23	.7278	.5376	.1184	.0039	.1043	.0069	.0288

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0011**	**.0000**	**2.157**	**.0209**	**.0092**	**.4355**	**-.0039**	**.2105**	**.0220**
Stddev	.0005	.0014	.004	.0005	.0001	.0016	.0012	.0003	.0001
%RSD	48.60	4248.	.2070	2.265	1.278	.3669	30.06	.1587	.5692
#1	.0016	-.0009	2.153	.0209	.0091	.4373	-.0026	.2109	.0220
#2	.0012	-.0006	2.155	.0214	.0093	.4342	-.0044	.2103	.0219
#3	.0005	.0017	2.162	.0204	.0093	.4349	-.0048	.2103	.0221

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2364.5**	**5791.2**	**43190.**	**4229.2**
Stddev	2.9	11.4	216.	14.3
%RSD	.12390	.19677	.49904	.33729
#1	2365.1	5800.6	43033.	4228.6
#2	2367.0	5794.6	43436.	4243.8
#3	2361.3	5778.5	43100.	4215.3

Zoom In Zoom Out

Sample Name: MP30665-S1 Acquired: 8/3/2016 11:47:13 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0516**	**296.2**	**2.243**	**4.731**	**.0625**	**60.13**	**.0517**	**.6867**	**1.065**
Stddev	.0045	.6	.007	.008	.0010	.22	.0007	.0013	.002
%RSD	8.661	.1974	.3165	.1674	1.562	.3600	1.304	.1913	.1376
#1	.0544	296.7	2.237	4.740	.0635	59.88	.0514	.6870	1.066
#2	.0540	295.5	2.240	4.728	.0626	60.30	.0512	.6853	1.064
#3	.0465	296.3	2.251	4.726	.0615	60.20	.0524	.6879	1.064

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.5172**	**444.8**	**91.57**	**157.4**	**6.475**	**.5005**	**30.52**	**1.038**	**16.29**
Stddev	.0013	1.3	.43	.3	.019	.0013	.13	.004	.02
%RSD	.2554	.3026	.4698	.1875	.2873	.2531	.4277	.4039	.1183
#1	.5160	445.4	91.88	157.2	6.496	.4991	30.50	1.034	16.28
#2	.5171	445.7	91.76	157.3	6.466	.5011	30.66	1.037	16.31
#3	.5186	443.3	91.08	157.7	6.463	.5014	30.40	1.042	16.28

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1169**	**2.029**	**3.775**	**.5396**	**.6625**	**22.64**	**2.082**	**1.317**	**4.169**
Stddev	.0053	.022	.011	.0045	.0012	.05	.015	.009	.014
%RSD	4.565	1.074	.3004	.8295	.1787	.2413	.6980	.6731	.3341
#1	.1121	2.048	3.766	.5407	.6638	22.70	2.099	1.321	4.159
#2	.1227	2.034	3.771	.5434	.6616	22.60	2.071	1.323	4.185
#3	.1160	2.005	3.788	.5347	.6621	22.63	2.076	1.306	4.162

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2319.8**	**5525.6**	**41209.**	**4079.6**
Stddev	1.5	9.9	159.	16.0
%RSD	.06405	.17943	.38640	.39103
#1	2318.9	5534.7	41025.	4097.3
#2	2321.6	5527.2	41309.	4066.2
#3	2319.1	5515.0	41292.	4075.4

Zoom In Zoom Out

Sample Name: MP30665-S2 Acquired: 8/3/2016 11:51:31 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0509**	**309.1**	**2.295**	**5.363**	**.0642**	**72.32**	**.0568**	**.7136**	**1.694**
Stddev	.0067	1.0	.014	.017	.0001	.28	.0004	.0007	.001
%RSD	13.12	.3074	.6075	.3229	.2232	.3816	.7201	.1024	.0621
#1	.0579	308.6	2.279	5.345	.0641	72.20	.0567	.7132	1.694
#2	.0501	310.2	2.301	5.379	.0644	72.63	.0565	.7132	1.692
#3	.0446	308.4	2.305	5.367	.0641	72.12	.0572	.7145	1.694

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.6528**	**462.8**	**87.18**	**150.2**	**6.207**	**.5184**	**31.67**	**1.114**	**26.53**
Stddev	.0052	1.9	.44	.3	.007	.0019	.07	.003	.03
%RSD	.8015	.4101	.5082	.2015	.1131	.3636	.2198	.2818	.1248
#1	.6471	461.9	86.67	150.3	6.202	.5199	31.62	1.112	26.49
#2	.6574	465.0	87.51	150.4	6.204	.5190	31.75	1.112	26.53
#3	.6538	461.5	87.34	149.9	6.215	.5162	31.64	1.118	26.56

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1221**	**2.096**	**3.112**	**.5723**	**.7333**	**23.32**	**2.138**	**1.314**	**17.91**
Stddev	.0064	.012	.013	.0035	.0027	.02	.014	.005	.02
%RSD	5.258	.5471	.4063	.6180	.3622	.0985	.6452	.3626	.0894
#1	.1167	2.082	3.102	.5739	.7303	23.29	2.130	1.309	17.91
#2	.1203	2.101	3.108	.5682	.7349	23.33	2.154	1.317	17.90
#3	.1292	2.103	3.127	.5747	.7348	23.34	2.131	1.316	17.93

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2319.7**	**5537.3**	**41260.**	**4088.3**
Stddev	2.3	5.0	73.	18.8
%RSD	.10088	.09037	.17664	.45985
#1	2318.7	5531.7	41241.	4081.3
#2	2318.0	5541.3	41341.	4074.0
#3	2322.3	5538.8	41199.	4109.6

Zoom In Zoom Out

Sample Name: FA35738-25 Acquired: 8/3/2016 11:55:48 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 20.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0091**	**220.9**	**.4152**	**8.952**	**.0031**	**204.4**	**.2021**	**.3040**	**9.666**
Stddev	.0049	1.1	.0143	.071	.0009	1.5	.0008	.0012	.037
%RSD	54.29	.4949	3.449	.7977	27.49	.7210	.3725	.4083	.3827
#1	-.0082	221.9	.4270	9.033	.0022	205.9	.2029	.3031	9.668
#2	-.0143	221.1	.3993	8.923	.0033	204.3	.2018	.3034	9.628
#3	-.0046	219.7	.4192	8.900	.0039	203.0	.2015	.3054	9.702

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**1.682**	**957.4**	**51.73**	**139.3**	**9.740**	**.0664**	**3.266**	**1.649**	**51.24**
Stddev	.005	4.6	.96	1.1	.046	.0007	.098	.008	.09
%RSD	.3026	.4855	1.864	.7973	.4702	1.107	3.012	.4686	.1816
#1	1.677	962.8	50.91	140.6	9.793	.0672	3.373	1.641	51.15
#2	1.687	954.9	52.79	138.5	9.709	.0658	3.180	1.656	51.23
#3	1.684	954.6	51.49	138.8	9.720	.0662	3.243	1.649	51.34

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**1.772**	**.0373**	**5.744**	**.1601**	**.4979**	**19.42**	**-.0070**	**.7300**	F **201.2**
Stddev	.024	.0191	.027	.0023	.0061	.05	.0229	.0063	.2
%RSD	1.362	51.21	.4700	1.415	1.219	.2650	328.9	.8637	.0834
#1	1.750	.0592	5.724	.1586	.5048	19.44	-.0323	.7365	201.3
#2	1.798	.0278	5.775	.1590	.4935	19.36	.0121	.7295	201.3
#3	1.767	.0247	5.735	.1627	.4953	19.46	-.0007	.7240	201.0

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2361.9**	**5467.8**	**41158.**	**4073.6**
Stddev	3.2	6.0	103.	17.2
%RSD	.13526	.10987	.24945	.42194
#1	2359.0	5461.9	41114.	4055.2
#2	2365.3	5473.9	41275.	4076.3
#3	2361.3	5467.7	41085.	4089.2

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 12:00:08 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2529	40.58	1.979	2.075	2.082	41.46	2.019	2.035	2.047
Stddev	.0009	.13	.003	.012	.017	.26	.005	.001	.004
%RSD	.3527	.3159	.1595	.5665	.8354	.6175	.2371	.0621	.1704
#1	.2530	40.43	1.979	2.061	2.062	41.17	2.020	2.035	2.048
#2	.2537	40.62	1.982	2.083	2.092	41.56	2.023	2.035	2.049
#3	.2520	40.68	1.976	2.080	2.093	41.65	2.013	2.033	2.043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.035	39.56	41.51	40.96	2.129	1.979	41.49	2.066	1.998
Stddev	.002	.16	.22	.43	.005	.001	.31	.002	.005
%RSD	.1170	.4116	.5409	1.040	.2427	.0445	.7478	.0740	.2684
#1	2.037	39.41	41.28	40.51	2.133	1.978	41.14	2.067	1.999
#2	2.036	39.54	41.73	41.02	2.131	1.980	41.63	2.064	2.002
#3	2.032	39.73	41.53	41.36	2.124	1.979	41.71	2.066	1.992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.981	2.000	1.604	2.042	2.075	1.950	1.995	2.053	2.066
Stddev	.003	.005	.003	.003	.013	.003	.002	.003	.003
%RSD	.1672	.2307	.1625	.1511	.6363	.1328	.0917	.1671	.1349
#1	1.980	1.994	1.601	2.043	2.060	1.952	1.993	2.055	2.067
#2	1.978	2.001	1.605	2.039	2.082	1.947	1.997	2.056	2.069
#3	1.985	2.003	1.606	2.044	2.083	1.952	1.994	2.049	2.063
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 12:00:08 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2156.1	5224.7	39132.	3927.1
Stddev	5.7	6.9	131.	31.7
%RSD	.26428	.13127	.33438	.80691
#1	2157.9	5224.5	38982.	3953.5
#2	2149.8	5218.0	39189.	3936.0
#3	2160.8	5231.7	39225.	3892.0

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 12:04:19 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0026	.0001	.0000	.0003	.0067	.0002	.0002	.0001
Stddev	.0004	.0082	.0002	.0004	.0001	.0037	.0000	.0001	.0001
%RSD	191.3	309.8	175.2	810.7	24.86	54.69	23.74	27.20	125.5
#1	-.0002	-.0018	-.0001	.0005	.0003	.0109	.0002	.0003	.0001
#2	.0002	-.0112	.0003	.0000	.0003	.0051	.0002	.0003	.0000
#3	.0006	.0050	.0002	-.0003	.0002	.0041	.0001	.0002	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0140	.0088	-.0141	.0002	F .0013	.0193	.0002	-.0002
Stddev	.0002	.0025	.0376	.0084	.0000	.0003	.0055	.0001	.0006
%RSD	293.1	17.84	426.1	59.51	11.33	23.44	28.65	50.19	286.1
#1	.0001	.0166	.0371	-.0161	.0002	.0017	.0256	.0001	.0002
#2	-.0001	.0117	-.0338	-.0213	.0002	.0013	.0162	.0002	-.0008
#3	-.0002	.0136	.0232	-.0049	.0003	.0010	.0160	.0003	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0022	-.0003	.0022	.0005	.0004	.0005	-.0003	.0000	.0002
Stddev	.0006	.0009	.0002	.0001	.0000	.0001	.0006	.000	.0001
%RSD	27.47	278.8	9.001	12.16	5.825	14.66	175.8	579.0	52.01
#1	.0021	.0004	.0020	.0006	.0004	.0005	-.0004	-.0002	.0003
#2	.0016	.0000	.0023	.0006	.0004	.0006	.0003	-.0002	.0001
#3	.0028	-.0014	.0023	.0005	.0004	.0005	-.0008	.0003	.0003
Check ?	Chk Fail	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.0020								
Low Limit	-.0020								

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 12:04:19 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2441.5	5493.7	41044.	3997.8
Stddev	5.4	8.6	220.	4.3
%RSD	.22107	.15706	.53679	.10772
#1	2440.6	5499.1	40954.	3999.3
#2	2447.2	5498.2	41295.	4001.1
#3	2436.5	5483.7	40883.	3992.9

Zoom In Zoom Out

Sample Name: FA35760-1 Acquired: 8/3/2016 12:08:51 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**47.57**	**.0094**	**.0529**	**.0007**	**11.14**	**-.0010**	**.0008**	**.1049**
Stddev	.0008	.24	.0022	.0006	.0001	.05	.0001	.0002	.0009
%RSD	174.3	.4996	23.22	1.054	10.41	.4347	8.721	25.51	.8264
#1	-.0013	47.46	.0073	.0529	.0007	11.12	-.0010	.0010	.1054
#2	.0001	47.41	.0116	.0523	.0007	11.11	-.0010	.0006	.1039
#3	-.0001	47.84	.0092	.0534	.0008	11.20	-.0011	.0008	.1055

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0388**	**97.05**	**1.126**	**.4991**	**.0288**	**.0046**	**9.244**	**.0041**	**.0054**
Stddev	.0004	.38	.055	.0326	.0001	.0002	.077	.0001	.0008
%RSD	1.083	.3923	4.924	6.532	.4382	4.699	.8283	2.580	15.70
#1	.0392	96.81	1.174	.5329	.0288	.0047	9.230	.0042	.0054
#2	.0387	96.85	1.065	.4679	.0287	.0047	9.175	.0040	.0062
#3	.0384	97.49	1.137	.4964	.0289	.0043	9.326	.0041	.0045

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0005**	**.0019**	**3.772**	**.0313**	**.0347**	**.2989**	**-.0041**	**.2987**	**.0313**
Stddev	.0014	.0012	.004	.0004	.0002	.0011	.0014	.0010	.0000
%RSD	320.0	62.25	.1028	1.244	.4570	.3695	33.27	.3458	.1372
#1	.0004	.0006	3.773	.0309	.0348	.2990	-.0032	.2978	.0313
#2	-.0009	.0023	3.775	.0313	.0346	.2978	-.0034	.2998	.0314
#3	.0019	.0029	3.768	.0316	.0349	.3000	-.0057	.2985	.0313

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2352.4**	**6137.4**	**45716.**	**4489.2**
Stddev	2.0	6.3	267.	16.5
%RSD	.08463	.10272	.58413	.36829
#1	2354.4	6131.6	45942.	4504.6
#2	2352.4	6136.6	45785.	4491.5
#3	2350.4	6144.1	45421.	4471.7

Zoom In Zoom Out

Sample Name: FA35760-2 Acquired: 8/3/2016 12:13:15 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	**-.0024**	**32.05**	**.0642**	**.0136**	**.0004**	**.7255**	**-.0048**	**-.0034**
Stddev	.0003	.09	.0029	.0005	.0001	.0061	.0001	.0002
%RSD	12.22	.2730	4.551	3.550	32.56	.8456	1.812	6.294
#1	-.0026	31.95	.0629	.0137	.0003	.7325	-.0048	-.0032
#2	-.0021	32.11	.0621	.0140	.0003	.7214	-.0049	-.0036
#3	-.0026	32.10	.0675	.0131	.0005	.7225	-.0047	-.0033

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	**.1938**	**.0695**	**527.9**	**.6847**	**.5925**	**.0845**	**.0703**	**3.510**
Stddev	.0008	.0003	2.1	.0304	.0284	.0002	.0001	.024
%RSD	.4253	.3885	.4017	4.443	4.794	.2826	.1646	.6777
#1	.1932	.0694	525.8	.6718	.6126	.0843	.0704	3.493
#2	.1935	.0693	527.8	.7194	.5600	.0847	.0702	3.537
#3	.1948	.0698	530.0	.6627	.6050	.0845	.0702	3.500

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	**.0060**	F **-.0449**	**.0050**	**-.0039**	**2.196**	**.0300**	**.0093**	**.5763**
Stddev	.0010	.0046	.0006	.0018	.008	.0011	.0003	.0009
%RSD	16.12	10.29	12.35	45.87	.3790	3.687	3.613	.1572
#1	.0052	-.0495	.0044	-.0052	2.187	.0302	.0091	.5754
#2	.0071	-.0403	.0049	-.0045	2.198	.0288	.0097	.5763
#3	.0059	-.0447	.0056	-.0019	2.203	.0310	.0092	.5772

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0048**	**.2820**	**.0588**
Stddev	.0048	.0003	.0003
%RSD	100.3	.0959	.4264
#1	-.0101	.2818	.0590
#2	-.0006	.2823	.0585
#3	-.0037	.2819	.0588

Zoom In Zoom Out

Sample Name: FA35760-2 Acquired: 8/3/2016 12:13:15 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2241.6**	**5577.7**	**41603.**	**4100.9**
Stddev	14.3	8.5	40.	21.3
%RSD	.63961	.15157	.09715	.51869
#1	2234.7	5575.4	41563.	4125.5
#2	2232.0	5570.6	41644.	4089.0
#3	2258.1	5587.1	41603.	4088.3

Zoom In Zoom Out

Sample Name: FA35653-1 Acquired: 8/3/2016 12:17:37 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 4.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0000**	**157.0**	**.0953**	**1.406**	**.0201**	**63.46**	**.0133**	**.1015**	**.1608**
Stddev	.001	.3	.0012	.005	.0002	.10	.0002	.0004	.0004
%RSD	4744.	.1820	1.290	.3622	.7743	.1638	1.244	.3817	.2616
#1	-.0006	157.3	.0951	1.412	.0202	63.35	.0131	.1012	.1604
#2	.0000	156.9	.0966	1.403	.0200	63.55	.0134	.1019	.1612
#3	.0006	156.8	.0942	1.404	.0200	63.49	.0135	.1013	.1607

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.5916**	**298.2**	**53.35**	**66.54**	**5.569**	**.0075**	**2.026**	**.2057**	**2.695**
Stddev	.0029	.9	.20	.22	.005	.0001	.018	.0010	.006
%RSD	.4920	.2975	.3676	.3360	.0891	1.168	.8668	.4943	.2262
#1	.5887	299.1	53.54	66.71	5.569	.0076	2.016	.2064	2.696
#2	.5945	298.1	53.35	66.62	5.573	.0075	2.016	.2045	2.701
#3	.5916	297.3	53.15	66.29	5.563	.0075	2.047	.2061	2.689

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0038**	**-.0114**	**6.753**	**.0356**	**.3542**	**4.061**	**-.0113**	**.3531**	**1.497**
Stddev	.0041	.0033	.021	.0018	.0002	.009	.0016	.0011	.009
%RSD	107.5	29.16	.3057	5.112	.0507	.2105	13.98	.3041	.5769
#1	.0014	-.0088	6.739	.0341	.3541	4.053	-.0117	.3528	1.489
#2	.0014	-.0102	6.743	.0376	.3544	4.070	-.0095	.3542	1.506
#3	.0086	-.0152	6.777	.0351	.3541	4.060	-.0126	.3521	1.497

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2270.5**	**6312.4**	**46917.**	**4681.8**
Stddev	2.0	12.5	134.	20.7
%RSD	.08876	.19830	.28576	.44302
#1	2272.7	6326.8	47038.	4685.7
#2	2270.1	6304.4	46941.	4659.4
#3	2268.7	6306.1	46773.	4700.4

Zoom In Zoom Out

Sample Name: FA35653-2 Acquired: 8/3/2016 12:21:57 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 4.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0010**	**187.2**	**.0873**	**1.628**	**.0133**	**169.1**	**-.0006**	**.0866**	**.1965**
Stddev	.0016	.6	.0026	.008	.0001	.7	.0004	.0006	.0007
%RSD	159.4	.3194	3.029	.4876	.9036	.4317	69.74	.6592	.3319
#1	.0008	186.7	.0898	1.619	.0133	168.8	-.0004	.0861	.1958
#2	-.0016	187.1	.0875	1.629	.0131	168.6	-.0004	.0873	.1964
#3	-.0022	187.9	.0846	1.635	.0134	169.9	-.0011	.0865	.1971

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1634**	**228.7**	**42.10**	**53.10**	**3.944**	**.0027**	**1.149**	**.1833**	**.2784**
Stddev	.0003	.7	.25	.25	.011	.0005	.056	.0007	.0032
%RSD	.1698	.3236	.6016	.4784	.2808	17.00	4.904	.3944	1.146
#1	.1632	228.2	41.83	52.97	3.956	.0027	1.182	.1826	.2755
#2	.1633	228.4	42.32	52.94	3.936	.0022	1.182	.1832	.2818
#3	.1637	229.6	42.15	53.40	3.939	.0032	1.084	.1840	.2779

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0030**	**-.0035**	**5.681**	**.0205**	**.7450**	**2.184**	**-.0107**	**.3524**	**.6958**
Stddev	.0024	.0072	.018	.0002	.0044	.003	.0027	.0021	.0022
%RSD	81.01	205.4	.3231	1.173	.5892	.1272	25.23	.5906	.3095
#1	.0046	.0008	5.679	.0202	.7411	2.181	-.0127	.3538	.6933
#2	.0042	.0005	5.664	.0207	.7441	2.185	-.0117	.3500	.6964
#3	.0002	-.0118	5.701	.0206	.7497	2.186	-.0076	.3533	.6975

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2265.8**	**5872.0**	**43410.**	**4309.1**
Stddev	5.3	3.0	166.	46.0
%RSD	.23397	.05194	.38294	1.0679
#1	2267.3	5875.0	43222.	4343.7
#2	2260.0	5868.9	43539.	4326.8
#3	2270.3	5872.0	43469.	4256.9

Zoom In Zoom Out

Sample Name: FA35653-3 Acquired: 8/3/2016 12:26:17 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 4.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0017**	**107.3**	**.0709**	**.9450**	**.0168**	**53.75**	**.0048**	**.0792**	**.1154**
Stddev	.0028	.4	.0023	.0070	.0003	.22	.0004	.0000	.0001
%RSD	169.6	.3551	3.312	.7357	1.668	.4092	7.323	.0542	.0874
#1	-.0025	107.0	.0726	.9384	.0171	53.98	.0044	.0792	.1153
#2	.0015	107.2	.0682	.9443	.0166	53.55	.0048	.0792	.1154
#3	-.0039	107.7	.0719	.9523	.0168	53.71	.0051	.0792	.1155

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.3463**	**264.0**	**31.37**	**43.54**	**3.919**	**.0045**	**1.344**	**.1349**	**4.295**
Stddev	.0018	.8	.13	.14	.013	.0002	.020	.0004	.007
%RSD	.5256	.2942	.4206	.3112	.3178	4.958	1.515	.3284	.1725
#1	.3477	264.4	31.29	43.57	3.926	.0045	1.321	.1344	4.301
#2	.3471	263.1	31.31	43.39	3.904	.0042	1.357	.1352	4.297
#3	.3442	264.5	31.53	43.65	3.925	.0047	1.355	.1351	4.287

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0417**	**-.0027**	**6.509**	**.0270**	**.2269**	**3.837**	**-.0112**	**.2800**	**.9631**
Stddev	.0028	.0008	.014	.0004	.0009	.005	.0004	.0014	.0014
%RSD	6.639	29.78	.2150	1.624	.4088	.1209	3.571	.4930	.1442
#1	.0412	-.0018	6.497	.0265	.2273	3.833	-.0114	.2785	.9631
#2	.0392	-.0033	6.506	.0271	.2258	3.836	-.0115	.2810	.9646
#3	.0447	-.0030	6.524	.0273	.2275	3.842	-.0108	.2806	.9618

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2306.3**	**6271.2**	**47033.**	**4628.2**
Stddev	3.1	5.4	136.	14.9
%RSD	.13647	.08677	.28831	.32295
#1	2305.5	6276.9	46952.	4611.3
#2	2303.7	6266.0	47190.	4633.6
#3	2309.8	6270.6	46958.	4639.7

Zoom In Zoom Out

Sample Name: FA35653-4 Acquired: 8/3/2016 12:30:37 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 4.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**198.9**	**.0908**	**1.762**	**.0266**	**710.4**	**.0068**	**.0786**	**.1566**
Stddev	.0001	.9	.0014	.013	.0005	2.8	.0002	.0006	.0016
%RSD	22.90	.4717	1.539	.7332	1.786	.3894	2.486	.7588	1.006
#1	-.0003	198.6	.0923	1.756	.0260	707.3	.0067	.0780	.1554
#2	-.0005	198.1	.0905	1.753	.0268	711.0	.0069	.0792	.1562
#3	-.0004	199.9	.0895	1.777	.0269	712.7	.0066	.0786	.1584

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.3962**	**283.8**	**46.24**	**190.4**	**4.717**	**.0080**	**1.416**	**.1754**	**.6191**
Stddev	.0020	1.5	.37	2.2	.010	.0004	.025	.0008	.0009
%RSD	.5080	.5297	.8086	1.148	.2152	5.235	1.783	.4283	.1424
#1	.3938	283.0	46.03	188.8	4.724	.0081	1.391	.1761	.6190
#2	.3972	282.9	46.02	189.4	4.721	.0075	1.441	.1746	.6183
#3	.3974	285.5	46.67	192.9	4.705	.0083	1.415	.1754	.6201

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0009**	**-.0045**	**5.007**	**.0363**	**1.021**	**3.263**	**-.0167**	**.3830**	**1.065**
Stddev	.0048	.0014	.007	.0010	.007	.004	.0017	.0011	.002
%RSD	556.7	30.79	.1357	2.812	.7255	.1343	10.23	.2776	.2179
#1	.0047	-.0038	5.013	.0370	1.019	3.264	-.0187	.3836	1.066
#2	-.0040	-.0037	4.999	.0352	1.016	3.266	-.0159	.3836	1.062
#3	-.0032	-.0061	5.008	.0369	1.030	3.258	-.0156	.3818	1.067

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2135.3**	**6166.2**	**45873.**	**4605.6**
Stddev	5.5	6.6	174.	24.0
%RSD	.25927	.10741	.37880	.52211
#1	2137.8	6159.9	45738.	4627.3
#2	2139.1	6173.1	45812.	4609.9
#3	2128.9	6165.6	46069.	4579.7

Zoom In Zoom Out

Sample Name: FA35653-5 Acquired: 8/3/2016 12:35:02 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0051**	**145.8**	**.0790**	**1.264**	**.0268**	**341.0**	**.0010**	**.0675**	**.1172**
Stddev	.0038	.7	.0066	.013	.0003	1.2	.0002	.0010	.0012
%RSD	74.25	.4712	8.392	1.059	1.065	.3468	22.96	1.437	1.065
#1	-.0095	146.5	.0785	1.275	.0271	341.3	.0010	.0676	.1177
#2	-.0029	145.1	.0726	1.249	.0266	339.8	.0012	.0665	.1181
#3	-.0029	145.8	.0859	1.268	.0268	342.1	.0008	.0684	.1158

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1737**	**243.7**	**31.87**	**74.04**	**3.862**	**.0084**	**1.247**	**.1278**	**.4736**
Stddev	.0018	.2	.33	.15	.007	.0009	.114	.0010	.0069
%RSD	1.050	.0999	1.032	.2065	.1733	11.28	9.105	.7953	1.463
#1	.1718	244.0	32.16	74.03	3.870	.0076	1.365	.1281	.4756
#2	.1754	243.6	31.51	73.89	3.859	.0094	1.138	.1287	.4792
#3	.1741	243.5	31.94	74.20	3.858	.0082	1.239	.1267	.4658

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0009**	**-.0021**	**9.659**	**.0241**	**.4845**	**3.273**	**-.0256**	**.3367**	**.9261**
Stddev	.0038	.0124	.017	.0029	.0034	.010	.0232	.0024	.0031
%RSD	425.4	585.4	.1754	11.98	.7082	.3067	90.73	.6997	.3319
#1	-.0035	.0040	9.659	.0210	.4833	3.278	-.0019	.3383	.9226
#2	.0030	.0060	9.642	.0267	.4819	3.261	-.0265	.3340	.9278
#3	.0031	-.0164	9.676	.0245	.4884	3.279	-.0484	.3379	.9280

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2330.9**	**6020.1**	**44736.**	**4445.9**
Stddev	7.3	17.3	207.	16.4
%RSD	.31327	.28808	.46380	.36859
#1	2339.3	6039.9	44757.	4460.4
#2	2327.3	6012.9	44933.	4449.3
#3	2326.0	6007.5	44519.	4428.1

Zoom In Zoom Out

Sample Name: FA35800-5 Acquired: 8/3/2016 12:39:25 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 4.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0005**	**42.12**	**.0313**	**.0722**	**.0011**	**.9732**	**-.0006**	**.0030**	**.0948**
Stddev	.0013	.02	.0054	.0015	.0002	.0208	.0001	.0005	.0011
%RSD	277.0	.0526	17.13	2.093	16.77	2.134	22.97	15.97	1.193
#1	-.0005	42.11	.0368	.0706	.0011	.9909	-.0005	.0025	.0956
#2	.0009	42.10	.0261	.0724	.0009	.9784	-.0007	.0030	.0953
#3	-.0017	42.14	.0309	.0736	.0012	.9504	-.0005	.0035	.0935

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0609**	**34.81**	**1.934**	**.9660**	**.1075**	**.0102**	**.2079**	**.0064**	**.0677**
Stddev	.0019	.04	.178	.0771	.0001	.0005	.0376	.0004	.0022
%RSD	3.075	.1205	9.191	7.985	.0970	5.386	18.10	5.875	3.247
#1	.0618	34.85	2.069	1.038	.1074	.0106	.1756	.0066	.0673
#2	.0622	34.81	1.733	.9761	.1075	.0096	.1989	.0060	.0700
#3	.0587	34.76	2.001	.8843	.1076	.0105	.2492	.0066	.0657

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0040**	**-.0004**	**3.038**	**.0230**	**.0153**	**.7292**	**-.0094**	**.3490**	**.0461**
Stddev	.0035	.0062	.005	.0006	.0005	.0038	.0074	.0011	.0002
%RSD	87.98	1683.	.1639	2.485	3.221	.5182	78.80	.3129	.3280
#1	-.0002	.0023	3.043	.0230	.0159	.7297	-.0014	.3487	.0461
#2	-.0047	-.0075	3.037	.0236	.0151	.7327	-.0160	.3502	.0462
#3	-.0072	.0041	3.033	.0225	.0149	.7252	-.0107	.3481	.0459

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2410.6**	**5970.0**	**44216.**	**4348.8**
Stddev	3.7	3.6	149.	9.9
%RSD	.15385	.06065	.33805	.22672
#1	2414.7	5969.4	44353.	4345.2
#2	2407.4	5966.8	44057.	4341.3
#3	2409.7	5973.9	44237.	4359.9

Zoom In Zoom Out

Sample Name: FA35800-12 Acquired: 8/3/2016 12:43:51 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 2.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0021**	**703.4**	**.0183**	**1.246**	**.0023**	**1.752**	**-.0017**	**.0145**	**.5387**
Stddev	.0005	3.9	.0015	.006	.0000	.014	.0001	.0003	.0037
%RSD	24.47	.5521	8.046	.4736	2.061	.7848	5.274	1.975	.6804
#1	.0024	701.3	.0167	1.241	.0023	1.760	-.0018	.0143	.5420
#2	.0015	700.9	.0195	1.244	.0023	1.736	-.0018	.0148	.5394
#3	.0023	707.8	.0188	1.252	.0024	1.759	-.0016	.0144	.5348

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2361**	**102.7**	**4.923**	**5.656**	**.1908**	**.0183**	**.4449**	**.0859**	**.1043**
Stddev	.0002	.6	.073	.049	.0006	.0004	.0159	.0005	.0024
%RSD	.0881	.6103	1.477	.8585	.3117	2.222	3.573	.5971	2.338
#1	.2363	102.3	4.988	5.708	.1914	.0180	.4534	.0865	.1062
#2	.2359	102.4	4.844	5.647	.1908	.0181	.4266	.0854	.1016
#3	.2360	103.4	4.935	5.613	.1902	.0188	.4548	.0858	.1052

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0022**	**.0040**	**4.874**	**.0380**	**.0399**	**.6411**	**-.0088**	**1.004**	**.1791**
Stddev	.0017	.0051	.008	.0003	.0004	.0032	.0041	.003	.0007
%RSD	79.40	128.4	.1662	.8239	.9930	.4923	46.41	.3418	.3633
#1	-.0041	.0014	4.864	.0383	.0401	.6447	-.0135	1.008	.1784
#2	-.0009	.0007	4.877	.0377	.0395	.6401	-.0071	1.001	.1791
#3	-.0014	.0099	4.880	.0382	.0402	.6386	-.0059	1.003	.1797

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2222.7**	**5854.1**	**41932.**	**4147.4**
Stddev	4.2	8.1	205.	38.6
%RSD	.19105	.13860	.48918	.93136
#1	2222.7	5861.9	41825.	4178.0
#2	2227.0	5854.8	41802.	4160.1
#3	2218.5	5845.7	42168.	4104.0

Zoom In Zoom Out

Sample Name: FA35800-20 Acquired: 8/3/2016 12:48:11 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	**-.0129**	**156.8**	**.1580**	**.0103**	**.0023**	**.8613**	**-.0217**	**-.0110**
Stddev	.0013	.6	.0066	.0027	.0006	.0262	.0016	.0005
%RSD	10.30	.3913	4.163	26.42	25.68	3.037	7.443	4.932
#1	-.0121	157.4	.1619	.0081	.0022	.8351	-.0208	-.0105
#2	-.0144	156.6	.1504	.0133	.0030	.8874	-.0236	-.0116
#3	-.0122	156.3	.1617	.0094	.0018	.8614	-.0209	-.0110

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	**.5860**	**.1791**	**2138.**	**.4778**	**.1855**	**.4283**	**.0043**	**.7301**
Stddev	.0044	.0017	3.	.2623	.1246	.0013	.0013	.0797
%RSD	.7534	.9734	.1392	54.90	67.19	.2930	29.50	10.92
#1	.5817	.1772	2136.	.5664	.2089	.4274	.0058	.6448
#2	.5858	.1806	2142.	.1827	.2968	.4298	.0034	.7426
#3	.5905	.1794	2138.	.6843	.0508	.4277	.0038	.8028

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	**.0053**	**F -.1616**	**.0168**	**-.0373**	**4.044**	**.0349**	**.0220**	**1.200**
Stddev	.0022	.0089	.0027	.0072	.014	.0018	.0007	.007
%RSD	42.17	5.494	16.23	19.34	.3458	5.110	3.361	.5718
#1	.0036	-.1514	.0150	-.0348	4.033	.0357	.0222	1.195
#2	.0045	-.1658	.0154	-.0455	4.040	.0329	.0226	1.198
#3	.0078	-.1676	.0200	-.0317	4.060	.0361	.0212	1.208

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0199**	**.6552**	**.1565**
Stddev	.0004	.0039	.0010
%RSD	2.198	.5980	.6590
#1	-.0204	.6514	.1553
#2	-.0197	.6550	.1573
#3	-.0196	.6592	.1569

Zoom In Zoom Out

Sample Name: FA35800-20 Acquired: 8/3/2016 12:48:11 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2284.4**	**5459.7**	**40544.**	**3999.1**
Stddev	1.7	4.1	20.	12.1
%RSD	.07265	.07478	.04908	.30230
#1	2282.6	5460.2	40551.	3988.4
#2	2284.6	5455.3	40559.	4012.2
#3	2285.9	5463.4	40521.	3996.5

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 12:52:34 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2541	40.99	1.947	2.112	2.111	42.07	1.997	2.026	2.039
Stddev	.0003	.08	.007	.005	.001	.15	.001	.002	.005
%RSD	.1276	.2060	.3501	.2371	.0644	.3589	.0395	.0893	.2341
#1	.2540	41.02	1.941	2.118	2.110	41.92	1.998	2.027	2.044
#2	.2538	40.89	1.945	2.108	2.112	42.09	1.996	2.024	2.036
#3	.2545	41.05	1.954	2.111	2.112	42.22	1.997	2.027	2.036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.036	39.65	42.23	41.11	2.156	1.969	42.33	2.071	1.982
Stddev	.008	.12	.06	.24	.006	.004	.10	.002	.004
%RSD	.3858	.3045	.1436	.5915	.2648	.2007	.2273	.1078	.1991
#1	2.028	39.55	42.29	40.89	2.162	1.966	42.24	2.072	1.987
#2	2.038	39.61	42.17	41.06	2.157	1.968	42.32	2.069	1.980
#3	2.043	39.78	42.24	41.37	2.151	1.974	42.43	2.073	1.980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.958	1.979	1.587	2.047	2.108	1.926	1.982	2.071	2.068
Stddev	.003	.007	.002	.000	.004	.005	.006	.002	.002
%RSD	.1619	.3777	.1017	.0169	.2030	.2646	.3040	.1126	.0813
#1	1.956	1.971	1.585	2.047	2.109	1.920	1.976	2.071	2.070
#2	1.956	1.980	1.588	2.047	2.103	1.927	1.982	2.073	2.066
#3	1.962	1.986	1.587	2.048	2.112	1.930	1.988	2.069	2.067
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 12:52:34 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2154.6	5249.5	39155.	3899.8
Stddev	1.7	2.1	104.	42.8
%RSD	.07939	.03958	.26601	1.0979
#1	2152.8	5247.7	39113.	3934.4
#2	2156.1	5251.8	39078.	3913.0
#3	2155.0	5249.0	39273.	3851.9

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 12:56:45 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0059	-.0006	-.0002	.0002	.0022	.0002	.0002	.0001
Stddev	.0004	.0068	.0003	.0005	.0000	.0035	.0000	.0001	.0003
%RSD	406.5	113.9	47.50	212.8	2.241	158.9	19.60	62.38	218.1
#1	.0004	-.0048	-.0004	.0003	.0002	.0009	.0002	.0002	.0004
#2	-.0005	-.0132	-.0006	-.0004	.0002	.0062	.0001	.0003	.0002
#3	-.0002	.0002	-.0010	-.0006	.0002	-.0004	.0002	.0001	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0147	-.0263	.0162	.0002	F .0013	.0188	.0003	.0000
Stddev	.0002	.0019	.0176	.0115	.0001	.0003	.0154	.0004	.0004
%RSD	80.92	12.85	66.94	71.03	24.39	21.69	81.91	109.4	1301.
#1	.0000	.0155	-.0419	.0042	.0002	.0015	.0028	-.0001	-.0002
#2	.0004	.0125	-.0296	.0271	.0003	.0013	.0201	.0006	-.0002
#3	.0003	.0159	-.0073	.0172	.0002	.0010	.0334	.0005	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	-.0005	.0020	.0000	.0003	.0003	-.0006	.0002	.0002
Stddev	.0002	.0004	.0003	.000	.0001	.0001	.0007	.0000	.0000
%RSD	16.45	75.05	14.46	839.3	39.00	27.42	123.4	22.55	19.99
#1	.0016	-.0001	.0023	-.0001	.0002	.0003	-.0013	.0002	.0003
#2	.0013	-.0008	.0020	.0001	.0004	.0003	-.0001	.0002	.0002
#3	.0011	-.0006	.0017	-.0001	.0003	.0002	-.0003	.0003	.0002
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 12:56:45 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2431.5	5500.0	40670.	3983.5
Stddev	5.1	9.2	156.	34.5
%RSD	.20934	.16679	.38333	.86602
#1	2431.8	5498.6	40785.	3943.8
#2	2436.5	5509.9	40492.	4000.9
#3	2426.3	5491.7	40732.	4005.8

Zoom In Zoom Out

Sample Name: MP30674-MB1 Acquired: 8/3/2016 13:08:15 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0034**	**-.0004**	**-.0004**	**.0001**	**.0191**	**.0003**	**.0004**	**.0009**
Stddev	.0001	.0072	.0007	.0004	.0002	.0033	.0001	.0001	.0002
%RSD	236.8	211.4	163.3	97.16	168.0	17.19	27.72	16.41	19.92
#1	.0001	.0032	-.0003	-.0007	.0000	.0162	.0004	.0005	.0007
#2	-.0001	-.0037	-.0011	-.0005	.0000	.0184	.0003	.0004	.0010
#3	.0002	.0107	.0002	.0000	.0003	.0226	.0002	.0004	.0011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0131**	**-.0007**	**.0082**	**.0006**	**.0005**	**.0212**	**.0009**	**.0001**
Stddev	.0002	.0020	.0269	.0199	.0001	.0001	.0043	.0000	.0008
%RSD	32.61	15.41	3780.	242.7	13.07	15.81	20.51	.8153	622.1
#1	.0007	.0110	-.0317	-.0125	.0007	.0005	.0179	.0009	-.0002
#2	.0004	.0150	.0141	.0098	.0005	.0006	.0261	.0009	.0010
#3	.0005	.0131	.0155	.0272	.0007	.0004	.0195	.0009	-.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015**	**.0010**	**.0058**	**.0219**	**.0001**	**.0007**	**-.0016**	**.0003**	**.0049**
Stddev	.0007	.0005	.0003	.0002	.0002	.0002	.0004	.0001	.0001
%RSD	45.34	48.49	4.618	1.025	103.1	27.03	24.18	44.77	1.947
#1	.0015	.0014	.0055	.0217	.0001	.0006	-.0012	.0004	.0049
#2	.0008	.0011	.0057	.0219	.0000	.0006	-.0017	.0002	.0049
#3	.0021	.0005	.0060	.0221	.0003	.0009	-.0020	.0002	.0048
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP30674-MB1 Acquired: 8/3/2016 13:08:15 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2436.7**	**5498.0**	**41217.**	**4006.1**
Stddev	.3	5.3	77.	16.4
%RSD	.01169	.09710	.18684	.40839
#1	2436.6	5497.5	41287.	3997.4
#2	2437.0	5503.6	41229.	3995.9
#3	2436.5	5492.9	41134.	4025.0

Zoom In Zoom Out

Sample Name: MP30674-B1 Acquired: 8/3/2016 13:12:44 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0483**	**28.05**	**1.908**	**2.120**	**.0541**	**27.16**	**.0496**	**.5038**	**.2069**
Stddev	.0014	.10	.012	.008	.0002	.09	.0002	.0013	.0004
%RSD	2.897	.3696	.6301	.3563	.3792	.3228	.4521	.2605	.2088
#1	.0497	28.17	1.909	2.128	.0541	27.21	.0495	.5042	.2066
#2	.0483	27.96	1.895	2.120	.0539	27.06	.0494	.5024	.2074
#3	.0469	28.03	1.919	2.113	.0543	27.21	.0498	.5049	.2067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2616**	**26.83**	**27.03**	**26.14**	**.5406**	**.4917**	**27.04**	**.5184**	**.4857**
Stddev	.0007	.08	.09	.05	.0011	.0012	.07	.0017	.0006
%RSD	.2858	.3104	.3213	.1821	.2000	.2540	.2411	.3266	.1335
#1	.2624	26.89	27.04	26.15	.5399	.4922	27.06	.5200	.4850
#2	.2610	26.74	26.94	26.08	.5419	.4903	26.97	.5166	.4863
#3	.2613	26.87	27.11	26.17	.5402	.4926	27.09	.5186	.4857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4821**	**1.930**	**.0183**	**.5303**	**.5110**	**.4892**	**1.942**	**.4937**	**.5231**
Stddev	.0010	.002	.0006	.0014	.0017	.0018	.010	.0001	.0015
%RSD	.2143	.0823	3.130	.2732	.3422	.3780	.5345	.0245	.2787
#1	.4815	1.931	.0176	.5301	.5130	.4891	1.945	.4939	.5237
#2	.4816	1.929	.0186	.5290	.5097	.4910	1.949	.4936	.5214
#3	.4833	1.928	.0186	.5319	.5104	.4873	1.930	.4938	.5242
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP30674-B1 Acquired: 8/3/2016 13:12:44 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**2239.9**	**5336.0**	**39643.**	**3941.1**
Stddev	4.4	11.4	153.	27.8
%RSD	.19752	.21434	.38529	.70535
#1	2237.4	5336.6	39716.	3971.4
#2	2237.3	5347.1	39467.	3935.2
#3	2245.0	5324.3	39745.	3916.8

Zoom In Zoom Out

Sample Name: FA35779-3 Acquired: 8/3/2016 13:16:58 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**54.85**	**.0088**	**.3808**	**.0012**	**134.8**	**.0016**	**.0024**	**.0678**
Stddev	.0002	.10	.0004	.0018	.0001	.2	.0001	.0000	.0003
%RSD	41.03	.1912	4.248	.4663	4.255	.1522	3.494	1.664	.3773
#1	-.0002	54.83	.0091	.3796	.0011	134.6	.0016	.0024	.0676
#2	-.0006	54.76	.0084	.3798	.0012	135.0	.0017	.0024	.0681
#3	-.0004	54.97	.0089	.3828	.0012	134.8	.0016	.0024	.0676

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0293**	**19.40**	**1.174**	**2.109**	**.2131**	**.0023**	**.7055**	**.0156**	**.3717**
Stddev	.0004	.09	.007	.033	.0011	.0000	.0079	.0001	.0013
%RSD	1.457	.4494	.6317	1.557	.4930	.9598	1.121	.8591	.3435
#1	.0288	19.35	1.176	2.138	.2142	.0023	.7089	.0157	.3704
#2	.0296	19.34	1.166	2.115	.2130	.0023	.6964	.0155	.3719
#3	.0295	19.50	1.180	2.073	.2121	.0023	.7110	.0155	.3729

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0006**	**.0012**	**.8987**	**.0163**	**1.157**	**.2908**	**-.0040**	**.0440**	**1.021**
Stddev	.0006	.0006	.0034	.0003	.003	.0012	.0015	.0002	.001
%RSD	93.50	49.10	.3782	1.662	.2378	.4093	38.18	.4847	.0936
#1	.0000	.0011	.8960	.0164	1.155	.2900	-.0053	.0441	1.020
#2	.0012	.0007	.9026	.0166	1.157	.2921	-.0043	.0437	1.020
#3	.0006	.0019	.8977	.0160	1.160	.2902	-.0023	.0441	1.022

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2218.9**	**6157.8**	**45176.**	**4520.7**
Stddev	6.4	11.4	20.	13.9
%RSD	.28624	.18549	.04388	.30825
#1	2219.8	6170.8	45166.	4536.7
#2	2224.7	6149.4	45199.	4513.6
#3	2212.1	6153.1	45163.	4511.7

Zoom In Zoom Out

Sample Name: MP30674-D1 Acquired: 8/3/2016 13:21:20 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**38.76**	**.0062**	**.2612**	**.0008**	**145.4**	**.0011**	**.0019**	**.0465**
Stddev	.0001	.09	.0004	.0009	.0000	.3	.0001	.0001	.0002
%RSD	230.8	.2437	5.744	.3356	2.819	.1802	5.522	3.639	.5091
#1	-.0001	38.67	.0058	.2608	.0008	145.2	.0011	.0019	.0467
#2	.0001	38.86	.0065	.2622	.0008	145.4	.0010	.0019	.0466
#3	-.0002	38.76	.0062	.2606	.0008	145.7	.0011	.0020	.0463

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0176**	**13.68**	**.8845**	**1.743**	**.1578**	**.0015**	**.5956**	**.0132**	**.2806**
Stddev	.0003	.02	.0359	.005	.0004	.0002	.0046	.0002	.0019
%RSD	1.683	.1705	4.054	.2782	.2405	14.51	.7647	1.660	.6898
#1	.0177	13.66	.8440	1.742	.1578	.0013	.6007	.0131	.2806
#2	.0179	13.70	.8971	1.749	.1581	.0015	.5940	.0135	.2825
#3	.0173	13.67	.9123	1.740	.1574	.0017	.5920	.0131	.2787

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0000**	**.0014**	**1.193**	**.0170**	**.7816**	**.3209**	**-.0023**	**.0288**	**.8697**
Stddev	.0017	.0008	.002	.0001	.0020	.0007	.0014	.0003	.0010
%RSD	6546.	57.63	.1900	.4456	.2602	.2290	60.31	.9158	.1191
#1	.0013	.0005	1.192	.0170	.7832	.3212	-.0011	.0287	.8709
#2	.0008	.0016	1.191	.0170	.7824	.3201	-.0021	.0291	.8693
#3	-.0020	.0021	1.195	.0171	.7793	.3214	-.0038	.0286	.8690

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2233.4**	**5804.4**	**42749.**	**4223.0**
Stddev	6.0	8.9	168.	20.5
%RSD	.26809	.15292	.39184	.48560
#1	2230.5	5794.4	42633.	4243.4
#2	2229.4	5811.2	42941.	4223.2
#3	2240.3	5807.7	42672.	4202.4

Zoom In Zoom Out

Sample Name: MP30674-SD1 Acquired: 8/3/2016 13:25:42 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0025**	**65.27**	**.0118**	**.4520**	**.0009**	**161.9**	**.0018**	**.0061**	**.0818**
Stddev	.0013	.21	.0000	.0027	.0002	.1	.0004	.0004	.0005
%RSD	52.83	.3178	.1311	.6009	26.12	.0664	19.65	7.247	.6725
#1	-.0020	65.09	.0118	.4500	.0006	162.0	.0022	.0062	.0811
#2	-.0015	65.21	.0118	.4510	.0010	161.8	.0015	.0056	.0821
#3	-.0040	65.49	.0118	.4551	.0010	161.9	.0019	.0064	.0821

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0373**	**23.24**	**1.392**	**2.578**	**.2580**	**.0032**	**.7839**	**.0200**	**.3932**
Stddev	.0007	.07	.173	.076	.0007	.0004	.0069	.0009	.0078
%RSD	1.966	.3038	12.42	2.938	.2710	13.87	.8851	4.682	1.983
#1	.0377	23.19	1.258	2.611	.2585	.0027	.7764	.0193	.3931
#2	.0378	23.20	1.330	2.491	.2572	.0034	.7902	.0196	.3855
#3	.0365	23.32	1.587	2.631	.2582	.0035	.7850	.0210	.4011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0018**	**.0019**	**1.081**	**.0182**	**1.377**	**.3460**	**-.0036**	**.0518**	**1.281**
Stddev	.0038	.0129	.006	.0007	.008	.0009	.0038	.0007	.004
%RSD	218.1	694.5	.5701	3.771	.5624	.2525	104.1	1.288	.3185
#1	-.0009	-.0035	1.074	.0174	1.375	.3452	-.0007	.0521	1.285
#2	-.0060	.0166	1.086	.0186	1.370	.3460	-.0079	.0510	1.281
#3	.0016	-.0075	1.084	.0185	1.385	.3469	-.0023	.0522	1.277

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2371.5**	**5637.0**	**41716.**	**4073.6**
Stddev	5.9	1.7	145.	9.2
%RSD	.24819	.02994	.34692	.22585
#1	2366.0	5638.9	41625.	4083.5
#2	2377.7	5635.6	41883.	4072.0
#3	2370.7	5636.5	41640.	4065.3

Zoom In Zoom Out

Sample Name: MP30674-PS1 Acquired: 8/3/2016 13:30:05 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0417**	**56.62**	**.0938**	**.6145**	**.0488**	**137.8**	**.0441**	**.0455**	**.1113**
Stddev	.0005	.19	.0008	.0027	.0004	.8	.0000	.0001	.0002
%RSD	1.308	.3292	.8462	.4327	.8014	.5734	.0583	.2486	.1597
#1	.0415	56.40	.0931	.6115	.0483	136.8	.0442	.0455	.1113
#2	.0413	56.73	.0938	.6164	.0490	138.3	.0441	.0454	.1111
#3	.0423	56.72	.0947	.6157	.0490	138.1	.0441	.0456	.1114

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1227**	**21.83**	**10.48**	**6.614**	**.2539**	**.0875**	**10.17**	**.1024**	**.4127**
Stddev	.0003	.14	.06	.071	.0001	.0002	.05	.0001	.0005
%RSD	.2460	.6278	.5812	1.080	.0441	.2714	.5275	.1246	.1184
#1	.1230	21.67	10.44	6.537	.2539	.0876	10.11	.1025	.4122
#2	.1224	21.92	10.45	6.678	.2538	.0877	10.20	.1023	.4128
#3	.1228	21.89	10.55	6.626	.2540	.0872	10.20	.1024	.4132

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0875**	**.0835**	**.8943**	**.0574**	**1.192**	**.3749**	**.0909**	**.0868**	**1.223**
Stddev	.0005	.0006	.0033	.0003	.005	.0006	.0013	.0005	.001
%RSD	.5983	.7391	.3730	.5040	.4545	.1615	1.387	.5938	.1095
#1	.0870	.0828	.8946	.0575	1.186	.3756	.0915	.0863	1.224
#2	.0874	.0836	.8908	.0571	1.193	.3745	.0895	.0871	1.222
#3	.0880	.0840	.8974	.0577	1.196	.3747	.0918	.0872	1.222

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2189.4**	**6116.9**	**45116.**	**4455.5**
Stddev	5.1	2.3	102.	31.4
%RSD	.23271	.03713	.22661	.70377
#1	2186.5	6115.3	45012.	4491.5
#2	2186.5	6119.5	45216.	4440.6
#3	2195.3	6115.9	45119.	4434.3

Zoom In Zoom Out

Sample Name: MP30674-S1 Acquired: 8/3/2016 13:34:24 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0415**	**95.32**	**1.590**	**2.210**	**.0485**	**215.1**	**.0434**	**.4195**	**.2533**
Stddev	.0004	.36	.005	.005	.0001	1.8	.0001	.0001	.0008
%RSD	.9406	.3825	.3454	.2384	.2198	.8135	.1435	.0243	.3293
#1	.0411	95.25	1.585	2.209	.0483	217.0	.0433	.4194	.2524
#2	.0419	95.71	1.590	2.216	.0485	214.9	.0434	.4194	.2535
#3	.0414	94.99	1.596	2.205	.0485	213.5	.0434	.4196	.2540

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2590**	**46.10**	**25.00**	**26.01**	**.7050**	**.3890**	**24.62**	**.4506**	F **4.810**
Stddev	.0005	.13	.09	.06	.0031	.0005	.10	.0004	.005
%RSD	.1880	.2818	.3585	.2399	.4438	.1320	.4139	.0997	.1122
#1	.2586	46.16	24.89	26.05	.7016	.3889	24.53	.4502	4.816
#2	.2596	46.20	25.04	26.04	.7058	.3895	24.73	.4511	4.805
#3	.2590	45.96	25.05	25.94	.7077	.3885	24.59	.4505	4.809

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1297**	**1.633**	**1.468**	**.4238**	**1.539**	**.6875**	**1.861**	**.4666**	**1.412**
Stddev	.0025	.002	.001	.0005	.006	.0021	.005	.0005	.001
%RSD	1.893	.0960	.0714	.1194	.3893	.3123	.2619	.1163	.0566
#1	.1271	1.631	1.468	.4243	1.537	.6855	1.863	.4663	1.411
#2	.1319	1.633	1.469	.4239	1.546	.6897	1.856	.4663	1.413
#3	.1301	1.634	1.467	.4233	1.534	.6872	1.865	.4672	1.412

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2095.1**	**5906.6**	**43351.**	**4365.5**
Stddev	2.2	8.1	169.	39.9
%RSD	.10614	.13691	.39044	.91445
#1	2092.5	5899.4	43457.	4343.8
#2	2096.7	5915.3	43156.	4341.1
#3	2096.0	5905.0	43439.	4411.6

Zoom In Zoom Out

Sample Name: MP30674-S2 Acquired: 8/3/2016 13:38:46 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0427**	**77.88**	**1.640**	**2.190**	**.0499**	**152.1**	**.0438**	**.4358**	**.2367**
Stddev	.0002	.19	.004	.004	.0005	.1	.0001	.0005	.0003
%RSD	.3802	.2399	.2704	.2007	.9393	.0693	.2545	.1091	.1423
#1	.0426	77.68	1.643	2.185	.0497	152.0	.0438	.4362	.2368
#2	.0427	78.05	1.642	2.190	.0505	152.2	.0436	.4353	.2363
#3	.0429	77.90	1.635	2.194	.0496	152.1	.0438	.4359	.2370

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2575**	**41.72**	**25.39**	**24.98**	**.6425**	**.4061**	**25.05**	**.4619**	**.7959**
Stddev	.0013	.10	.07	.08	.0011	.0004	.06	.0006	.0006
%RSD	.5149	.2321	.2955	.3017	.1670	.0866	.2373	.1384	.0814
#1	.2568	41.62	25.34	24.92	.6419	.4062	24.99	.4618	.7966
#2	.2566	41.72	25.48	25.07	.6437	.4057	25.11	.4613	.7957
#3	.2590	41.81	25.37	24.96	.6418	.4064	25.05	.4626	.7954

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1474**	**1.685**	**1.349**	**.4445**	**1.334**	**.5728**	**1.876**	**.4692**	**1.134**
Stddev	.0015	.007	.005	.0018	.002	.0024	.003	.0018	.004
%RSD	.9882	.4316	.3682	.4055	.1148	.4260	.1503	.3852	.3153
#1	.1464	1.686	1.353	.4452	1.333	.5703	1.876	.4708	1.132
#2	.1467	1.692	1.349	.4424	1.335	.5729	1.878	.4673	1.133
#3	.1491	1.678	1.343	.4458	1.332	.5751	1.873	.4695	1.139

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2136.0**	**5787.3**	**42465.**	**4240.0**
Stddev	.3	3.0	95.	11.5
%RSD	.01249	.05121	.22471	.27184
#1	2136.2	5784.0	42490.	4240.9
#2	2135.7	5789.8	42545.	4228.0
#3	2136.0	5788.1	42359.	4251.0

Zoom In Zoom Out

Sample Name: FA35796-11 Acquired: 8/3/2016 13:49:39 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**61.25**	**.0433**	**.6601**	**.0037**	**19.75**	**.0002**	**.0693**	**.0878**
Stddev	.0004	.28	.0011	.0027	.0000	.12	.0000	.0002	.0011
%RSD	613.7	.4512	2.485	.4073	1.191	.6027	23.06	.2232	1.203
#1	-.0001	61.43	.0422	.6610	.0037	19.78	.0002	.0692	.0890
#2	.0003	61.39	.0431	.6622	.0037	19.84	.0002	.0692	.0876
#3	-.0004	60.93	.0444	.6571	.0036	19.61	.0002	.0695	.0870

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1110**	**100.4**	**6.351**	**14.99**	F **4.924**	**.0047**	**.3542**	**.1104**	**.5223**
Stddev	.0006	.3	.062	.13	.022	.0002	.0038	.0002	.0007
%RSD	.5482	.3466	.9692	.8691	.4556	3.381	1.075	.2098	.1334
#1	.1117	100.6	6.380	15.02	4.920	.0049	.3502	.1103	.5221
#2	.1104	100.7	6.393	15.10	4.948	.0046	.3578	.1103	.5217
#3	.1110	100.0	6.280	14.85	4.904	.0046	.3545	.1107	.5230

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0013**	**.0002**	**1.508**	**.0152**	**.0589**	**1.704**	**.0006**	**.1669**	**.3314**
Stddev	.0007	.0012	.003	.0001	.0002	.008	.0013	.0003	.0004
%RSD	49.15	605.3	.1824	.7230	.3114	.4436	205.1	.1697	.1080
#1	.0012	-.0005	1.507	.0151	.0589	1.712	.0009	.1673	.3318
#2	.0007	.0015	1.507	.0153	.0591	1.702	.0017	.1668	.3311
#3	.0020	-.0004	1.511	.0152	.0587	1.697	-.0008	.1668	.3312

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2242.6**	**6020.4**	**44573.**	**4390.2**
Stddev	4.3	5.6	105.	21.4
%RSD	.19301	.09288	.23639	.48835
#1	2239.8	6025.7	44451.	4380.9
#2	2240.4	6021.0	44634.	4375.0
#3	2247.6	6014.6	44633.	4414.8

Zoom In Zoom Out

Sample Name: FA35796-12 Acquired: 8/3/2016 13:54:07 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**61.53**	**.0494**	**.5867**	**.0038**	**52.47**	**.0004**	**.0883**	**.1011**
Stddev	.0003	.08	.0008	.0033	.0000	.15	.0001	.0002	.0002
%RSD	77.65	.1279	1.531	.5659	1.113	.2822	29.72	.2051	.1994
#1	-.0007	61.46	.0489	.5860	.0037	52.64	.0004	.0883	.1010
#2	-.0001	61.51	.0503	.5838	.0038	52.35	.0003	.0885	.1013
#3	-.0003	61.61	.0491	.5903	.0038	52.42	.0005	.0882	.1009

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1351**	**125.2**	**6.312**	**31.81**	F **4.901**	**.0051**	**.2871**	**.1395**	**.4899**
Stddev	.0003	.1	.033	.16	.010	.0000	.0029	.0004	.0001
%RSD	.2453	.0732	.5189	.4953	.2006	.8198	1.015	.2523	.0278
#1	.1355	125.1	6.332	31.98	4.900	.0050	.2844	.1391	.4899
#2	.1348	125.3	6.329	31.77	4.911	.0051	.2902	.1397	.4901
#3	.1350	125.2	6.274	31.67	4.891	.0051	.2868	.1397	.4899

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0028**	**.0002**	**1.342**	**.0153**	**.0665**	**1.560**	**-.0006**	**.1841**	**.5505**
Stddev	.0009	.0014	.003	.0003	.0001	.001	.0013	.0008	.0009
%RSD	31.54	924.1	.2538	2.121	.1889	.0743	222.7	.4326	.1581
#1	.0018	.0014	1.341	.0156	.0664	1.561	.0008	.1850	.5515
#2	.0033	.0005	1.339	.0149	.0666	1.561	-.0007	.1836	.5502
#3	.0033	-.0014	1.346	.0154	.0666	1.559	-.0017	.1836	.5499

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2203.5**	**6055.1**	**44966.**	**4473.5**
Stddev	6.1	8.0	32.	20.5
%RSD	.27463	.13246	.07165	.45902
#1	2197.3	6050.6	44998.	4449.9
#2	2209.3	6064.3	44934.	4483.7
#3	2203.9	6050.2	44966.	4487.0

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 13:58:34 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2559	41.26	1.944	2.122	2.130	42.31	1.992	2.025	2.040
Stddev	.0006	.13	.007	.004	.007	.10	.002	.004	.000
%RSD	.2420	.3077	.3822	.1998	.3379	.2474	.1186	.2017	.0175
#1	.2565	41.39	1.937	2.127	2.136	42.43	1.990	2.023	2.040
#2	.2560	41.13	1.942	2.119	2.122	42.23	1.991	2.023	2.040
#3	.2553	41.26	1.952	2.119	2.131	42.28	1.994	2.030	2.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.054	39.83	42.58	41.46	2.157	1.971	42.58	2.070	1.977
Stddev	.006	.09	.09	.24	.002	.006	.06	.002	.005
%RSD	.2819	.2289	.2117	.5743	.0933	.3097	.1389	.0995	.2759
#1	2.053	39.90	42.66	41.70	2.159	1.968	42.63	2.067	1.973
#2	2.060	39.85	42.48	41.22	2.156	1.968	42.52	2.070	1.983
#3	2.048	39.73	42.60	41.46	2.156	1.978	42.59	2.071	1.975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.958	1.976	1.586	2.044	2.124	1.924	1.983	2.078	2.062
Stddev	.007	.004	.005	.001	.009	.004	.002	.004	.001
%RSD	.3664	.1834	.2955	.0451	.4109	.1905	.0858	.2005	.0551
#1	1.957	1.972	1.582	2.044	2.134	1.923	1.985	2.082	2.063
#2	1.952	1.975	1.584	2.044	2.117	1.928	1.983	2.079	2.063
#3	1.966	1.980	1.591	2.045	2.121	1.921	1.982	2.074	2.061
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 13:58:34 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2155.1	5262.5	39218.	3861.7
Stddev	3.8	5.6	86.	7.6
%RSD	.17709	.10720	.21853	.19660
#1	2154.1	5268.0	39120.	3852.9
#2	2151.8	5262.7	39278.	3865.4
#3	2159.3	5256.8	39258.	3866.6

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 14:02:46 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0103	-.0003	.0001	.0003	.0090	.0002	.0002	.0002
Stddev	.0002	.0012	.0009	.0003	.0000	.0003	.0000	.0001	.0003
%RSD	103.4	11.74	297.0	265.2	14.66	3.691	7.449	79.15	159.0
#1	.0004	.0098	.0000	-.0002	.0003	.0093	.0002	.0002	.0002
#2	.0002	.0117	.0004	.0005	.0004	.0087	.0002	.0000	-.0001
#3	.0000	.0095	-.0013	.0001	.0003	.0090	.0002	.0002	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0180	-.0150	.0214	.0004	F .0013	.0221	.0004	.0000
Stddev	.0003	.0012	.0609	.0017	.0001	.0003	.0120	.0001	.0002
%RSD	91.41	6.524	406.2	8.023	20.59	23.33	54.46	32.86	375.2
#1	.0003	.0173	-.0729	.0198	.0005	.0016	.0217	.0005	.0001
#2	.0006	.0194	.0484	.0212	.0004	.0014	.0344	.0002	.0002
#3	.0000	.0174	-.0205	.0232	.0003	.0010	.0103	.0005	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.0006	.0023	-.0001	.0004	.0006	.0003	.0001	.0002
Stddev	.0011	.0016	.0004	.0003	.0001	.0001	.0015	.0001	.0001
%RSD	68.18	257.5	18.43	204.7	22.69	12.36	483.2	57.65	37.29
#1	.0028	.0019	.0020	-.0004	.0005	.0007	-.0005	.0001	.0002
#2	.0015	.0011	.0027	.0002	.0004	.0006	-.0006	.0000	.0004
#3	.0006	-.0012	.0020	-.0002	.0003	.0005	.0021	.0001	.0002
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 14:02:46 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2422.2	5509.4	40642.	3948.3
Stddev	3.6	10.2	283.	15.6
%RSD	.14667	.18599	.69617	.39416
#1	2420.0	5502.0	40623.	3946.6
#2	2426.3	5521.1	40935.	3933.7
#3	2420.2	5505.1	40370.	3964.7

Zoom In Zoom Out

Sample Name: FA35796-13 Acquired: 8/3/2016 14:07:17 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**73.31**	**.0503**	**.6629**	**.0042**	**64.19**	**.0003**	**.0839**	**.1067**
Stddev	.0007	.42	.0008	.0032	.0000	.20	.0001	.0003	.0005
%RSD	402.7	.5672	1.640	.4753	.9560	.3116	27.85	.4127	.4233
#1	.0003	72.90	.0494	.6596	.0043	64.06	.0004	.0835	.1063
#2	.0001	73.30	.0507	.6632	.0042	64.09	.0003	.0840	.1072
#3	-.0009	73.73	.0510	.6658	.0042	64.42	.0002	.0842	.1067

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1432**	**122.3**	**9.867**	**36.81**	F **5.065**	**.0060**	**.3207**	**.1470**	**.4325**
Stddev	.0004	.5	.014	.16	.046	.0001	.0210	.0007	.0009
%RSD	.2922	.4487	.1432	.4394	.9064	2.452	6.541	.4448	.2166
#1	.1437	121.8	9.865	36.73	5.017	.0061	.3002	.1470	.4316
#2	.1430	122.2	9.882	36.71	5.109	.0058	.3198	.1463	.4324
#3	.1430	122.9	9.854	37.00	5.070	.0060	.3421	.1476	.4335

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0015**	**-.0012**	**1.435**	**.0157**	**.0796**	**1.602**	**-.0013**	**.1895**	**.4790**
Stddev	.0008	.0023	.005	.0005	.0007	.004	.0019	.0004	.0008
%RSD	54.73	202.4	.3447	3.325	.8601	.2821	144.4	.1922	.1717
#1	.0009	.0007	1.431	.0152	.0790	1.607	-.0001	.1894	.4792
#2	.0011	-.0004	1.440	.0156	.0795	1.599	-.0036	.1899	.4781
#3	.0024	-.0038	1.433	.0163	.0803	1.599	-.0004	.1892	.4797

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2168.6**	**6063.3**	**44918.**	**4461.8**
Stddev	2.7	11.4	119.	15.5
%RSD	.12353	.18874	.26578	.34807
#1	2169.8	6075.9	45035.	4467.9
#2	2170.5	6060.4	44923.	4473.3
#3	2165.6	6053.6	44796.	4444.1

Zoom In Zoom Out

Sample Name: FA35796-14 Acquired: 8/3/2016 14:11:46 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0003**	**82.53**	**.0572**	**.7530**	**.0047**	**93.01**	**.0003**	**.0959**	**.1148**
Stddev	.0002	.22	.0006	.0013	.0000	.25	.0001	.0003	.0006
%RSD	57.00	.2674	.9949	.1690	.7912	.2719	45.03	.2707	.5346
#1	-.0004	82.51	.0576	.7518	.0047	92.81	.0002	.0957	.1142
#2	-.0001	82.75	.0565	.7544	.0047	93.29	.0003	.0957	.1154
#3	-.0003	82.31	.0575	.7528	.0046	92.92	.0004	.0962	.1148

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1635**	**137.9**	**10.98**	**54.21**	F **5.719**	**.0064**	**.4309**	**.1655**	**.8345**
Stddev	.0001	.2	.07	.17	.011	.0001	.0103	.0003	.0027
%RSD	.0649	.1383	.6112	.3131	.1976	1.743	2.394	.1975	.3183
#1	.1634	137.9	10.98	54.09	5.719	.0066	.4197	.1652	.8342
#2	.1636	138.1	11.05	54.41	5.707	.0064	.4329	.1654	.8320
#3	.1635	137.7	10.92	54.14	5.730	.0064	.4401	.1658	.8373

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0014**	**-.0008**	**1.403**	**.0155**	**.0955**	**1.758**	**.0003**	**.2138**	**.5450**
Stddev	.0006	.0013	.004	.0002	.0003	.005	.0027	.0004	.0016
%RSD	42.72	157.7	.2838	1.530	.2624	.3084	907.4	.1791	.2861
#1	.0016	-.0008	1.399	.0158	.0952	1.753	.0033	.2134	.5456
#2	.0017	-.0021	1.402	.0155	.0957	1.764	-.0018	.2141	.5433
#3	.0007	.0004	1.407	.0153	.0956	1.756	-.0006	.2139	.5463

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2112.8**	**6164.4**	**45561.**	**4541.1**
Stddev	4.7	11.5	148.	10.8
%RSD	.22141	.18731	.32564	.23709
#1	2113.0	6171.9	45694.	4545.8
#2	2117.3	6170.2	45401.	4528.8
#3	2108.0	6151.1	45588.	4548.8

Zoom In Zoom Out

Sample Name: FA35796-15 Acquired: 8/3/2016 14:16:15 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0005**	**85.48**	**.0639**	**.7925**	**.0049**	**92.95**	**.0003**	**.0972**	**.1269**
Stddev	.0002	.20	.0005	.0023	.0001	.53	.0002	.0001	.0004
%RSD	37.65	.2315	.8121	.2873	1.733	.5673	72.45	.1240	.2901
#1	-.0003	85.41	.0635	.7903	.0050	92.62	.0004	.0973	.1265
#2	-.0005	85.71	.0645	.7948	.0049	93.56	.0000	.0971	.1272
#3	-.0007	85.33	.0637	.7924	.0050	92.68	.0004	.0971	.1269

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1761**	**150.4**	**11.48**	**53.64**	F **5.862**	**.0066**	**.4586**	**.1754**	**.4814**
Stddev	.0005	.4	.05	.31	.030	.0002	.0110	.0004	.0013
%RSD	.2823	.2334	.4048	.5762	.5125	3.557	2.398	.2005	.2671
#1	.1767	150.2	11.44	53.44	5.850	.0068	.4661	.1750	.4812
#2	.1759	150.8	11.53	54.00	5.896	.0063	.4636	.1755	.4803
#3	.1758	150.3	11.45	53.48	5.839	.0066	.4460	.1757	.4828

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0016**	**-.0015**	**1.310**	**.0152**	**.1033**	**1.944**	**-.0015**	**.2774**	**.5486**
Stddev	.0007	.0006	.004	.0002	.0003	.006	.0014	.0006	.0008
%RSD	41.35	38.62	.2938	1.031	.3385	.2966	95.49	.2239	.1422
#1	.0009	-.0018	1.313	.0151	.1029	1.951	.0001	.2780	.5479
#2	.0017	-.0017	1.306	.0154	.1036	1.943	-.0022	.2772	.5485
#3	.0023	-.0008	1.312	.0153	.1033	1.939	-.0025	.2769	.5494

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2118.8**	**6181.8**	**45905.**	**4550.4**
Stddev	1.9	10.3	194.	45.5
%RSD	.08939	.16673	.42232	1.0001
#1	2118.9	6173.6	46072.	4579.3
#2	2120.7	6193.4	45693.	4498.0
#3	2116.9	6178.6	45952.	4574.0

Zoom In Zoom Out

Sample Name: FA35796-16 Acquired: 8/3/2016 14:20:44 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0001**	**86.41**	**.0629**	**.8030**	**.0050**	**92.15**	**.0003**	**.0992**	**.1321**
Stddev	.0004	.04	.0005	.0019	.0001	.02	.0000	.0002	.0006
%RSD	787.4	.0447	.8455	.2315	2.054	.0243	14.86	.1825	.4453
#1	-.0004	86.39	.0634	.8050	.0050	92.13	.0003	.0991	.1326
#2	.0003	86.39	.0623	.8027	.0051	92.17	.0003	.0992	.1315
#3	.0003	86.46	.0629	.8013	.0049	92.13	.0002	.0994	.1323

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1979**	**157.5**	**11.57**	**54.16**	F **5.947**	**.0068**	**.4088**	**.1794**	**.4680**
Stddev	.0007	.1	.04	.10	.027	.0001	.0104	.0007	.0011
%RSD	.3715	.0741	.3080	.1756	.4474	1.830	2.554	.4152	.2422
#1	.1971	157.6	11.53	54.06	5.957	.0067	.3968	.1788	.4680
#2	.1984	157.5	11.60	54.19	5.968	.0069	.4159	.1793	.4668
#3	.1982	157.3	11.57	54.25	5.917	.0067	.4137	.1802	.4691

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0006**	**-.0004**	**1.166**	**.0159**	**.1003**	**1.740**	**-.0025**	**.2298**	**.5824**
Stddev	.0008	.0002	.002	.0004	.0001	.001	.0016	.0017	.0012
%RSD	131.1	48.56	.2059	2.469	.1067	.0318	63.43	.7359	.2055
#1	.0012	-.0002	1.166	.0155	.1005	1.740	-.0023	.2305	.5820
#2	.0010	-.0004	1.168	.0162	.1003	1.739	-.0041	.2278	.5815
#3	-.0003	-.0006	1.163	.0162	.1002	1.740	-.0010	.2309	.5838

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2111.6**	**6203.0**	**45859.**	**4537.7**
Stddev	3.1	8.7	149.	14.9
%RSD	.14507	.14070	.32542	.32749
#1	2115.1	6204.7	45913.	4549.2
#2	2110.1	6210.8	45974.	4520.9
#3	2109.5	6193.6	45690.	4543.1

Zoom In Zoom Out

Sample Name: FA35796-17 Acquired: 8/3/2016 14:25:12 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**96.42**	**.0657**	**.8773**	**.0057**	**80.85**	**.0003**	**.1050**	**.1418**
Stddev	.0004	.32	.0011	.0029	.0001	.46	.0000	.0002	.0007
%RSD	335.1	.3338	1.696	.3355	1.467	.5704	16.12	.1521	.5049
#1	.0003	96.05	.0648	.8740	.0057	80.32	.0004	.1048	.1411
#2	-.0005	96.58	.0670	.8797	.0056	81.12	.0003	.1052	.1417
#3	-.0002	96.63	.0654	.8782	.0058	81.11	.0003	.1050	.1425

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2067**	**161.0**	**12.82**	**48.40**	F **6.395**	**.0074**	**.4145**	**.1877**	**1.108**
Stddev	.0004	.6	.07	.23	.048	.0002	.0055	.0003	.000
%RSD	.2124	.3541	.5184	.4842	.7538	2.023	1.316	.1380	.0339
#1	.2067	160.3	12.75	48.14	6.399	.0076	.4101	.1877	1.108
#2	.2072	161.2	12.84	48.47	6.346	.0074	.4128	.1880	1.108
#3	.2063	161.4	12.88	48.59	6.442	.0073	.4206	.1875	1.108

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0029**	**-.0004**	**1.466**	**.0155**	**.1018**	**2.065**	**-.0008**	**.2445**	**.6201**
Stddev	.0017	.0004	.002	.0003	.0004	.005	.0022	.0004	.0003
%RSD	59.98	112.4	.1099	2.051	.4388	.2328	273.0	.1751	.0462
#1	.0025	.0001	1.464	.0151	.1013	2.065	.0002	.2441	.6198
#2	.0048	-.0008	1.466	.0157	.1019	2.061	-.0033	.2446	.6202
#3	.0014	-.0004	1.468	.0156	.1022	2.070	.0007	.2449	.6204

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2113.7**	**6366.3**	**47044.**	**4653.2**
Stddev	2.4	5.0	207.	27.1
%RSD	.11191	.07886	.43961	.58319
#1	2112.2	6370.3	47096.	4684.5
#2	2112.5	6368.0	47220.	4638.3
#3	2116.4	6360.7	46817.	4636.8

Zoom In Zoom Out

Sample Name: CRIA Acquired: 8/3/2016 14:29:41 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0090**	**.2551**	**.0094**	**.2190**	**.0054**	**1.156**	**.0052**	**.0529**	**.0108**
Stddev	.0005	.0097	.0008	.0009	.0000	.012	.0001	.0000	.0002
%RSD	5.033	3.821	8.089	.4116	.8807	1.027	1.510	.0740	2.233
#1	.0093	.2664	.0102	.2183	.0054	1.169	.0051	.0528	.0109
#2	.0085	.2493	.0087	.2200	.0054	1.152	.0052	.0529	.0110
#3	.0093	.2497	.0093	.2187	.0053	1.146	.0052	.0529	.0105

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0267**	**.3854**	**10.97**	**5.531**	**.0183**	**.0489**	**11.19**	**.0436**	**.0048**
Stddev	.0004	.0050	.08	.011	.0001	.0001	.03	.0003	.0007
%RSD	1.659	1.294	.7023	.2039	.3623	.2242	.2662	.6006	15.08
#1	.0263	.3884	10.88	5.544	.0182	.0488	11.16	.0433	.0050
#2	.0272	.3881	11.03	5.522	.0184	.0491	11.21	.0436	.0040
#3	.0265	.3796	11.00	5.527	.0183	.0489	11.21	.0439	.0054

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0050**	**.0104**	**.1151**	**.0527**	**.0108**	**.0104**	**.0086**	**.0507**	**.0224**
Stddev	.0009	.0005	.0005	.0005	.0001	.0001	.0002	.0001	.0000
%RSD	17.12	4.850	.4310	.9388	1.196	.4994	2.451	.1229	.1984
#1	.0040	.0101	.1146	.0522	.0106	.0105	.0084	.0508	.0224
#2	.0055	.0102	.1155	.0529	.0108	.0104	.0086	.0507	.0224
#3	.0055	.0110	.1153	.0531	.0108	.0104	.0088	.0506	.0224

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**2382.3**	**5487.3**	**40327.**	**3923.0**
Stddev	5.4	10.1	188.	12.3
%RSD	.22834	.18369	.46522	.31336
#1	2376.2	5477.2	40380.	3913.0
#2	2386.4	5487.4	40482.	3919.1
#3	2384.5	5497.3	40118.	3936.7

Zoom In Zoom Out

Sample Name: ICSA Acquired: 8/3/2016 14:34:06 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	F **525.4**	**-.0028**	**.0005**	**-.0001**	F **524.6**	**-.0015**	**.0006**	**.0001**
Stddev	.0001	6.2	.0029	.0001	.0001	5.4	.0001	.0002	.0001
%RSD	26.45	1.189	103.9	25.74	112.8	1.035	4.998	32.06	111.7
#1	-.0002	522.6	-.0002	.0005	-.0001	522.3	-.0016	.0005	.0000
#2	-.0002	532.5	-.0021	.0007	.0000	530.7	-.0016	.0005	.0003
#3	-.0003	521.0	-.0059	.0005	-.0001	520.6	-.0014	.0008	.0001

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0005**	**189.2**	**.0245**	F **549.0**	**.0004**	**-.0003**	**.1992**	**.0001**	**-.0021**
Stddev	.0004	.7	.0539	2.9	.0001	.0002	.0133	.0001	.0036
%RSD	84.42	.3692	219.6	.5284	23.74	75.03	6.701	264.3	167.2
#1	.0007	188.5	.0193	547.1	.0005	-.0005	.1981	.0002	-.0023
#2	.0000	189.9	-.0265	552.3	.0003	-.0004	.1864	.0000	-.0056
#3	.0007	189.2	.0808	547.5	.0005	.0000	.2130	.0000	.0015

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0009**	**-.0019**	**.0533**	**.0035**	**-.0008**	**-.0002**	**.0014**	**.0005**	**-.0014**
Stddev	.0013	.0026	.0005	.0001	.0004	.0001	.0051	.0002	.0002
%RSD	141.5	135.3	1.031	3.151	55.43	47.80	358.6	42.74	16.35
#1	.0018	.0008	.0537	.0036	-.0008	-.0003	.0050	.0008	-.0015
#2	-.0006	-.0044	.0534	.0035	-.0012	-.0001	.0037	.0004	-.0015
#3	.0016	-.0021	.0527	.0034	-.0003	-.0003	-.0044	.0005	-.0011

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1851.1**	**4828.8**	**35530.**	**3609.7**
Stddev	5.4	11.8	129.	24.1
%RSD	.29053	.24526	.36269	.66713
#1	1845.7	4828.1	35624.	3618.7
#2	1856.4	4841.0	35383.	3582.4
#3	1851.1	4817.3	35584.	3628.0

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 8/3/2016 14:38:44 Type: Unk
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	F **1.051**	F **526.5**	**1.047**	**.5626**	**.5420**	F **519.2**	**.9456**	**.4869**	**.5156**
Stddev	.001	9.1	.002	.0000	.0008	5.9	.0006	.0003	.0022
%RSD	.0927	1.724	.2202	.0053	.1447	1.144	.0632	.0555	.4231
#1	1.050	519.5	1.045	.5626	.5411	512.4	.9449	.4866	.5155
#2	1.050	523.3	1.047	.5627	.5427	523.3	.9460	.4870	.5135
#3	1.052	536.8	1.050	.5626	.5420	521.9	.9459	.4871	.5178

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.5606**	**185.0**	**.0518**	F **540.3**	**.5328**	**1.012**	**.2208**	**.9980**	**.9999**
Stddev	.0011	.8	.0398	2.5	.0005	.001	.0074	.0003	.0045
%RSD	.1889	.4112	76.77	.4631	.0997	.0786	3.352	.0259	.4472
#1	.5617	184.2	.0745	537.5	.5326	1.011	.2140	.9979	1.002
#2	.5604	185.7	.0059	541.2	.5335	1.012	.2198	.9978	1.003
#3	.5596	185.1	.0752	542.2	.5325	1.012	.2287	.9983	.9948

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**1.005**	**1.011**	**.1118**	**.9643**	**1.067**	**.9655**	**.9809**	**.4905**	**.9818**
Stddev	.001	.004	.0004	.0010	.003	.0018	.0015	.0010	.0024
%RSD	.0798	.3448	.3145	.1043	.2605	.1820	.1549	.1988	.2405
#1	1.004	1.009	.1114	.9633	1.066	.9637	.9792	.4904	.9834
#2	1.006	1.008	.1119	.9653	1.070	.9672	.9812	.4914	.9828
#3	1.004	1.015	.1121	.9641	1.065	.9656	.9822	.4895	.9791

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1822.7**	**4803.3**	**35528.**	**3599.2**
Stddev	2.7	6.3	52.	20.3
%RSD	.14908	.13084	.14760	.56334
#1	1819.8	4798.7	35556.	3622.0
#2	1823.1	4810.5	35468.	3592.8
#3	1825.2	4800.8	35560.	3583.0

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 14:43:14 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2549	41.66	1.944	2.137	2.161	42.86	1.991	2.026	2.040
Stddev	.0008	.13	.002	.006	.010	.11	.003	.003	.006
%RSD	.3081	.3178	.1036	.2776	.4831	.2572	.1395	.1339	.2898
#1	.2541	41.80	1.946	2.141	2.173	42.98	1.990	2.026	2.045
#2	.2557	41.62	1.942	2.130	2.152	42.84	1.988	2.023	2.042
#3	.2548	41.55	1.944	2.139	2.160	42.77	1.994	2.028	2.033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.056	40.09	43.21	42.10	2.171	1.971	43.23	2.079	1.987
Stddev	.007	.13	.05	.25	.003	.003	.07	.001	.005
%RSD	.3534	.3203	.1244	.5860	.1458	.1586	.1649	.0605	.2337
#1	2.051	40.21	43.27	42.36	2.174	1.971	43.30	2.078	1.984
#2	2.064	40.10	43.17	42.07	2.172	1.969	43.16	2.079	1.992
#3	2.052	39.95	43.19	41.87	2.168	1.975	43.23	2.081	1.984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.953	1.978	1.584	2.049	2.145	1.919	1.981	2.089	2.073
Stddev	.006	.007	.005	.004	.010	.002	.002	.004	.002
%RSD	.2935	.3524	.3084	.2094	.4652	.1065	.1157	.2165	.0949
#1	1.959	1.976	1.587	2.051	2.155	1.919	1.979	2.091	2.070
#2	1.950	1.972	1.578	2.044	2.136	1.921	1.983	2.091	2.074
#3	1.949	1.986	1.587	2.051	2.144	1.917	1.982	2.084	2.074
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 8/3/2016 14:43:14 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2135.4	5235.0	38860.	3780.0
Stddev	2.2	8.8	131.	21.9
%RSD	.10118	.16801	.33650	.57832
#1	2134.7	5226.9	38794.	3774.5
#2	2133.7	5244.4	38776.	3761.5
#3	2137.8	5233.8	39011.	3804.1

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 14:47:24 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	.0227	.0003	.0003	.0004	.0241	.0002	.0003	.0002
Stddev	.0002	.0084	.0005	.0002	.0001	.0084	.0001	.0001	.0000
%RSD	71.26	37.22	203.3	45.90	16.16	34.91	26.71	19.99	8.370
#1	-.0005	.0321	-.0003	.0002	.0005	.0335	.0003	.0003	.0002
#2	-.0001	.0200	.0004	.0005	.0004	.0215	.0002	.0003	.0002
#3	-.0005	.0159	.0007	.0003	.0003	.0173	.0002	.0002	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0240	.0315	.0135	.0003	F .0015	.0367	.0004	.0000
Stddev	.0001	.0064	.0324	.0079	.0000	.0002	.0128	.0002	.001
%RSD	22.34	26.67	102.6	58.37	4.315	14.92	34.77	41.82	3462.
#1	.0006	.0305	.0444	.0044	.0003	.0018	.0507	.0003	-.0005
#2	.0004	.0177	.0555	.0180	.0003	.0015	.0335	.0006	.0008
#3	.0005	.0238	-.0053	.0182	.0003	.0013	.0258	.0003	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	-.0007	.0023	.0001	.0006	.0006	-.0014	.0003	.0003
Stddev	.0006	.0013	.0002	.0002	.0001	.0001	.0006	.0001	.0001
%RSD	46.78	183.3	8.853	285.8	18.67	21.59	39.67	33.46	18.07
#1	.0014	-.0023	.0024	-.0001	.0007	.0006	-.0010	.0004	.0003
#2	.0006	.0002	.0020	.0003	.0006	.0008	-.0021	.0002	.0003
#3	.0017	-.0001	.0023	.0001	.0005	.0005	-.0012	.0002	.0002
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 8/3/2016 14:47:24 Type: QC
Method: 60102007_042011(v227) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2416.1	5489.2	40567.	3908.9
Stddev	5.2	9.7	151.	17.7
%RSD	.21722	.17737	.37158	.45313
#1	2417.6	5497.8	40570.	3929.3
#2	2420.4	5491.1	40716.	3899.8
#3	2410.3	5478.6	40414.	3897.6

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	☒	2	V	-0.005817	0.000000	No
			Fe	0.000008	0.000000	No
Al 396.152 { 85}	☒	1	Mo	0.040330	0.000000	No
As 189.042 {478}	☒	4	Fe	-0.000056	0.000000	No
			Cr	-0.000653	0.000000	No
			Mo	0.000444	0.000000	No
			Al	0.000001	0.000000	No
Ba 455.403 { 74}	☒	1	Fe	0.000016	0.000000	No
Be 313.042 {108}	☒	2	V	0.000625	0.000000	No
			Ti	-0.000289	0.000000	No
Ca 317.933 {106}	☒	None				
Cd 226.502 {449}	☒	4	Fe	0.000083	0.000000	No
			Ca	-0.000000	0.000000	No
			Al	-0.000002	0.000000	No
			Ti	0.000103	0.000000	No
Co 228.616 {447}	☒	3	Mo	-0.001220	0.000000	No
			Ti	0.002210	0.000000	No
			Fe	0.000005	0.000000	No
Cr 267.716 {126}	☒	4	Al	0.000005	0.000000	No
			Fe	-0.000001	0.000000	No
			Ca	0.000002	0.000000	No
			Cd	-0.000120	0.000000	No
Cu 324.754 {104}	☒	10	Mo	0.000189	0.000000	No
			Sn	-0.000012	0.000000	No
			V	-0.000158	0.000000	No
			Al	0.000003	0.000000	No
			Mg	0.000003	0.000000	No
			Co	-0.000547	0.000000	No
			Cd	0.000190	0.000000	No
			Fe	-0.000118	0.000000	No
			Ca	0.000001	0.000000	No
			Ti	-0.000268	0.000000	No
Fe 259.940 {130}	☒	None				
In 230.606 {446}*	☒	None				
K 766.490 { 44}	☒	None				
Mg 279.079 {121}	☒	None				
Mn 257.610 {131}	☒	2	Fe	-0.000001	0.000000	No
			Mg	0.000000	0.000000	No
Mo 202.030 {467}	☒	1	Fe	-0.000003	0.000000	No
Na 589.592 { 57}	☒	None				
Ni 231.604 {445}	☒	7	Fe	-0.000046	0.000000	No
			Co	0.000112	0.000000	No
			Mo	0.000980	0.000000	No
			Sb	-0.000120	0.000000	No
			Al	0.000003	0.000000	No
			Be	-0.000304	0.000000	No
			Tl	0.000172	0.000000	No
Pb 220.353 {453}	☒	8	Al	0.000178	0.000000	No
			Fe	0.000144	0.000000	No
			Mo	-0.002189	0.000000	No
			Cu	0.000467	0.000000	No
			Ti	0.000036	0.000000	No
			Si	0.000232	0.000000	No
			Ca	-0.000005	0.000000	No
			Cr	-0.000260	0.000000	No
Sb 206.833 {463}	☒	11	Fe	0.000017	0.000000	No
			Cr	0.011486	0.000000	No

	Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
				Mo	-0.003944	0.000000	No
				V	-0.000441	0.000000	No
				Sn	-0.008695	0.000000	No
				Ti	0.000278	0.000000	No
				Ca	0.000001	0.000000	No
				Ni	-0.000818	0.000000	No
				Al	0.000010	0.000000	No
				Mn	-0.000133	0.000000	No
				Mg	-0.000002	0.000000	No
	Se 196.090 {472}	☒	12	Fe	0.000011	0.000000	No
				Ca	-0.000003	0.000000	No
				Mn	0.000331	0.000000	No
				Mo	0.000111	0.000000	No
				Al	-0.000031	0.000000	No
				V	0.000000	0.000000	No
				Zn	0.000000	0.000000	No
				Sr	-0.000111	0.000000	No
				As	0.000125	0.000000	No
				Cd	-0.000250	0.000000	No
				Mg	-0.000004	0.000000	No
				Cr	-0.000326	0.000000	No
	Si 212.412 {459}	☒	1	Mo	0.000000	0.000000	No
	Sn 189.989 {477}	☒	None				
	Sr 407.771 { 83}	☒	1	Ca	0.000094	0.000000	No
	Ti 334.941 {101}	☒	1	Ca	-0.000011	0.000000	No
	Tl 190.856 {477}	☒	10	Co	0.004099	0.000000	No
				Fe	0.000005	0.000000	No
				Al	-0.000005	0.000000	No
				Ba	-0.000051	0.000000	No
				Ti	-0.000648	0.000000	No
				Sb	0.000167	0.000000	No
				Ca	-0.000004	0.000000	No
				Cr	0.000340	0.000000	No
				Mg	-0.000002	0.000000	No
				V	0.000015	0.000000	No
	V 292.402 {115}	☒	5	Fe	-0.000005	0.000000	No
				Cr	-0.003634	0.000000	No
				Mo	-0.009536	0.000000	No
				Ti	0.000303	0.000000	No
				Mn	-0.000333	0.000000	No
	Y 224.306 {450}*	☒	None				
	Y 360.073 { 94}*	☒	None				
	Y 371.030 { 91}*	☒	None				
	Zn 206.200 {463}	☒	5	Cr	-0.001305	0.000000	No
				Al	0.000011	0.000000	No
				Ca	0.000003	0.000000	No
				Fe	-0.000010	0.000000	No
				As	0.001105	0.000000	No

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.000199	0.574161	0.000000	1.000000
Al 396.152 { 85}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.002958	0.200846	0.000000	1.000000
As 189.042 {478}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.000612	0.161711	0.000000	1.000000
Ba 455.403 { 74}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.001417	6.855982	0.000000	1.000000
Be 313.042 {108}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.001174	12.058381	0.000000	1.000000
Ca 317.933 {106}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.006013	0.288442	0.000000	1.000000
Cd 226.502 {449}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.001504	4.138258	0.000000	1.000000
Co 228.616 {447}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.000766	2.306579	0.000000	1.000000
Cr 267.716 {126}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.000313	0.475492	0.000000	1.000000
Cu 324.754 {104}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.007833	0.807372	0.000000	1.000000
Fe 259.940 {130}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.000938	0.207944	0.000000	1.000000
In 230.606 {446}*	8/3/2016 9:12:58	5/5/2010 12:30:54	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
K 766.490 { 44}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.010796	0.076483	0.000000	1.000000
Mg 279.079 {121}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.000247	0.033542	0.000000	1.000000
Mn 257.610 {131}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.000366	2.177020	0.000000	1.000000
Mo 202.030 {467}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.000754	0.962937	0.000000	1.000000
Na 589.592 { 57}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.004405	0.312906	0.000000	1.000000
Ni 231.604 {445}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.000587	1.243585	0.000000	1.000000
Pb 220.353 {453}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.000230	0.819136	0.000000	1.000000
Sb 206.833 {463}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.000777	0.217144	0.000000	1.000000
Se 196.090 {472}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.000290	0.120052	0.000000	1.000000
Si 212.412 {459}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.004038	0.411804	0.000000	1.000000
Sn 189.989 {477}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.000627	0.370050	0.000000	1.000000
Sr 407.771 { 83}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.000603	12.725284	0.000000	1.000000
Ti 334.941 {101}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.001312	1.629649	0.000000	1.000000
Tl 190.856 {477}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.001581	0.274378	0.000000	1.000000
V 292.402 {115}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	-0.000687	0.643579	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 371.030 { 91}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	8/3/2016 9:12:58	8/3/2016 8:02:11	Linear	1/Conc	0.000835	2.232533	0.000000	1.000000

	Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
							Slope	Y-int	Slope factor	Offset
	Ag 328.068 {103}	0.999995	0.000018	0.000415	0.001382	OK.	1.000000	0.000000	1	0
	Al 396.152 { 85}	0.999900	0.004579	0.009322	0.031074	OK.	1.000000	0.000000	1	0
	As 189.042 {478}	0.999864	0.000214	0.000907	0.003022	OK.	1.000000	0.000000	1	0
	Ba 455.403 { 74}	0.999901	0.007778	0.000324	0.001080	OK.	1.000000	0.000000	1	0
	Be 313.042 {108}	0.999895	0.014071	0.000071	0.000236	OK.	1.000000	0.000000	1	0
	Ca 317.933 {106}	0.999746	0.010469	0.003467	0.011556	OK.	1.000000	0.000000	1	0
	Cd 226.502 {449}	0.999904	0.004620	0.000056	0.000186	OK.	1.000000	0.000000	1	0
	Co 228.616 {447}	0.999908	0.002529	0.000112	0.000374	OK.	1.000000	0.000000	1	0
	Cr 267.716 {126}	0.999831	0.000704	0.000305	0.001016	OK.	1.000000	0.000000	1	0
	Cu 324.754 {104}	0.999819	0.001233	0.000264	0.000881	OK.	1.000000	0.000000	1	0
	Fe 259.940 {130}	0.999782	0.007000	0.002536	0.008454	OK.	1.000000	0.000000	1	0
	In 230.606 {446}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	K 766.490 { 44}	0.999947	0.001271	0.038123	0.127077	OK.	1.000000	0.000000	1	0
	Mg 279.079 {121}	0.999809	0.001057	0.019901	0.066337	OK.	1.000000	0.000000	1	0
	Mn 257.610 {131}	0.999579	0.005087	0.000057	0.000189	OK.	1.000000	0.000000	1	0
	Mo 202.030 {467}	0.999994	0.000263	0.000155	0.000518	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	0.999915	0.006585	0.009636	0.032119	OK.	1.000000	0.000000	1	0
	Ni 231.604 {445}	0.999900	0.001416	0.000212	0.000708	OK.	1.000000	0.000000	1	0
	Pb 220.353 {453}	0.999836	0.001201	0.000718	0.002393	OK.	1.000000	0.000000	1	0
	Sb 206.833 {463}	0.999758	0.000384	0.001095	0.003651	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	0.999845	0.000170	0.001800	0.005999	OK.	1.000000	0.000000	1	0
	Si 212.412 {459}	0.988593	0.005053	0.000400	0.001332	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	0.999925	0.000365	0.000339	0.001129	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	0.999956	0.009616	0.000115	0.000384	OK.	1.000000	0.000000	1	0
	Ti 334.941 {101}	0.999999	0.000186	0.000131	0.000438	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	0.999795	0.000450	0.001229	0.004098	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	0.999933	0.000594	0.000293	0.000976	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Zn 206.200 {463}	0.999897	0.002576	0.000077	0.000258	OK.	1.000000	0.000000	1	0

SGS ACCUTEST FA35653

DOD + (MS)

SGS Accutest - Orlando Metals Digestion Log Soil

MP #: 30665 Method of Digestion: SW846-3050B

Prep Date/Time (mm/dd/yy 24:00): 8/1/16 13:47 * 1:47

HotBlock I.D. S

Thermometer I.D. 204

Correction Factor (°C) -1

Temperature Observed/Corrected (°C) 93/92

Balance I.D. ADVPR03

Spk. Sol. [A]	Volume Used(ml)	Pipette #
ACC 954	0.50	ID
ACC 924	0.25	ID
Met 5479	0.25	ID

Filter Lot#: 160217041

Dig. Tube Lot#: 1512329

Added [B]:	H_2O_2	HNO_3	HCL	PTFE Boiling Chips
Lot#	157487	1116010	4115120	SU71-6A030

Sample #			Wt., g	Final Volume(ml)	Comments
Method Blank(MB)			1.00	50.0	
Spike Blank(SB)			1.00		
Matrix Spike(MS)			1.36		
Matrix Spike Dup(MSD)			1.43		
Duplicate(DUP)			1.37		
1 QC [C]	FA35738-10	1	1.38		
2	21	1	1.01		
3	22	2	1.36		
4	23	2	1.29		
5	24	1	1.35		
6	25	1	1.27		
7	FA35760-1	5	1.10		
8	2		1.04		
9	3		1.24		
10	4		1.11		
11	5		1.27		
12	6		1.24		
13	7		1.17		
14	8		1.25		
15	9		1.41		
16	FA35653-1	1	1.32		
17	2		1.03		
18	3		1.12		
19	4		1.40		
20	5		1.18		
21 [E]					
22 [E]					
23 [E]					
24 [E]	DB				

8/1/16

Analyst: [signature] Date: 8/1/16

QC Review: [signature] Date: 8.2.16

A Used for SB, MS, MSD
B For reagent volumes used consult SOP MET 104, current revision
C Parent sample used to prepare MS, MSD, DUP
D Bottle Number
E Additional Matrix QC

icpsoildigestionlog 0316.xls Rev 03/04/16 DM

67 of 100

* DB 8/1/16

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: FA35653
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Sample: FA35653-1 **Analyzed:** 26-JUL-16 by VK **Method:** SM19 2540G
ClientID: FTBL-SS-B42-0-6-071516-QA

Wet Weight (Total)	9.61	g
Tare Weight	1.1	g
Dry Weight (Total)	8.9	g
Solids, Percent	91.7	%

Sample: FA35653-2 **Analyzed:** 26-JUL-16 by VK **Method:** SM19 2540G
ClientID: FTBL-SS-B50-12-24-071816-QA

Wet Weight (Total)	8.18	g
Tare Weight	1.04	g
Dry Weight (Total)	7.75	g
Solids, Percent	94	%

Sample: FA35653-3 **Analyzed:** 26-JUL-16 by VK **Method:** SM19 2540G
ClientID: FTBL-SS-B45-0-6-071916-QA

Wet Weight (Total)	9.15	g
Tare Weight	1.1	g
Dry Weight (Total)	8.29	g
Solids, Percent	89.3	%

Sample: FA35653-4 **Analyzed:** 26-JUL-16 by VK **Method:** SM19 2540G
ClientID: FTBL-SS-B18-0-6-072016-QA

Wet Weight (Total)	9.73	g
Tare Weight	1.1	g
Dry Weight (Total)	9.45	g
Solids, Percent	96.8	%

Sample: FA35653-5 **Analyzed:** 26-JUL-16 by VK **Method:** SM19 2540G
ClientID: FTBL-SS-B03-0-6-072116-QA

Wet Weight (Total)	12.98	g
Tare Weight	1.1	g
Dry Weight (Total)	10.02	g
Solids, Percent	75.1	%

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

November 21, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 14th & 15th, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37460:

SDG #	**Fraction:**
FA35653, FA36526	Metals

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #37460 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	Metals (6010C)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	FA35653	11/14/16	11/28/16	0	5																														
B	FA36526	11/15/16	11/29/16	2	0																														
Total	J/PG			2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\37460ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDGs: FA35653, FA36526

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

November 21, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the July through August 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by EPA SW 846 Method 6010C

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), interference check (ICSA and ICSAB) samples, laboratory control sample (LCS), split duplicate samples, and internal standards.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the method were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the method blanks reviewed by ADR.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
FA35653/ 6010C	ICB/CCB	Antimony	2.2 ug/L	FTBL-SS-B42-0-6-071516-QA FTBL-SS-B50-12-24-071816-QA FTBL-SS-B45-0-6-071916-QA FTBL-SS-B18-0-6-072016-QA FTBL-SS-B03-0-6-072116-QA
FA36526/ 6010C	ICB/CCB	Beryllium	0.30 ug/L	FTBL-SP-03-082916-QA FTBL-SP-03-082916-QAF

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
FA35653/ 6010C	FTBL-SS-B45-0-6-071916-QA	Antimony	2.1 ug/L	2.1U ug/L

VI. Field Blanks

No field blanks were identified in these SDGs.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were not required by the method.

IX. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in these SDGs, and therefore matrix spike and matrix spike duplicate analyses were not performed.

X. Duplicate Sample Analysis/Triplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) and triplicate (TRP) analyses specified for the samples in these SDGs, and therefore duplicate and triplicate analyses were not performed.

XI. Serial Dilution

Serial dilution was not performed for this SDG.

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XIII. Field Duplicates/Split Samples

No field duplicates were identified in this SDG.

Samples FTBL-SS-B42-0-6-071516-QA (from SDG FA35653) and FTBL-SS-B42-0-6-071516 (from SDG K1608210), FTBL-SS-B50-12-24-071816-QA (from SDG FA35653) and FTBL-SS-B50-12-24-071816 (from SDG K1608207), FTBL-SS-B45-0-6-071916-QA (from SDG FA35653) and FTBL-SS-B45-0-6-071916 (from SDG K1608209), FTBL-SS-B18-0-6-072016-QA (from SDG FA35653) and FTBL-SS-B18-0-6-072016 (from SDG K1608344), FTBL-SS-B03-0-6-072116-QA (from SDG FA35653) and FTBL-SS-B03-0-6-072116 (from SDG K1608325), FTBL-SP-03-082916-QA (from SDG FA36526) and FTBL-SP-03-082916 (from SDG K1610116), and FTBL-SP-03-082916-QAF (from SDG FA36526) and FTBL-SP-03-082916F (from SDG K1610116), were identified as split samples. No metals were detected in any of the split samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B45-0-6-071916 (SDG: K1608209)	FTBL-SS-B45-0-6-071916QA (SDG: FA35653)		
Antimony	0.543	2.1	118	NQ
Copper	18.7	17.3	8	
Lead	56.0	215	117	Jdet/A (det)
Zinc	54.7	48.7	13	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B42-0-6-071516 (SDG: K1608210)	FTBL-SS-B42-0-6-071516QA (SDG: FA35653)		
Antimony	0.894	0.83U	7	
Copper	24.1	24.4	1	
Lead	122	102	18	
Zinc	68.8	61.8	11	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B03-0-6-072116 (SDG: K1608325)	FTBL-SS-B03-0-6-072116QA (SDG: FA35653)		
Antimony	0.136	2.8U	181	NQ
Copper	9.48	9.8	3	
Lead	23.6	25.7	9	
Zinc	45.5	52.3	14	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B18-0-6-072016 (SDG: K1608344)	FTBL-SS-B18-0-6-072016QA (SDG: FA35653)		
Antimony	0.126	0.74U	142	NQ
Copper	16.8	14.6	14	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B18-0-6-072016 (SDG: K1608344)	FTBL-SS-B18-0-6-072016QA (SDG: FA35653)		
Lead	25.2	22.4	12	
Zinc	51.6	39.3	27	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SP-03-082916 (SDG: K1610116)	FTBL-SP-03-082916QA (SDG: FA36526)		
Antimony	0.429	5.0U	168	NQ
Arsenic	0.7	5.0U	151	NQ
Beryllium	3.03	3.1	2	
Copper	2.70	2.0	30	
Lead	0.117	2.0U	178	NQ
Nickel	1.08	1.0U	8	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SP-03-082916F (SDG: K1610116)	FTBL-SP-03-082916QAF (SDG: FA36526)		
Antimony	0.460	1.2	89	NQ
Arsenic	0.6	5.0U	157	NQ
Beryllium	2.85	2.8	2	
Copper	2.49	1.9	27	
Lead	0.074	2.0U	186	NQ
Nickel	1.07	1.0U	7	

NQ = One or both results were < 5x the Limit of Quantitation (LOQ), therefore no data were qualified.

XIV. Internal Standards

All internal standard percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the limit of quantitation (LOQ) as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to split sample RPD, data were qualified as estimated in one sample.

Due to results being reported below the LOQ, data were qualified as estimated in three samples.

Due to calibration blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2016	FTBL-SS-B42-0-6-071516-QA	FA35653-1	N	3050B	6010C	III
18-Jul-2016	FTBL-SS-B50-12-24-071816-	FA35653-2	N	3050B	6010C	III
19-Jul-2016	FTBL-SS-B45-0-6-071916-QA	FA35653-3	N	3050B	6010C	III
20-Jul-2016	FTBL-SS-B18-0-6-072016-QA	FA35653-4	N	3050B	6010C	III
21-Jul-2016	FTBL-SS-B03-0-6-072116-QA	FA35653-5	N	3050B	6010C	III
29-Aug-2016	FTBL-SP-03-082916-QA	FA36526-1	N	3010A	6010C	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: FA35653, FA36526 **Laboratory: ACTO**

EDD Filename: FA35653-SEDD_2a_1, FA36526-SEDD_2a_1 **eQAPP Name: Arcadis_FtBliss_Accutest_160627**

SDG: FA35653

Method Category: **METALS**

Method: **6010C** ***Matrix:*** **Soil**

Sample ID: **FTBL-SS-B03-0-6-072116-QA** ***Collected:*** **7/21/2016 12:10:00 PM** ***Analysis Type:*** **Dilution-01** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	9.8	J	1.1	LOD	14	LOQ	mg/Kg	J	RI

Sample ID: **FTBL-SS-B45-0-6-071916-QA** ***Collected:*** **7/19/2016 11:25:00 AM** ***Analysis Type:*** **Initial** ***Dilution:*** **4**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	2.1	J	1.0	LOD	4.0	LOQ	mg/Kg	U	Cb
LEAD	215		0.80	LOD	4.0	LOQ	mg/Kg	J	Fd

SDG: FA36526

Method Category: **METALS**

Method: **6010C** ***Matrix:*** **Water**

Sample ID: **FTBL-SP-03-082916-QA** ***Collected:*** **8/29/2016 1:50:00 PM** ***Analysis Type:*** **Initial/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	2.8	J	1.0	LOD	4.0	LOQ	ug/L	J	RI
COPPER	1.9	J	2.0	LOD	25	LOQ	ug/L	J	RI
ANTIMONY	1.2	J	5.0	LOD	6.0	LOQ	ug/L	J	RI

Sample ID: **FTBL-SP-03-082916-QA** ***Collected:*** **8/29/2016 1:50:00 PM** ***Analysis Type:*** **Initial/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	3.1	J	1.0	LOD	4.0	LOQ	ug/L	J	RI
COPPER	2.0	J	2.0	LOD	25	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: - USACE Project: Castner Firing Range; Ft Bliss, TX

Data Qualifier Summary

Lab Reporting Batch ID: FA35653, FA36526 **Laboratory: ACTO**

EDD Filename: FA35653-SEDD_2a_1, FA36526-SEDD_2a_1 **eQAPP Name: Arcadis_FtBliss_Accutest_160627**

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Fd	Field Duplicate Precision
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: - USACE Project: Castner Firing Range; Ft Bliss, TX

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

FA35653

Reporting Limit Outliers

Lab Reporting Batch ID: FA35653 **Laboratory: ACTO**

EDD Filename: FA35653-SEDD_2a_1 **eQAPP Name: Arcadis_FtBliss_Accutest_160627**

Method: **6010C**

Matrix: **Soil**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
FTBL-SS-B03-0-6-072116-QA	COPPER	J	9.8	14	LOQ	mg/Kg	J (all detects)
FTBL-SS-B45-0-6-071916-QA	ANTIMONY	J	2.1	4.0	LOQ	mg/Kg	J (all detects)

Project Name and Number: - USACE Project: Castner Firing Range; Ft Bliss, TX

LDC #: 37460A4b
SDG #: FA35653
Laboratory: Accutest

VALIDATION COMPLETENESS WORKSHEET
Level ADR

Date: 11/15/16
Page: 1 of 1
Reviewer: JD
2nd Reviewer: a

METHOD: Metals (EPA SW 846 Method 6010C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	Instrument Calibration	A	
III.	ICP Interference Check Sample (ICS) Analysis	A	
IV.	Laboratory Blanks	SW	ICB/CCB only
V.	Field Blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	
VII.	Duplicate sample analysis	N	
VIII.	Serial Dilution	N	Not Performed
IX.	Laboratory control samples	N	
X.	Split ~~Field~~ Duplicates	SW	*see Below
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B42-0-6-071516-QA	FA35653-1	Soil	07/15/16
2	FTBL-SS-B50-12-24-071816-QA	FA35653-2	Soil	07/18/16
3	FTBL-SS-B45-0-6-071916-QA	FA35653-3	Soil	07/19/16
4	FTBL-SS-B18-0-6-072016-QA	FA35653-4	Soil	07/20/16
5	FTBL-SS-B03-0-6-072116-QA	FA35653-5	Soil	07/21/16
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Notes: Parent Sample for #2 was on hold and never reported in SDG: K1608207

Split Dup = (3, FTBL-SS-B45-0-6-071916)(SDG: K1608209)
(1, FTBL-SS-B42-0-6-071516)(SDG: K1608210)
(5, FTBL-SS-B03-0-6-072116)(SDG: K1608325)

LDC #: 31460A40

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: SD
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-5	S	Al, (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37460A4b

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)
Soil preparation factor applied:
Sample Concentration units, unless otherwise noted:
Associated Samples: All (Dil: 1-4 = 5X; 5 = 10X)

					Sample Identification									
Analyte	**Maximum PB[a] (mg/Kg)**	**Maximum PB[a] (ug/L)**	**Maximum ICB/CCB[a] (ug/L)**	**Blank Action Limit**	3									
Sb			2.2	11	2.1									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37460A4b

VALIDATION FINDINGS WORKSHEET
split ~~Field~~ Duplicates

Reviewer: JD
2nd Reviewer: CV

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	FTBL-SS-B45-0-6-071916 (SDG: K1608209)	3		
Antimony	0.543	2.1	118	NQ
Copper	18.7	17.3	8	
Lead	56.0	215	117	Jdet/A (det)
Zinc	54.7	48.1	13	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	FTBL-SS-B42-0-6-071516 (SDG: K1608210)	1		
Antimony	0.894	0.83U	7	
Copper	24.1	24.4	1	
Lead	122	102	18	
Zinc	68.8	61.8	11	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	FTBL-SS-B03-0-6-072116 (SDG: K1608325)	5		
Antimony	0.136	2.8U	181	NQ
Copper	9.48	9.8	3	
Lead	23.6	25.7	9	
Zinc	45.5	52.3	14	

VALIDATION FINDINGS WORKSHEET
Split ~~Field~~ Duplicates

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	FTBL-SS-B18-0-6-072016 (SDG: K1608344)	4		
Antimony	0.126	0.74U	142	NQ
Copper	16.8	14.6	14	
Lead	25.2	22.4	12	
Zinc	51.6	39.3	27	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37460A4b.wpd

Quality Control
Outlier Reports

FA36526

Reporting Limit Outliers

Lab Reporting Batch ID: FA36526 **Laboratory: ACTO**

EDD Filename: FA36526-SEDD_2a_1 **eQAPP Name: Arcadis_FtBliss_Accutest_160627**

Method: **6010C**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
FTBL-SP-03-082916-QA	ANTIMONY	J	1.2	6.0	LOQ	ug/L	
	BERYLLIUM	J	2.8	4.0	LOQ	ug/L	J (all detects)
	COPPER	J	1.9	25	LOQ	ug/L	

Project Name and Number: - USACE Project: Castner Firing Range; Ft Bliss, TX

LDC #: 37460B4b
SDG #: FA36526
Laboratory: Accutest

VALIDATION COMPLETENESS WORKSHEET
Level ADR

Date: 11/15/16
Page: 1 of 1
Reviewer: SD
2nd Reviewer: [signature]

METHOD: Metals (EPA SW 846 Method 6010C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	Instrument Calibration	A	
III.	ICP Interference Check Sample (ICS) Analysis	A	
IV.	Laboratory Blanks	SW	ICB/CCB only
V.	Field Blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	
VII.	Duplicate sample analysis	N	
VIII.	Serial Dilution	N	Not Performed
IX.	Laboratory control samples	N	
X.	~~Field~~ Split Duplicates	SW	Split D.p (2, FTBL-SP-03-082916F) (1, FTBL-SP-03-082916) (SDG: FA36526) 0116
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Samples appended with "F" were analyzed as Dissolved

	Client ID	Lab ID	Matrix	Date
1	FTBL-SP-03-082916-QA	FA36526-1	Water	08/29/16
2	FTBL-SP-03-082916-QAF	FA36526-1F	Water	08/29/16
3				
4				
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13				
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15				

Notes:

LDC #: 51460B4D

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: SD
2nd reviewer: a

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-2	W	Al, (Sb), (As), Ba, (Be), Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, (Ni), K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37460B4b

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied:
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All

					Sample Identification									
Analyte	**Maximum PB[a] (mg/Kg)**	**Maximum PB[a] (ug/L)**	**Maximum ICB/CCB[a] (ug/L)**	**Blank Action Limit**	No Qual.									
Be			0.30	1.5										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37460B4b

VALIDATION FINDINGS WORKSHEET
Split ~~Field~~ Duplicates

Reviewer: JD
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤35)	Qual. (Parent Only)
	FTBL-SP-03-082916 (SDG: K1610116)	1		
Antimony	0.429	5.0U	168	NQ
Arsenic	0.7	5.0U	151	NQ
Beryllium	3.03	3.1	2	
Copper	2.70	2.0	30	
Lead	0.117	2.0U	178	NQ
Nickel	1.08	1.0U	8	

Analyte	Concentration (mg/Kg)		RPD (≤35)	Qual. (Parent Only)
	FTBL-SP-03-082916F (SDG: K1610116)	2		
Antimony	0.460	1.2	89	NQ
Arsenic	0.6	5.0U	157	NQ
Beryllium	2.85	2.8	2	
Copper	2.49	1.9	27	
Lead	0.074	2.0U	186	NQ
Nickel	1.07	1.0U	7	

NQ = No qual. if one or both results are < 5X LOQ

V:\FIELD DUPLICATES\FD_inorganic\37460B4b.wpd

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e-Hardcopy 2.0
Automated Report

Technical Report for

Arcadis-US, Inc

Castner Firing Range; Ft Bliss, TX

06261038.0001.0400

SGS Accutest Job Number: FA43270

Sampling Dates: 04/19/17 - 04/20/17

Report to:

Arcadis-US, Inc
401 E Main St Suite 400
El Paso, TX 79901
(b) (6)

Total number of pages in report: **165**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

(b) (6)
Technical Director

Client Service contact: (b) (6)

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(L-A-B L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AK, AR, GA, IA, KY, MA, NV, OK, OR, UT, WA

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Sections: 1 2 3 4 5 6 7 8

Table of Contents

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **5**
Section 4: Sample Results **6**
4.1: FA43270-1: FTBL-SS-B19-0-12-041917-R-QA 7
4.2: FA43270-2: FTBL-SS-B44-0-12-042017-R-QA 8
Section 5: Misc. Forms **9**
5.1: Chain of Custody 10
5.2: QC Evaluation: DOD QSM5 Limits 14
Section 6: Metals Analysis - QC Data Summaries **15**
6.1: Inst QC MA14018: Sb,Cu,Pb,Zn 16
6.2: Inst QC MA14023: Sb,Cu,Pb,Zn 36
6.3: Prep QC MP32050: Sb,Cu,Pb,Zn 57
6.4: IDL and Linear Range Summaries 63
Section 7: Metals Analysis - Raw Data **67**
7.1: Raw Data MA14018 68
7.2: Raw Data MA14023 114
7.3: Prep Logs 163
Section 8: General Chemistry - QC Data Summaries **164**
8.1: Percent Solids Raw Data Summary 165

Sample Summary

Arcadis-US, Inc

Job No: FA43270

Castner Firing Range; Ft Bliss, TX
Project No: 06261038.0001.0400

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA43270-1	04/19/17	13:25	AG	04/21/17	SO	Soil	FTBL-SS-B19-0-12-041917-R-QA
FA43270-2	04/20/17	09:35	AG	04/21/17	SO	Soil	FTBL-SS-B44-0-12-042017-R-QA

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Arcadis-US, Inc **Job No:** FA43270

Site: Castner Firing Range; Ft Bliss, TX **Report Date:** 5/1/2017 9:43:46 AM

2 Sample(s) were collected on/between 04/19/2017 and 04/20/2017 and were received at SGS Accutest Southeast (SASE) on 04/21/2017 properly preserved, at 3.8 Deg. C and intact. These Samples received an SASE job number of FA43270. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Metals By Method SW846 6010C

Matrix: SO **Batch ID:** MP32050

All samples were digested within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA43252-5DUP, FA43252-5MS, FA43252-5MSD, FA43252-5PS, FA43252-5SDL were used as the QC samples for metals.

Matrix Spike/Matrix Spike Duplicate Recovery(s) for Antimony, Copper are outside control limits. Spike recovery indicates possible matrix interference and/or sample non-homogeneity.

RPD(s) for Duplicate for Copper, Zinc are outside control limits for sample MP32050-D1. RPD acceptable due to low duplicate and sample concentrations.

RPD(s) for MSD for Antimony are outside control limits for sample MP32050-S2. High RPD due to possible sample non-homogeneity or incomplete digestion.

RPD(s) for Serial Dilution for Copper, Lead, Zinc are outside control limits for sample MP32050-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Sample(s) FA43270-1 for Antimony, Zinc, Copper have elevated reporting limit(s) due to matrix interference.

MP32050-PS1 for Zinc: Spike recovery indicates matrix interference and/or outside control limits due to high level in sample relative to spike amount.

FA43270-2 for Zinc: Sample dilution required due to difficult matrix.

FA43270-1 for Copper: Elevated reporting limit(s) due to matrix interference. Analyte detected in associated CCB.

MP32050-PS1 for Copper: Spike recovery indicates matrix interference and/or outside control limits due to high level in sample relative to spike amount.

FA43270-1 for Lead: Sample dilution required due to difficult matrix.

FA43270-2 for Antimony: Sample dilution required due to difficult matrix.

FA43270-2 for Copper: Sample dilution required due to difficult matrix.

Wet Chemistry By Method SM19 2540G

Matrix: SO **Batch ID:** GN74885

Sample(s) FA43261-1DUP were used as the QC samples for Solids, Percent.

SGS Accutest (SASE) certifies that this report meets the project requirements for analytical data produced for the samples as received at SASE and as stated on the COC. SASE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SASE Quality Manual except as noted above. This report is to be used in its entirety. SASE is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

_____ Date May 1, 2017

Kim Benham, Client Services (signature on file)

Summary of Hits

Job Number: FA43270
Account: Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX
Collected: 04/19/17 thru 04/20/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA43270-1	**FTBL-SS-B19-0-12-041917-R-QA**					
Copper [a]		6.7 JB	20	1.6	mg/kg	SW846 6010C
Lead [b]		12.0	4.0	0.81	mg/kg	SW846 6010C
Zinc [c]		53.8	16	4.0	mg/kg	SW846 6010C
FA43270-2	**FTBL-SS-B44-0-12-042017-R-QA**					
Antimony [b]		57.5	3.7	0.94	mg/kg	SW846 6010C
Copper [b]		348	4.7	0.37	mg/kg	SW846 6010C
Lead		12600	150	30	mg/kg	SW846 6010C
Zinc [b]		86.9	3.7	0.94	mg/kg	SW846 6010C

(a) Elevated reporting limit(s) due to matrix interference. Analyte detected in associated CCB.
(b) Sample dilution required due to difficult matrix.
(c) Elevated reporting limit(s) due to matrix interference.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: FTBL-SS-B19-0-12-041917-R-QA
Lab Sample ID: FA43270-1
Matrix: SO - Soil
Project: Castner Firing Range; Ft Bliss, TX

Date Sampled: 04/19/17
Date Received: 04/21/17
Percent Solids: 99.2

Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony [a]	4.0 U	16	4.0	1.0	mg/kg	20	04/26/17	04/27/17	LM	SW846 6010C [2]	SW846 3050B [3]
Copper [b]	6.7 JB	20	1.6	0.81	mg/kg	20	04/26/17	04/27/17	LM	SW846 6010C [2]	SW846 3050B [3]
Lead [c]	12.0	4.0	0.81	0.20	mg/kg	5	04/26/17	04/26/17	LM	SW846 6010C [1]	SW846 3050B [3]
Zinc [a]	53.8	16	4.0	2.4	mg/kg	20	04/26/17	04/27/17	LM	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA14018
(2) Instrument QC Batch: MA14023
(3) Prep QC Batch: MP32050

(a) Elevated reporting limit(s) due to matrix interference.
(b) Elevated reporting limit(s) due to matrix interference. Analyte detected in associated CCB.
(c) Sample dilution required due to difficult matrix.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

Report of Analysis

Client Sample ID:	FTBL-SS-B44-0-12-042017-R-QA		
Lab Sample ID:	FA43270-2	**Date Sampled:**	04/20/17
Matrix:	SO - Soil	**Date Received:**	04/21/17
		Percent Solids:	99.6
Project:	Castner Firing Range; Ft Bliss, TX		

Metals Analysis

Analyte	Result	LOQ	LOD	DL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony [a]	57.5	3.7	0.94	0.24	mg/kg	5	04/26/17	04/26/17	LM	SW846 6010C [1]	SW846 3050B [3]
Copper [a]	348	4.7	0.37	0.19	mg/kg	5	04/26/17	04/26/17	LM	SW846 6010C [1]	SW846 3050B [3]
Lead	12600	150	30	7.5	mg/kg	200	04/26/17	04/27/17	LM	SW846 6010C [2]	SW846 3050B [3]
Zinc [a]	86.9	3.7	0.94	0.56	mg/kg	5	04/26/17	04/26/17	LM	SW846 6010C [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA14018
(2) Instrument QC Batch: MA14023
(3) Prep QC Batch: MP32050

(a) Sample dilution required due to difficult matrix.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5 Limits

ACCUTEST LABORATORIES

Accutest Laboratories Southeast
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.accutest.com

FA43270

ACCUTEST JOB # : PAGE 1 OF 1

Accutest Quote # | SKIFF #

Client / Reporting Information

Arcadis
(b) (6)
6031 Plaza Dr. Highlands Ranch, Co 80129
Accounts payable. administration@arcadis.com

Project Information

Project Name: Closed Castner Firing Range
Street 401 E. Main St, Suite 400
City El Paso State Texas 79901
Project # 06201038. ALSP. 00100
Fax #
Client Purchase Order # 06201038. ALSP. 100

Sampler(s) Name(s) (Printed)
Sampler 1: Ana Gutierrez Sampler 2:

Analytical Information

Sb, Cu, Pb, Zn
TCLP Pb

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

Accutest Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH-ZN	DI WATER	MEOH		LAB USE ONLY
1	FTBL-SS-B19-012-041917-R-QA	04197	1325	AG	S	1		X								X	
2	FTBL-SS-B14-012-041917-R-QA	04197	0935	AG	S	1		X								X	

Turnaround Time (Business days)

Std. 10 Business Days Approved By: / Date/Rush Code:
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
(b) (6)	042017/1230	2 FX	3 FX	04-21-17	(b) (6) (AM) 09:15
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 3.8

5.1 5

FA43270: Chain of Custody
Page 1 of 4

SGS ACCUTEST - ORLANDO SAMPLE RECEIPT CONFIRMATION

SGS ACCUTEST'S JOB NUMBER: FA 43270 CLIENT: ARCADIS PROJECT: CLOSED CASTNER

DATE/TIME RECEIVED: 04-21-17 09:15 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 8026 5614 5150

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [X] TRIP BLANK NOT PROVIDED
- [X] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR +0.4
- [ ] OBSERVED TEMPS: 3.4
- [ ] CORRECTED TEMPS: 3.8 (USED FOR LIMS)

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#_____

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

TEST STRIP LOT#s pH 0-3 230315 pH 10-12 219813A OTHER (specify) _____

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE JE 04-21-17 REVIEWER SIGNATURE/DATE TCE Date 4-21-17

NF-02/16 receipt confirmation 020116.xls

5.1 5

FA43270: Chain of Custody
Page 2 of 4

5.1

5

FA43270: Chain of Custody
Page 3 of 4

Job Change Order: FA43270

Requested Date:	4/25/2017	**Received Date:**	4/21/2017
Account Name:	Arcadis-US, Inc	**Due Date:**	5/5/2017
Project	Castner Firing Range; Ft Bliss, TX	**Deliverable:**	FULT1
CSR:	sueb	**TAT (Days):**	14

Sample #: FA43270-2

Change: collection date is 04.20.17 per client

FTBL-SS-B44-0-12-041917-R-QA

Above Changes Per: Garett **Date:** 4/25/2017

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service

Page 1 of 1

QC Evaluation: DOD QSM5 Limits

Job Number: FA43270
Account: Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX
Collected: 04/19/17 thru 04/20/17

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
MP32050	SW846 6010C						
MP32050-B1	7440-36-0	Antimony	BSP	REC	101.6	%	79-114
MP32050-B1	7440-50-8	Copper	BSP	REC	105.6	%	81-117
MP32050-B1	7439-92-1	Lead	BSP	REC	100.8	%	81-112
MP32050-B1	7440-66-6	Zinc	BSP	REC	103.2	%	82-113
MP32050-S1*	7440-36-0	Antimony	MS	REC	32.8 [a]	%	79-114
MP32050-S1*	7440-50-8	Copper	MS	REC	77.8 [a]	%	81-117
MP32050-S1*	7439-92-1	Lead	MS	REC	102.4	%	81-112
MP32050-S1*	7440-66-6	Zinc	MS	REC	117.1	%	82-113
MP32050-S2*	7440-36-0	Antimony	MSD	REC	39.3 [a]	%	79-114
MP32050-S2*	7440-36-0	Antimony	MSD	RPD	28.9 [b]	%	20
MP32050-S2*	7440-50-8	Copper	MSD	REC	77.2 [a]	%	81-117
MP32050-S2*	7440-50-8	Copper	MSD	RPD	8.6	%	20
MP32050-S2*	7439-92-1	Lead	MSD	REC	103.3	%	81-112
MP32050-S2*	7439-92-1	Lead	MSD	RPD	10.9	%	20
MP32050-S2*	7440-66-6	Zinc	MSD	REC	117.6	%	82-113
MP32050-S2*	7440-66-6	Zinc	MSD	RPD	9.5	%	20
MP32050-D1*	7440-36-0	Antimony	DUP	RPD	0	%	20
MP32050-D1*	7440-50-8	Copper	DUP	RPD	121.6 [c]	%	20
MP32050-D1*	7439-92-1	Lead	DUP	RPD	5.7	%	20
MP32050-D1*	7440-66-6	Zinc	DUP	RPD	32.6 [c]	%	20

(a) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.
(b) High RPD due to possible sample non-homogeneity or incomplete digestion.
(c) RPD acceptable due to low duplicate and sample concentrations.

* Sample used for QC is not from job FA43270

Metals Analysis

6

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries
- IDL and Linear Range Summaries

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14018
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:56	MA14018-STD1	1		STDA
08:00	MA14018-STD2	1		STDB
08:03	MA14018-STD3	1		STDC
08:07	MA14018-STD4	1		STDD
08:11	MA14018-HSTD1	1		
08:21	MA14018-ICV1	1		
08:35	MA14018-ICB1	1		
08:39	MA14018-CRIA1	1		
08:45	MA14018-ICSA1	1		
08:51	MA14018-ICSAB1	1		
08:58	MA14018-CCV1	1		
09:07	MA14018-CCB1	1		
09:11	MP32034-MB1	1		
09:16	MP32034-MB2A	1		
09:20	MP32034-B1	1		
09:24	FA43249-1	200		(sample used for QC only; not part of login FA43270)
09:28	MP32034-D1	200		
09:32	MP32034-S1	200		
09:36	MP32034-S2	200		
09:41	MP32034-PS1	200		
09:45	MP32034-SD1	1000		
09:53	MA14018-CCV2	1		
09:57	MA14018-CCB2	1		
10:14	MA14018-CCV3	1		
10:18	MA14018-CCB3	1		
12:48	MA14018-CCV4	1		
12:59	MA14018-CCB4	1		
13:38	MP32050-MB1	1		
13:43	MP32050-B1	1		
13:51	MP32050-D1	1		
13:55	MP32050-SD1	5		
14:00	MP32050-PS1	1		
14:04	MP32050-S1	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14018
Parameters: Sb,Cu,Pb,Zn

	Time	Sample Description	Dilution Factor	PS Recov	Comments
	14:08	MP32050-S2	1		
	14:12	FA43270-1	5		
	14:17	FA43270-2	5		
---------->		Last reportable sample/prep for job FA43270			
	14:21	MA14018-CCV5	1		
	14:25	MA14018-CCB5	1		
	14:29	ZZZZZZ	1		
	14:33	ZZZZZZ	1		
	14:37	ZZZZZZ	1		
	14:41	ZZZZZZ	1		
	14:46	MP32048-MB1	1		
	14:50	MP32048-B1	1		
	14:54	FA43239-1	1		(sample used for QC only; not part of login FA43270)
	14:58	MP32048-D1	1		
	15:02	MP32048-SD1	5		
	15:07	MP32048-S1	1		
	15:11	MA14018-CCV6	1		
	15:15	MA14018-CCB6	1		
	15:19	MP32048-S2	1		
	15:23	FA43241-1	1		(sample used for QC only; not part of login FA43270)
	15:27	ZZZZZZ	1		
	15:32	ZZZZZZ	1		
	15:36	ZZZZZZ	1		
	15:40	ZZZZZZ	1		
	15:44	FA42676-1A	1		(sample used for QC only; not part of login FA43270)
	15:49	ZZZZZZ	1		
	15:53	MP32048-D2	1		
	15:57	MP32048-D3	1		
	16:02	MA14018-CCV7	1		
	16:06	MA14018-CCB7	1		
	16:10	MP32048-MB2	1		
	16:14	MP32048-B2	1		
	16:18	MP32048-MB3	1		
	16:23	MP32048-B3	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14018
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:27	MP32049-MB1	1		
16:31	MP32049-MB2A	1		
16:35	MP32049-B1	1		
16:39	FA43220-1F	1		(sample used for QC only; not part of login FA43270)
16:43	MP32049-D1	1		
16:48	MP32049-SD1	5		
16:52	MA14018-CCV8	1		
16:56	MA14018-CCB8	1		
17:00	MP32049-PS1	1		
17:04	MP32049-S1	1		
17:08	MP32049-S2	1		
17:12	ZZZZZZ	1		
17:17	ZZZZZZ	1		
17:21	ZZZZZZ	1		
17:25	ZZZZZZ	1		
17:29	ZZZZZZ	1		
17:33	ZZZZZZ	1		
17:37	ZZZZZZ	5		
17:42	MA14018-CCV9	1		
17:46	MA14018-CCB9	1		
17:50	ZZZZZZ	1		
17:54	ZZZZZZ	5		
17:59	ZZZZZZ	5		
18:03	ZZZZZZ	5		
18:07	ZZZZZZ	5		
18:11	ZZZZZZ	5		
18:16	ZZZZZZ	5		
18:20	ZZZZZZ	1		
18:24	ZZZZZZ	5		
18:28	ZZZZZZ	5		
18:33	MA14018-CCV10	1		
18:37	MA14018-CCB10	1		
18:41	ZZZZZZ	5		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14018
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:23	MA14018-CCV11	1		
19:27	MA14018-CCB11	1		
21:04	MA14018-CCV12	1		
21:08	MA14018-CCB12	1		
21:43	MA14018-CRIA2	1		
21:47	MA14018-ICSA2	1		
21:51	MA14018-ICSAB2	1		
21:56	MA14018-CCV13	1		
22:00	MA14018-CCB13	1		
---------->	Last reportable CCB for job FA43270			
22:04	MA14018-CCV14	1		
22:08	MA14018-CCB14	1		

Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14018
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:56	MA14018-STD1	5848	41490	4252	2114
08:00	MA14018-STD2	5783	40941	4243	1996
08:03	MA14018-STD3	5581	39854	4191	1822
08:07	MA14018-STD4	5339	37917	4216	1682
08:11	MA14018-HSTD1	5353	37792	4203	1686
08:21	MA14018-ICV1	5455	39419	4269	1807
08:35	MA14018-ICB1	5719 R	41652 R	4332 R	2108 R
08:39	MA14018-CRIA1	5652	41028	4276	2023
08:45	MA14018-ICSA1	5112	36196	4157	1617
08:51	MA14018-ICSAB1	5075	35915	4130	1576
08:58	MA14018-CCV1	5501	39692	4254	1806
09:07	MA14018-CCB1	5819	41037	4225	2104
09:11	MP32034-MB1	5769	42029	4292	2107
09:16	MP32034-MB2A	5747	42296	4338	2109
09:20	MP32034-B1	5610	40853	4344	1922
09:24	FA43249-1	5625	39999	4324	1967
09:28	MP32034-D1	5555	40062	4278	1948
09:32	MP32034-S1	5506	40114	4283	1947
09:36	MP32034-S2	5521	40056	4294	1951
09:41	MP32034-PS1	5548	39980	4244	1946
09:45	MP32034-SD1	5688	40675	4243	2044
09:53	MA14018-CCV2	5430	39372	4233	1795
09:57	MA14018-CCB2	5668	41584	4285	2085
10:14	MA14018-CCV3	5389	39125	4193	1780
10:18	MA14018-CCB3	5663	41487	4288	2083
12:48	MA14018-CCV4	5547	39436	4098	1797
12:59	MA14018-CCB4	5806	40693	4141	2083
13:38	MP32050-MB1	5782	41564	4184	2091
13:43	MP32050-B1	5629	39796	4117	1886
13:51	MP32050-D1	5843	41173	4635	1527
13:55	MP32050-SD1	5607	39456	4257	1752
14:00	MP32050-PS1	5788	40928	4689	1466
14:04	MP32050-S1	5777	40786	4651	1449

INTERNAL STANDARD SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14018
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:08	MP32050-S2	5605	39507	4480	1453
14:12	FA43270-1	9283 !	65427 !	6840 !	1944
14:17	FA43270-2	6900	48423	5035	1957
14:21	MA14018-CCV5	5544	39073	4125	1797
14:25	MA14018-CCB5	5793	40901	4186	2084
14:29	ZZZZZZ	5350	38062	4147	1787
14:33	ZZZZZZ	5539	40005	4169	1910
14:37	ZZZZZZ	5561	39739	4135	1909
14:41	ZZZZZZ	5595	39902	4177	1928
14:46	MP32048-MB1	5810	41558	4185	2091
14:50	MP32048-B1	5652	39619	4140	1899
14:54	FA43239-1	5534	38753	4163	1867
14:58	MP32048-D1	5550	39050	4176	1877
15:02	MP32048-SD1	5713	40333	4201	2001
15:07	MP32048-S1	5505	38919	4189	1794
15:11	MA14018-CCV6	5511	38971	4096	1788
15:15	MA14018-CCB6	5789	40700	4104	2070
15:19	MP32048-S2	5502	38987	4195	1794
15:23	FA43241-1	5380	37848	4044	1802
15:27	ZZZZZZ	5401	37988	4073	1818
15:32	ZZZZZZ	5506	38670	4112	1868
15:36	ZZZZZZ	5336	38359	4094	1816
15:40	ZZZZZZ	5354	38136	4100	1815
15:44	FA42676-1A	5504	39139	4192	1881
15:49	ZZZZZZ	5526	38731	4107	1857
15:53	MP32048-D2	5375	37905	4049	1810
15:57	MP32048-D3	5528	38838	4146	1877
16:02	MA14018-CCV7	5521	38924	4084	1790
16:06	MA14018-CCB7	5768	40667	4104	2072
16:10	MP32048-MB2	5519	38541	4155	1880
16:14	MP32048-B2	5478	38540	4131	1796
16:18	MP32048-MB3	5782	41280	4202	2090
16:23	MP32048-B3	5634	40068	4225	1901

INTERNAL STANDARD SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14018
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:27	MP32049-MB1	5758	41282	4106	2080
16:31	MP32049-MB2A	5715	41329	4149	2072
16:35	MP32049-B1	5671	39872	4216	1900
16:39	FA43220-1F	5256	36807	4035	1734
16:43	MP32049-D1	5278	37055	4033	1741
16:48	MP32049-SD1	5582	39207	4124	1921
16:52	MA14018-CCV8	5475	39068	4151	1786
16:56	MA14018-CCB8	5730	40411	4137	2063
17:00	MP32049-PS1	4954	36266	4064	1585
17:04	MP32049-S1	5326	37742	4118	1701
17:08	MP32049-S2	5317	37926	4142	1697
17:12	ZZZZZZ	5252	37198	4053	1744
17:17	ZZZZZZ	5331	37956	4109	1798
17:21	ZZZZZZ	5308	37862	4071	1797
17:25	ZZZZZZ	5638	39834	4259	1757
17:29	ZZZZZZ	5393	38501	4030	1838
17:33	ZZZZZZ	5465	38790	4061	1857
17:37	ZZZZZZ	5192	35793	3991	1661
17:42	MA14018-CCV9	5480	38845	4086	1784
17:46	MA14018-CCB9	5728	40579	4140	2067
17:50	ZZZZZZ	5610	40059	4112	1971
17:54	ZZZZZZ	5142	35410	3971	1634
17:59	ZZZZZZ	5205	36367	3991	1700
18:03	ZZZZZZ	5478	38277	4049	1852
18:07	ZZZZZZ	5416	37828	4023	1798
18:11	ZZZZZZ	4970	34752	3924	1595
18:16	ZZZZZZ	5216	36602	3987	1714
18:20	ZZZZZZ	5609	39873	4103	1968
18:24	ZZZZZZ	5176	36373	4002	1686
18:28	ZZZZZZ	5253	36800	4013	1750
18:33	MA14018-CCV10	5443	38863	4077	1780
18:37	MA14018-CCB10	5702	40401	4098	2058
18:41	ZZZZZZ	5124	35730	4011	1637

INTERNAL STANDARD SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14018
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:23	MA14018-CCV11	5561	38785	4020	1791
19:27	MA14018-CCB11	5819	40536	4017	2074
21:04	MA14018-CCV12	5496	38879	4023	1781
21:08	MA14018-CCB12	5659	40394	4088	2055
21:43	MA14018-CRIA2	5585	40353	4157	1999
21:47	MA14018-ICSA2	5049	35403	3987	1591
21:51	MA14018-ICSAB2	5060	35155	3899	1550
21:56	MA14018-CCV13	5363	38952	4108	1774
22:00	MA14018-CCB13	5649	40572	4144	2069
22:04	MA14018-CCV14	5394	38512	4090	1770
22:08	MA14018-CCB14	5661	40575	4127	2073

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	60-125 %
Istd#2	Yttrium (3600)	60-125 %
Istd#3	Yttrium (3710)	60-125 %
Istd#4	Indium	60-125 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA14018 Units: ug/l

Time:			08:35		09:07		09:57		10:18	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1	0.40	<6.0	1.4	<6.0	0.0	<6.0	0.60	<6.0
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	4.0	.2	anr							
Cadmium	5.0	.2	anr							
Calcium	1000	50	anr							
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.30	<25	0.50	<25	0.50	<25	0.50	<25
Iron	300	17	anr							
Lead	5.0	1	0.30	<5.0	0.10	<5.0	0.20	<5.0	0.0	<5.0
Magnesium	5000	35	anr							
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200	anr							
Selenium	10	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500	anr							
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	0.10	<20	0.0	<20	0.0	<20	0.0	<20

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA14018 Units: ug/l

Time: / Sample ID:			12:59 CCB4		14:25 CCB5		15:15 CCB6		16:06 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1	1.4	<6.0	0.30	<6.0	-0.60	<6.0	0.90	<6.0
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	4.0	.2	anr							
Cadmium	5.0	.2	anr							
Calcium	1000	50	anr							
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.80	<25	0.40	<25	0.60	<25	0.60	<25
Iron	300	17	anr							
Lead	5.0	1	0.50	<5.0	1.1	<5.0	0.20	<5.0	0.40	<5.0
Magnesium	5000	35	anr							
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200	anr							
Selenium	10	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500	anr							
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	0.20	<20	0.0	<20	-0.10	<20	0.0	<20

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA14018 Units: ug/l

Time: / Sample ID:			16:56 CCB8		17:46 CCB9		18:37 CCB10		19:27 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1	0.30	<6.0	0.70	<6.0	0.70	<6.0	1.6	<6.0
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	4.0	.2	anr							
Cadmium	5.0	.2	anr							
Calcium	1000	50	anr							
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.70	<25	0.40	<25	1.2	<25	0.80	<25
Iron	300	17	anr							
Lead	5.0	1	0.40	<5.0	0.0	<5.0	0.30	<5.0	0.20	<5.0
Magnesium	5000	35	anr							
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200	anr							
Selenium	10	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500	anr							
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	-0.10	<20	-0.10	<20	0.10	<20	0.10	<20

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA14018 Units: ug/l

Time:			21:08		22:00	
Sample ID:			CCB12		CCB13	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	14	anr			
Antimony	6.0	1	0.40	<6.0	0.30	<6.0
Arsenic	10	1.3	anr			
Barium	200	1	anr			
Beryllium	4.0	.2	anr			
Cadmium	5.0	.2	anr			
Calcium	1000	50	anr			
Chromium	10	1	anr			
Cobalt	50	.2	anr			
Copper	25	1	0.60	<25	0.60	<25
Iron	300	17	anr			
Lead	5.0	1	0.20	<5.0	0.50	<5.0
Magnesium	5000	35	anr			
Manganese	15	.5	anr			
Molybdenum	50	.3	anr			
Nickel	40	.4	anr			
Potassium	10000	200	anr			
Selenium	10	2.4	anr			
Silver	10	.7	anr			
Sodium	10000	500	anr			
Strontium	10	.5				
Thallium	10	1.1	anr			
Tin	50	.9				
Titanium	10	.5				
Vanadium	50	.5	anr			
Zinc	20	3	0.0	<20	-0.10	<20

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14018 Units: ug/l

Time:		08:21			08:58			09:53	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2060	103.0	2000	2000	100.0	2000	2030	101.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2030	101.5	2000	1970	98.5	2000	1970	98.5
Iron	anr								
Lead	2000	1990	99.5	2000	1970	98.5	2000	1980	99.0
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2050	102.5	2000	2010	100.5	2000	2030	101.5

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14018 Units: ug/l

Time:		10:14			12:48			14:21	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2040	102.0	2000	2000	100.0	2000	2000	100.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2000	100.0	2000	2020	101.0	2000	2010	100.5
Iron	anr								
Lead	2000	1990	99.5	2000	2040	102.0	2000	2020	101.0
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2040	102.0	2000	2050	102.5	2000	2040	102.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14018 Units: ug/l

Time:		15:11			16:02			16:52	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2010	100.5	2000	2000	100.0	2000	2020	101.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2010	100.5	2000	2000	100.0	2000	2000	100.0
Iron	anr								
Lead	2000	2030	101.5	2000	2020	101.0	2000	2010	100.5
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2050	102.5	2000	2040	102.0	2000	2040	102.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14018 Units: ug/l

Time:		17:42			18:33			19:23	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2030	101.5	2000	2040	102.0	2000	2010	100.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2020	101.0	2000	2020	101.0	2000	2040	102.0
Iron	anr								
Lead	2000	2020	101.0	2000	2020	101.0	2000	2060	103.0
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2050	102.5	2000	2060	103.0	2000	2070	103.5

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14018 Units: ug/l

Time:		21:04			21:56	
Sample ID:	CCV	CCV12		CCV	CCV13	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	2000	2040	102.0	2000	2080	104.0
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	2000	2030	101.5	2000	2010	100.5
Iron	anr					
Lead	2000	2050	102.5	2000	2020	101.0
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Potassium	anr					
Selenium	anr					
Silver	anr					
Sodium	anr					
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium	anr					
Zinc	2000	2070	103.5	2000	2090	104.5

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA14018 Units: ug/l

Time:		08:11	
Sample ID:	HSTD	HSTD1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	4000	4000	100.0
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	4000	4020	100.5
Iron	anr		
Lead	4000	4030	100.8
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Potassium	anr		
Selenium	anr		
Silver	anr		
Sodium	anr		
Strontium			
Thallium	anr		
Tin			
Titanium			
Vanadium	anr		
Zinc	4000	3960	99.0

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA14018 Units: ug/l

Time:			08:39		21:43	
Sample ID:	CRI	CRIA	CRIA1		CRIA2	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	400	200	anr			
Antimony	10	5.0	5.6	112.0	6.2	124.0
Arsenic	20	10	anr			
Barium	400	200	anr			
Beryllium	10	5.0	anr			
Cadmium	10	5.0	anr			
Calcium	2000	1000	anr			
Chromium	20	10	anr			
Cobalt	100	50	anr			
Copper	50	25	26.8	107.2	27.2	108.8
Iron	600	300	anr			
Lead	10	5.0	4.7	94.0	5.3	106.0
Magnesium	10000	5000	anr			
Manganese	30	15	anr			
Molybdenum	100	50	anr			
Nickel	80	40	anr			
Potassium	20000	10000	anr			
Selenium	20	10	anr			
Silver	20	10	anr			
Sodium	20000	10000	anr			
Strontium	20	10				
Thallium	20	10	anr			
Tin	100	50				
Titanium	20	10				
Vanadium	100	50	anr			
Zinc	40	20	21.3	106.5	21.6	108.0

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SB042617M1.ICP Date Analyzed: 04/26/17 Methods: SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA14018 Units: ug/l

Time:			08:45		08:51		21:47		21:51	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	501000	100.2	505000	101.0	513000	102.6	510000	102.0
Antimony		1000	-1.2		1060	106.0	1.4		1060	106.0
Arsenic		1000	0.90		1120	112.0	-1.4		1130	113.0
Barium		500	-0.10		507	101.4	0.60		525	105.0
Beryllium		500	0.0		489	97.8	0.0		493	98.6
Cadmium		1000	0.10		932	93.2	1.1		953	95.3
Calcium	500000	500000	484000	96.8	481000	96.2	485000	97.0	478000	95.6
Chromium		500	0.70		500	100.0	0.60		507	101.4
Cobalt		500	0.30		467	93.4	0.30		477	95.4
Copper		500	1.1		524	104.8	-0.20		537	107.4
Iron	200000	200000	176000	88.0	178000	89.0	169000	84.5	170000	85.0
Lead		1000	0.30		944	94.4	2.5		977	97.7
Magnesium	500000	500000	503000	100.6	501000	100.2	490000	98.0	494000	98.8
Manganese		500	0.10		492	98.4	0.20		503	100.6
Molybdenum		1000	0.80		1020	102.0	0.30		1030	103.0
Nickel		1000	0.0		949	94.9	-0.10		956	95.6
Potassium			54.8		82.3		246		175	
Selenium		1000	-1.8		1050	105.0	-3.3		1070	107.0
Silver		1000	0.90		950	95.0	1.0		963	96.3
Sodium			216		258		1200		970	
Strontium		1000	-0.60		1030	103.0	0.40		1080	108.0
Thallium		1000	0.40		986	98.6	0.60		1010	101.0
Tin		1000	8.7		985	98.5	2.4		985	98.5
Titanium		1000	-0.20		1030	103.0	-0.40		1060	106.0
Vanadium		500	-0.20		471	94.2	0.10		481	96.2
Zinc		1000	2.2		936	93.6	2.5		955	95.5

(*) Outside of QC limits
(anr) Analyte not requested

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14023
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:56	MA14023-STD1	1		STDA
08:00	MA14023-STD2	1		STDB
08:04	MA14023-STD3	1		STDC
08:07	MA14023-STD4	1		STDD
08:12	MA14023-HSTD1	1		
08:19	MA14023-ICV1	1		
08:36	MA14023-ICB1	1		
08:44	MA14023-CRIA1	1		
08:50	MA14023-ICSA1	1		
08:55	MA14023-ICSAB1	1		
09:03	MA14023-CCV1	1		
09:11	MA14023-CCB1	1		
09:15	MP32051-MB1	1		
09:20	MP32051-B1	1		
09:24	FA43320-1	5		(sample used for QC only; not part of login FA43270)
09:28	MP32051-D1	5		
09:33	MP32051-SD1	25		
09:42	MP32051-S1	5		
09:46	MP32051-S2	5		
09:55	MP32051-PS1	5		
10:04	MA14023-CCV2	1		
10:09	MA14023-CCB2	1		
10:18	ZZZZZZ	5		
10:22	ZZZZZZ	5		
10:27	ZZZZZZ	5		
10:31	ZZZZZZ	5		
10:36	ZZZZZZ	5		
10:41	ZZZZZZ	5		
10:50	ZZZZZZ	1		
10:54	ZZZZZZ	1		
10:58	MA14023-CCV3	1		
11:03	MA14023-CCB3	1		
11:07	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14023
Parameters: Sb,Cu,Pb,Zn

	Time	Sample Description	Dilution Factor	PS Recov	Comments
	11:12	ZZZZZZ	1		
	11:21	FA43252-5	10		(sample used for QC only; not part of login FA43270)
	11:25	MP32050-D1	10		
	11:30	MP32050-S1	10		
	11:34	MP32050-S2	10		
	11:39	MP32050-PS1	10		
	11:43	MP32050-SD1	50		
	11:48	FA43270-1	20		
	11:52	MA14023-CCV4	1		
	11:56	MA14023-CCB4	1		
	12:01	FA43270-2	200		
---------->		Last reportable sample/prep for job FA43270			
	12:05	ZZZZZZ	5		
	12:10	MA14023-CCV5	1		
	12:14	MA14023-CCB5	1		
	13:07	MA14023-ICV2	1		
	13:15	MA14023-CCV6	1		
	13:22	MA14023-CCB6	1		
	13:27	MP32057-MB1	1		
	13:32	MP32057-B1	1		
	13:36	FA43358-1	1		(sample used for QC only; not part of login FA43270)
	13:41	MP32057-D1	1		
	13:45	MP32057-SD1	5		
	13:50	MP32057-PS1	1		
	13:54	MP32057-S1	1		
	13:58	MP32057-S2	1		
	14:02	ZZZZZZ	5		
	14:07	ZZZZZZ	1		
	14:12	MA14023-CCV7	1		
	14:16	MA14023-CCB7	1		
	14:21	ZZZZZZ	1		
	14:25	ZZZZZZ	1		
	14:29	ZZZZZZ	1		
	14:34	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14023
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:38	ZZZZZZ	1		
14:43	ZZZZZZ	1		
14:47	ZZZZZZ	5		
14:52	ZZZZZZ	1		
14:56	ZZZZZZ	1		
15:01	ZZZZZZ	1		
15:05	MA14023-CCV8	1		
15:09	MA14023-CCB8	1		
15:14	ZZZZZZ	1		
15:18	ZZZZZZ	1		
15:23	ZZZZZZ	1		
15:27	ZZZZZZ	1		
15:32	ZZZZZZ	1		
15:36	ZZZZZZ	1		
15:41	ZZZZZZ	1		
15:46	MP32058-MB1	1		
15:50	MP32058-B1	1		
15:54	FA43373-4	1		(sample used for QC only; not part of login FA43270)
15:59	MA14023-CCV9	1		
16:03	MA14023-CCB9	1		
16:08	MP32058-D1	1		
16:12	MP32058-SD1	5		
16:16	MP32058-PS1	1		
16:21	MP32058-S1	1		
16:25	MP32058-S2	1		
16:29	ZZZZZZ	1		
16:34	ZZZZZZ	1		
16:38	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:47	ZZZZZZ	1		
16:51	MA14023-CCV10	1		
16:55	MA14023-CCB10	1		
17:00	ZZZZZZ	1		

SGS Accutest Instrument Runlog
Inorganics Analyses

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14023
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:04	MP32059-MB1	1		
17:09	MP32059-B1	1		
17:13	FA43368-1	1		(sample used for QC only; not part of login FA43270)
17:18	MP32059-D1	1		
17:22	MP32059-SD1	5		
17:26	MP32059-PS1	1		
17:31	MP32059-S1	1		
17:35	MP32059-S2	1		
17:40	ZZZZZZ	1		
17:44	MA14023-CCV11	1		
17:49	MA14023-CCB11	1		
17:53	ZZZZZZ	5		
17:58	ZZZZZZ	5		
18:02	ZZZZZZ	5		
18:06	ZZZZZZ	1		
18:11	ZZZZZZ	1		
18:15	ZZZZZZ	1		
18:28	MA14023-CCV12	1		
18:33	MA14023-CCB12	1		
18:37	MA14023-CCV13	1		
18:41	MA14023-CCB13	1		
19:25	MA14023-CRIA2	1		
19:30	MA14023-CCV14	1		
19:34	MA14023-CCB14	1		
19:39	MA14023-ICSA2	1		
19:43	MA14023-ICSAB2	1		
19:48	MA14023-CCV15	1		
19:52	MA14023-CCB15	1		

----------> Last reportable CCB for job FA43270
Refer to raw data for calibration curve and standards.

INTERNAL STANDARD SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14023
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:56	MA14023-STD1	4628	33473	6889	1636
08:00	MA14023-STD2	4459	32407	6708	1567
08:04	MA14023-STD3	4356	32208	6623	1499
08:07	MA14023-STD4	4208	31664	6585	1405
08:12	MA14023-HSTD1	4227	31842	6630	1415
08:19	MA14023-ICV1	4365	32286	6667	1506
08:36	MA14023-ICB1	4476 R	32681 R	6790 R	1602 R
08:44	MA14023-CRIA1	4471	32830	6870	1602
08:50	MA14023-ICSA1	4078	30705	6546	1369
08:55	MA14023-ICSAB1	4039	30400	6462	1339
09:03	MA14023-CCV1	4308	32237	6699	1501
09:11	MA14023-CCB1	4448	32400	6855	1606
09:15	MP32051-MB1	4451	32670	6958	1603
09:20	MP32051-B1	4348	32320	6824	1550
09:24	FA43320-1	4379	32819	6854	1596
09:28	MP32051-D1	4338	32425	6781	1586
09:33	MP32051-SD1	4382	32444	6794	1600
09:42	MP32051-S1	4282	32377	6762	1557
09:46	MP32051-S2	4296	32402	6770	1561
09:55	MP32051-PS1	4302	32406	6796	1578
10:04	MA14023-CCV2	4278	32443	6890	1513
10:09	MA14023-CCB2	4371	32241	6839	1591
10:18	ZZZZZZ	4139	31414	6586	1517
10:22	ZZZZZZ	4065	31372	6583	1453
10:27	ZZZZZZ	3959	30745	6524	1399
10:31	ZZZZZZ	3878	30138	6468	1357
10:36	ZZZZZZ	4034	31239	6595	1449
10:41	ZZZZZZ	4157	31849	6716	1506
10:50	ZZZZZZ	4290	32644	7029	1533
10:54	ZZZZZZ	4267	32253	6873	1573
10:58	MA14023-CCV3	4244	32266	6807	1508
11:03	MA14023-CCB3	4358	32344	6909	1602
11:07	ZZZZZZ	4271	32218	6865	1582

INTERNAL STANDARD SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14023
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:12	ZZZZZZ	4225	32038	6884	1558
11:21	FA43252-5	4216	32142	6885	1525
11:25	MP32050-D1	4251	32361	6911	1543
11:30	MP32050-S1	4222	32142	6892	1521
11:34	MP32050-S2	4208	31867	6808	1524
11:39	MP32050-PS1	4221	32285	6812	1525
11:43	MP32050-SD1	4285	32120	6840	1582
11:48	FA43270-1	4965	37043	7896	1587
11:52	MA14023-CCV4	4171	31687	6766	1484
11:56	MA14023-CCB4	4305	31779	6887	1582
12:01	FA43270-2	4350	32301	6954	1590
12:05	ZZZZZZ	4306	32370	6837	1587
12:10	MA14023-CCV5	4174	31914	6747	1484
12:14	MA14023-CCB5	4314	31946	6865	1589
13:07	MA14023-ICV2	4125	31343	6720	1474
13:15	MA14023-CCV6	4143	31675	6740	1479
13:22	MA14023-CCB6	4273	31676	6820	1584
13:27	MP32057-MB1	4285	32007	6964	1580
13:32	MP32057-B1	4205	31884	6886	1532
13:36	FA43358-1	4110	31551	6771	1517
13:41	MP32057-D1	4099	31530	6751	1517
13:45	MP32057-SD1	4261	31994	6929	1584
13:50	MP32057-PS1	4077	31539	6764	1502
13:54	MP32057-S1	4079	31172	6821	1474
13:58	MP32057-S2	4069	31158	6822	1466
14:02	ZZZZZZ	No results reported for the elements associated with this internal standard.			
14:07	ZZZZZZ	No results reported for the elements associated with this internal standard.			
14:12	MA14023-CCV7	4118	31446	6776	1481
14:16	MA14023-CCB7	4265	31867	6898	1582
14:21	ZZZZZZ	4220	31937	6981	1572
14:25	ZZZZZZ	4268	32136	6941	1587
14:29	ZZZZZZ	4277	32438	6970	1588
14:34	ZZZZZZ	4245	32073	6967	1567

INTERNAL STANDARD SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14023
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:38	ZZZZZZ	4276	32118	6957	1587
14:43	ZZZZZZ	4226	32040	6943	1556
14:47	ZZZZZZ	3986	30795	6596	1419
14:52	ZZZZZZ	4118	31682	6749	1516
14:56	ZZZZZZ	4175	31930	6779	1534
15:01	ZZZZZZ	4125	31648	6710	1524
15:05	MA14023-CCV8	4185	31878	6785	1491
15:09	MA14023-CCB8	4316	31889	6860	1589
15:14	ZZZZZZ	4224	32090	6834	1561
15:18	ZZZZZZ	4158	31781	6703	1530
15:23	ZZZZZZ	4021	31109	6537	1443
15:27	ZZZZZZ	4271	32189	6872	1575
15:32	ZZZZZZ	3981	30838	6525	1423
15:36	ZZZZZZ	4043	31266	6611	1444
15:41	ZZZZZZ	4123	31643	6612	1484
15:46	MP32058-MB1	4358	32437	6929	1589
15:50	MP32058-B1	4288	32172	6838	1541
15:54	FA43373-4	4295	32332	6818	1571
15:59	MA14023-CCV9	4296	32689	6867	1515
16:03	MA14023-CCB9	4425	32722	6905	1612
16:08	MP32058-D1	4319	32231	6852	1575
16:12	MP32058-SD1	4410	32614	6876	1614
16:16	MP32058-PS1	4283	32157	6854	1555
16:21	MP32058-S1	4239	31856	6788	1509
16:25	MP32058-S2	4262	32173	6791	1517
16:29	ZZZZZZ	4347	32524	6891	1572
16:34	ZZZZZZ	4381	32787	6920	1585
16:38	ZZZZZZ	4404	32786	7047	1617
16:42	ZZZZZZ	4332	32363	6918	1568
16:47	ZZZZZZ	4315	32426	6923	1572
16:51	MA14023-CCV10	4259	32375	6824	1503
16:55	MA14023-CCB10	4339	32029	6785	1580
17:00	ZZZZZZ	4366	32578	6943	1603

INTERNAL STANDARD SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
Analyst: LM Run ID: MA14023
Parameters: Sb,Cu,Pb,Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:04	MP32059-MB1	4350	32565	7009	1590
17:09	MP32059-B1	4288	32110	6822	1539
17:13	FA43368-1	6420 !	47820 !	10324 !	1489
17:18	MP32059-D1	6534 !	48939 !	10563 !	1484
17:22	MP32059-SD1	4803	35585	7620	1578
17:26	MP32059-PS1	6364 !	47647 !	10321 !	1480
17:31	MP32059-S1	6197 !	46581 !	10101 !	1440
17:35	MP32059-S2	6325 !	47678 !	10425 !	1416
17:40	ZZZZZZ	7520 !	55809 !	12067 !	1484
17:44	MA14023-CCV11	4137	31384	6685	1469
17:49	MA14023-CCB11	4286	31718	6782	1569
17:53	ZZZZZZ	4562	34683	7359	1486
17:58	ZZZZZZ	4576	34777	7419	1480
18:02	ZZZZZZ	4519	33956	7277	1514
18:06	ZZZZZZ	4616	34466	7422	1597
18:11	ZZZZZZ	4489	33648	7272	1584
18:15	ZZZZZZ	4510	33855	7255	1595
18:28	MA14023-CCV12	4118	31338	6689	1467
18:33	MA14023-CCB12	4246	31583	6744	1566
18:37	MA14023-CCV13	4081	31212	6625	1454
18:41	MA14023-CCB13	4236	31463	6757	1561
19:25	MA14023-CRIA2	4257	31725	6677	1566
19:30	MA14023-CCV14	4074	30869	6557	1446
19:34	MA14023-CCB14	4241	31257	6689	1557
19:39	MA14023-ICSA2	3882	29635	6388	1330
19:43	MA14023-ICSAB2	3877	29610	6348	1307
19:48	MA14023-CCV15	4109	31168	6522	1459
19:52	MA14023-CCB15	4229	31240	6626	1549

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	60-125 %
Istd#2	Yttrium (3600)	60-125 %
Istd#3	Yttrium (3710)	60-125 %
Istd#4	Indium	60-125 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA14023 Units: ug/l

Time:			08:36		09:11		10:09		11:03	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1	-0.40	<6.0	0.30	<6.0	0.0	<6.0	-0.10	<6.0
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	4.0	.2	anr							
Cadmium	5.0	.2	anr							
Calcium	1000	50	anr							
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.90	<25	1.8	<25	2.2	<25	2.5	<25
Iron	300	17	anr							
Lead	5.0	1	0.40	<5.0	-0.20	<5.0	-0.40	<5.0	-0.60	<5.0
Magnesium	5000	35	anr							
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200	anr							
Selenium	10	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500	anr							
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	0.10	<20	1.6	<20	1.7	<20	1.7	<20

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA14023 Units: ug/l

Time: / Sample ID:			11:56 CCB4		12:14 CCB5		13:22 CCB6		14:16 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1	-0.70	<6.0	-0.20	<6.0	0.20	<6.0	0.10	<6.0
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	4.0	.2	anr							
Cadmium	5.0	.2	anr							
Calcium	1000	50	anr							
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	2.4	<25	2.4	<25	0.40	<25	0.20	<25
Iron	300	17	anr							
Lead	5.0	1	-0.70	<5.0	-0.60	<5.0	-0.20	<5.0	0.0	<5.0
Magnesium	5000	35	anr							
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200	anr							
Selenium	10	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500	anr							
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	0.0	<20	0.10	<20	0.10	<20	0.20	<20

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA14023 Units: ug/l

Time: / Sample ID:			15:09 CCB8		16:03 CCB9		16:55 CCB10		17:49 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1	-0.10	<6.0	0.20	<6.0	0.50	<6.0	0.10	<6.0
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	4.0	.2	anr							
Cadmium	5.0	.2	anr							
Calcium	1000	50	anr							
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.20	<25	-0.80	<25	-0.40	<25	0.20	<25
Iron	300	17	anr							
Lead	5.0	1	-0.70	<5.0	-0.20	<5.0	-0.50	<5.0	0.0	<5.0
Magnesium	5000	35	anr							
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200	anr							
Selenium	10	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500	anr							
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	0.0	<20	0.10	<20	0.10	<20	0.10	<20

(*) Outside of QC limits
(anr) Analyte not requested

SGS ACCUTEST FA43270

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: result < RL Run ID: MA14023 Units: ug/l

Time: / Sample ID:			18:33 CCB12		18:41 CCB13		19:34 CCB14		19:52 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	14	anr							
Antimony	6.0	1	0.20	<6.0	0.40	<6.0	0.50	<6.0	0.40	<6.0
Arsenic	10	1.3	anr							
Barium	200	1	anr							
Beryllium	4.0	.2	anr							
Cadmium	5.0	.2	anr							
Calcium	1000	50	anr							
Chromium	10	1	anr							
Cobalt	50	.2	anr							
Copper	25	1	0.50	<25	0.80	<25	0.50	<25	0.40	<25
Iron	300	17	anr							
Lead	5.0	1	-0.10	<5.0	-0.70	<5.0	-0.30	<5.0	-0.60	<5.0
Magnesium	5000	35	anr							
Manganese	15	.5	anr							
Molybdenum	50	.3	anr							
Nickel	40	.4	anr							
Potassium	10000	200	anr							
Selenium	10	2.4	anr							
Silver	10	.7	anr							
Sodium	10000	500	anr							
Strontium	10	.5								
Thallium	10	1.1	anr							
Tin	50	.9								
Titanium	10	.5								
Vanadium	50	.5	anr							
Zinc	20	3	0.0	<20	0.10	<20	0.10	<20	0.10	<20

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14023 Units: ug/l

Time:		08:19			09:03			10:04	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2000	100.0	2000	2030	101.5	2000	2060	103.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1970	98.5	2000	1940	97.0	2000	1920	96.0
Iron	anr								
Lead	2000	1980	99.0	2000	2000	100.0	2000	1990	99.5
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2020	101.0	2000	2090	104.5	2000	2100	105.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14023 Units: ug/l

Time:		10:58			11:52			12:10	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2090	104.5	2000	2120	106.0	2000	2130	106.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1910	95.5	2000	1950	97.5	2000	1950	97.5
Iron	anr								
Lead	2000	2010	100.5	2000	2040	102.0	2000	2040	102.0
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2160	108.0	2000	2190	109.5	2000	2180	109.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14023 Units: ug/l

Time:		13:07			13:15			14:12	
Sample ID:	ICV	ICV2		CCV	CCV6		CCV	CCV7	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2010	100.5	2000	2000	100.0	2000	2010	100.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1990	99.5	2000	1960	98.0	2000	1960	98.0
Iron	anr								
Lead	2000	1980	99.0	2000	1980	99.0	2000	1970	98.5
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2020	101.0	2000	2030	101.5	2000	2040	102.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14023 Units: ug/l

Time:		15:05			15:59			16:51	
Sample ID:	CCV	CCV8		CCV	CCV9		CCV	CCV10	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	1980	99.0	2000	1920	96.0	2000	1930	96.5
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	1940	97.0	2000	1920	96.0	2000	1950	97.5
Iron	anr								
Lead	2000	1970	98.5	2000	1920	96.0	2000	1940	97.0
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2010	100.5	2000	1940	97.0	2000	1950	97.5

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14023 Units: ug/l

Time:		17:44			18:28			18:37	
Sample ID:	CCV	CCV11		CCV	CCV12		CCV	CCV13	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	2000	2010	100.5	2000	2020	101.0	2000	2040	102.0
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	2000	2010	100.5	2000	2010	100.5	2000	2030	101.5
Iron	anr								
Lead	2000	2000	100.0	2000	2000	100.0	2000	2020	101.0
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	2000	2020	101.0	2000	2030	101.5	2000	2050	102.5

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: 90 to 110 % Recovery Run ID: MA14023 Units: ug/l

Time:		19:30			19:48	
Sample ID:	CCV	CCV14		CCV	CCV15	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	2000	2050	102.5	2000	2030	101.5
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	2000	2040	102.0	2000	2020	101.0
Iron	anr					
Lead	2000	2030	101.5	2000	2020	101.0
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Potassium	anr					
Selenium	anr					
Silver	anr					
Sodium	anr					
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium	anr					
Zinc	2000	2060	103.0	2000	2050	102.5

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: 95 to 105 % Recovery Run ID: MA14023 Units: ug/l

Time:		08:12	
Sample ID:	HSTD	HSTD1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	4000	4000	100.0
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	4000	4020	100.5
Iron	anr		
Lead	4000	4040	101.0
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Potassium	anr		
Selenium	anr		
Silver	anr		
Sodium	anr		
Strontium			
Thallium	anr		
Tin			
Titanium			
Vanadium	anr		
Zinc	4000	3980	99.5

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: CRI 70-130% CRIA 70-130% Run ID: MA14023 Units: ug/l

Time:			08:44		19:25	
Sample ID:	CRI	CRIA	CRIA1		CRIA2	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	400	200	anr			
Antimony	10	5.0	5.3	106.0	6.2	124.0
Arsenic	20	10	anr			
Barium	400	200	anr			
Beryllium	10	5.0	anr			
Cadmium	10	5.0	anr			
Calcium	2000	1000	anr			
Chromium	20	10	anr			
Cobalt	100	50	anr			
Copper	50	25	26.1	104.4	26.0	104.0
Iron	600	300	anr			
Lead	10	5.0	4.7	94.0	4.6	92.0
Magnesium	10000	5000	anr			
Manganese	30	15	anr			
Molybdenum	100	50	anr			
Nickel	80	40	anr			
Potassium	20000	10000	anr			
Selenium	20	10	anr			
Silver	20	10	anr			
Sodium	20000	10000	anr			
Strontium	20	10				
Thallium	20	10	anr			
Tin	100	50				
Titanium	20	10				
Vanadium	100	50	anr			
Zinc	40	20	21.8	109.0	21.6	108.0

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

File ID: SA042717M1.ICP Date Analyzed: 04/27/17 Methods: SW846 6010C
QC Limits: 80 to 120 % Recovery Run ID: MA14023 Units: ug/l

Time:			08:50		08:55		19:39		19:43	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	488000	97.6	486000	97.2	504000	100.8	498000	99.6
Antimony		1000	-2.0		1070	107.0	-0.40		1050	105.0
Arsenic		1000	-1.5		1120	112.0	-2.4		1100	110.0
Barium		500	0.40		490	98.0	0.80		506	101.2
Beryllium		500	0.0		490	98.0	0.0		492	98.4
Cadmium		1000	0.50		952	95.2	0.90		938	93.8
Calcium	500000	500000	476000	95.2	467000	93.4	478000	95.6	472000	94.4
Chromium		500	0.50		495	99.0	0.40		499	99.8
Cobalt		500	0.80		479	95.8	0.80		478	95.6
Copper		500	-0.40		538	107.6	-2.6		546	109.2
Iron	200000	200000	172000	86.0	171000	85.5	178000	89.0	173000	86.5
Lead		1000	0.10		981	98.1	-8.1		970	97.0
Magnesium	500000	500000	494000	98.8	492000	98.4	515000	103.0	514000	102.8
Manganese		500	0.50		500	100.0	0.50		491	98.2
Molybdenum		1000	1.0		1030	103.0	1.3		1030	103.0
Nickel		1000	-0.20		978	97.8	-0.30		957	95.7
Potassium			72.5		68.9		78.0		57.7	
Selenium		1000	0.0		1060	106.0	6.4		1040	104.0
Silver		1000	-0.10		960	96.0	-0.70		971	97.1
Sodium			166		189		172		164	
Strontium		1000	-0.30		1030	103.0	0.50		1050	105.0
Thallium		1000	0.0		1020	102.0	-1.5		1010	101.0
Tin		1000	5.1		993	99.3	2.8		999	99.9
Titanium		1000	-0.40		1040	104.0	-0.50		1040	104.0
Vanadium		500	-0.30		482	96.4	-0.20		476	95.2
Zinc		1000	1.9		955	95.5	1.4		924	92.4

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP32050
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/26/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.7	1.8		
Antimony	1.0	.05	.065	0.045	<1.0
Arsenic	0.50	.065	.1		
Barium	10	.05	.05		
Beryllium	0.25	.01	.025		
Cadmium	0.20	.01	.025		
Calcium	250	2.5	2.5		
Chromium	0.50	.05	.05		
Cobalt	2.5	.01	.025		
Copper	1.3	.05	.05	0.025	<1.3
Iron	15	.85	.85		
Lead	1.0	.05	.05	0.13	<1.0
Magnesium	250	1.8	1.8		
Manganese	0.75	.025	.025		
Molybdenum	2.5	.015	.025		
Nickel	2.0	.02	.025		
Potassium	500	10	10		
Selenium	1.0	.12	.12		
Silver	0.50	.035	.041		
Sodium	500	25	25		
Strontium	0.50	.025	.025		
Thallium	0.50	.055	.055		
Tin	2.5	.045	.045		
Titanium	0.50	.025	.025		
Vanadium	2.5	.025	.025		
Zinc	1.0	.15	.15	0.13	<1.0

Associated samples MP32050: FA43270-1, FA43270-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP32050
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:			04/26/17					04/26/17	
Metal	FA43252-5 Original	DUP	RPD	QC Limits	FA43252-5 Original	MS	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum	anr								
Antimony	0.0	0.0 (a)	NC	0-20	0.0	8.0 (a)	24.4	32.8N(c)	80-120
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	1.6	0.39	121.6(b)	0-20	1.6	11.1	12.2	77.8N(c)	80-120
Iron	anr								
Lead	1.8	1.7 (a)	5.7	0-20	1.8	26.8 (a)	24.4	102.4	80-120
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	5.4	7.5 (a)	32.6 (b)	0-20	5.4	34.0 (a)	24.4	117.1	80-120

Associated samples MP32050: FA43270-1, FA43270-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Elevated reporting limit(s) due to matrix interference.
(b) RPD acceptable due to low duplicate and sample concentrations.
(c) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP32050 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/26/17

Metal	FA43252-5 Original	MSD	Spikelot MPFLICP2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	0.0	10.7 (a)	27.2	39.3N(b)	28.9 (c)	20
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	1.6	12.1	13.6	77.2N(b)	8.6	20
Iron	anr					
Lead	1.8	29.9 (a)	27.2	103.3	10.9	20
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Potassium	anr					
Selenium	anr					
Silver	anr					
Sodium	anr					
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium	anr					
Zinc	5.4	37.4 (a)	27.2	117.6	9.5	20

Associated samples MP32050: FA43270-1, FA43270-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Elevated reporting limit(s) due to matrix interference.
(b) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.
(c) High RPD due to possible sample non-homogeneity or incomplete digestion.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP32050
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/26/17

Metal	BSP Result	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum	anr			
Antimony	25.4	25	101.6	80-120
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	13.2	12.5	105.6	80-120
Iron	anr			
Lead	25.2	25	100.8	80-120
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium	anr			
Zinc	25.8	25	103.2	80-120

Associated samples MP32050: FA43270-1, FA43270-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP32050
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 04/26/17

Metal	FA43252-5 Original	SDL 10:5	%DIF	QC Limits
Aluminum	anr			
Antimony	0.00	0.00	NC	0-10
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	35.7	9.40	73.7 (a)	0-10
Iron	anr			
Lead	38.0	0.00	100.0(a)	0-10
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium	anr			
Zinc	118	318	169.4(a)	0-10

Associated samples MP32050: FA43270-1, FA43270-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: FA43270
Account: ARCTXEL - Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

QC Batch ID: MP32050 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date: 04/26/17

Metal	Sample ml	Final ml	FA43252-5 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony	9.8	10			119.7	0.2	5	100	119.7	80-120
Arsenic										
Barium										
Beryllium										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper	9.8	10	35.7	34.986	96.1	0.2	5	100	61.1*(a)	80-120
Iron										
Lead	9.8	10	38	37.24	89.6	0.2	2.5	50	104.7	80-120
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc	9.8	10	118	115.64	416.5	0.2	12.5	250	120.3*(a	80-120

Associated samples MP32050: FA43270-1, FA43270-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested
(a) Spike recovery indicates matrix interference and/or outside control limits due to high level in sample relative to spike amount.

Instrument Detection Limits

Job Number: FA43270
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Instrument ID: SSTRACE1 **Effective Date:** 01/27/15

Analyte	IDL ug/l
Aluminum	14
Antimony	1
Arsenic	1.3
Barium	1
Beryllium	.2
Cadmium	.2
Calcium	50
Chromium	1
Cobalt	.2
Copper	1
Iron	17
Lead	1
Magnesium	35
Manganese	.5
Molybdenum	.3
Nickel	.4
Potassium	200
Selenium	2.4
Silicon	5
Silver	.7
Sodium	500
Strontium	.5
Sulfur	5
Thallium	1.1
Tin	.9
Titanium	.5
Vanadium	.5
Zinc	3

The above applies to the following instrument runs:
MA14023

Instrument Detection Limits

Job Number: FA43270
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Instrument ID: SSTRACE2 **Effective Date:** 01/27/15

Analyte	IDL ug/l
Aluminum	14
Antimony	1
Arsenic	1.3
Barium	1
Beryllium	.2
Cadmium	.2
Calcium	50
Chromium	1
Cobalt	.2
Copper	1
Iron	17
Lead	1
Magnesium	35
Manganese	.5
Molybdenum	.3
Nickel	.4
Potassium	200
Selenium	2.4
Silicon	5
Silver	.7
Sodium	500
Strontium	.5
Sulfur	5
Thallium	1.1
Tin	.9
Titanium	.5
Vanadium	.5
Zinc	3

The above applies to the following instrument runs:
MA14018

Instrument Linear Ranges

Job Number: FA43270
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Instrument ID: SSTRACE1 **Effective Date:** 08/13/13

Analyte	Linear Range ug/l
Aluminum	500000
Antimony	10000
Arsenic	10000
Barium	10000
Beryllium	10000
Cadmium	10000
Calcium	500000
Chromium	10000
Cobalt	10000
Copper	10000
Iron	500000
Lead	10000
Magnesium	500000
Manganese	10000
Molybdenum	10000
Nickel	10000
Potassium	80000
Selenium	10000
Silver	1000
Sodium	80000
Strontium	10000
Sulfur	10000
Thallium	10000
Tin	10000
Titanium	10000
Vanadium	10000
Zinc	10000

The above applies to the following instrument runs:
MA14023

Instrument Linear Ranges

Job Number: FA43270
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Instrument ID: SSTRACE2 **Effective Date:** 10/22/10

Analyte	Linear Range ug/l
Aluminum	500000
Antimony	10000
Arsenic	10000
Barium	10000
Beryllium	10000
Cadmium	10000
Calcium	500000
Chromium	10000
Cobalt	10000
Copper	10000
Iron	500000
Lead	10000
Magnesium	500000
Manganese	10000
Molybdenum	10000
Nickel	10000
Potassium	80000
Selenium	10000
Silver	1000
Sodium	80000
Strontium	10000
Thallium	10000
Tin	10000
Titanium	10000
Vanadium	10000
Zinc	10000

The above applies to the following instrument runs:
MA14018

Metals Analysis

Raw Data

Zoom In ▶ Zoom Out

Sample Name: Blank Acquired: 4/26/2017 7:56:23 Type: Cal
Method: 60102007_041712(v674) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0003	-.0035	-.0006	.0202	.0001	.0048	-.0001	.0001	.0001
Stddev	.0001	.0014	.0001	.0005	.0011	.0006	.0002	.0003	.0001
%RSD	22.73	38.46	21.08	2.518	716.4	13.08	275.6	275.4	64.61
#1	.0004	-.0027	-.0005	.0204	.0008	.0050	-.0001	-.0002	.0001
#2	.0002	-.0051	-.0008	.0196	-.0011	.0052	.0001	.0001	.0000
#3	.0003	-.0028	-.0006	.0206	.0008	.0040	-.0003	.0004	.0002

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0037	.0002	.0098	-.0001	.0002	.0005	-.0022	-.0008	.0015
Stddev	.0001	.0002	.0031	.0002	.0001	.0001	.0016	.0003	.0006
%RSD	2.676	127.8	31.25	213.2	44.81	20.74	71.48	33.57	38.26
#1	.0038	.0003	.0063	-.0004	.0001	.0006	-.0030	-.0005	.0021
#2	.0038	-.0001	.0115	.0001	.0002	.0005	-.0004	-.0011	.0015
#3	.0036	.0003	.0117	-.0001	.0002	.0004	-.0032	-.0009	.0009

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0001	-.0011	.0061	.0004	-.0006	.0015	-.0044	-.0002	.0022
Stddev	.0001	.0001	.0002	.0001	.0020	.0001	.0007	.0002	.0001
%RSD	131.3	8.614	2.512	27.46	331.3	9.226	14.78	80.17	3.820
#1	.0002	-.0011	.0062	.0003	-.0021	.0014	-.0050	-.0004	.0022
#2	.0002	-.0012	.0062	.0003	-.0014	.0015	-.0046	-.0003	.0022
#3	.0000	-.0010	.0059	.0005	.0016	.0017	-.0037	.0000	.0023

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2113.6	5847.7	41490.	4252.1
Stddev	3.5	7.8	248.	50.8
%RSD	.16340	.13403	.59656	1.1957
#1	2116.8	5846.0	41684.	4308.6
#2	2110.0	5840.9	41211.	4210.1
#3	2114.1	5856.3	41574.	4237.6

◀ Zoom In ▶ Zoom Out

Sample Name: LowStd Acquired: 4/26/2017 8:00:29 Type: Cal
Method: 60102007_041712(v674) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0316	1.731	.1029	5.264	3.981	2.668	2.451	1.222	.2424	.3675
Stddev	.0002	.002	.0001	.003	.003	.005	.002	.001	.0001	.0009
%RSD	.5490	.1184	.0716	.0534	.0848	.1855	.0719	.1018	.0571	.2424
#1	.0314	1.729	.1029	5.261	3.981	2.663	2.450	1.221	.2423	.3679
#2	.0315	1.733	.1030	5.267	3.984	2.669	2.451	1.221	.2424	.3681
#3	.0318	1.732	.1029	5.263	3.978	2.673	2.453	1.223	.2425	.3665

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.607	1.591	.2599	1.337	.5365	4.955	.7643	.6783	.1228	.0724
Stddev	.003	.004	.0016	.001	.0004	.004	.0010	.0016	.0002	.0001
%RSD	.1577	.2426	.6336	.0467	.0742	.0910	.1309	.2378	.1586	.1119
#1	1.605	1.587	.2584	1.337	.5360	4.951	.7653	.6790	.1230	.0723
#2	1.606	1.593	.2617	1.338	.5366	4.960	.7641	.6765	.1226	.0725
#3	1.610	1.594	.2595	1.337	.5368	4.953	.7634	.6795	.1227	.0723

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.2294	.2624	7.944	.8382	.2911	.3452	1.507
Stddev	.0003	.0002	.004	.0017	.0010	.0007	.001
%RSD	.1228	.0895	.0488	.2014	.3424	.2132	.0444
#1	.2294	.2626	7.946	.8399	.2922	.3450	1.507
#2	.2291	.2622	7.946	.8365	.2904	.3461	1.507
#3	.2297	.2624	7.940	.8381	.2907	.3447	1.506

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1996.0	5782.8	40941.	4242.7
Stddev	2.2	8.1	123.	29.3
%RSD	.10844	.13966	.29948	.69177
#1	1995.8	5792.1	41073.	4275.9
#2	1998.2	5778.6	40919.	4232.1
#3	1993.9	5777.6	40830.	4220.1

◀ Zoom In ▶ Zoom Out

Sample Name: MidStd Acquired: 4/26/2017 8:03:58 Type: Cal
Method: 60102007_041712(v674) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1216	6.372	.4050	20.20	15.24	9.712	9.330	4.620	.9091	1.381
Stddev	.0004	.012	.0005	.02	.01	.004	.009	.004	.0006	.003
%RSD	.3369	.1895	.1200	.1132	.0974	.0402	.0970	.0818	.0655	.1921
#1	.1219	6.383	.4046	20.19	15.24	9.716	9.321	4.617	.9088	1.382
#2	.1211	6.359	.4056	20.18	15.22	9.711	9.328	4.620	.9098	1.378
#3	.1216	6.373	.4050	20.22	15.25	9.709	9.339	4.624	.9088	1.383

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	5.686	5.911	.9546	5.010	2.008	18.27	2.887	2.676	.4776	.2857
Stddev	.007	.011	.0009	.008	.002	.02	.002	.006	.0005	.0002
%RSD	.1295	.1791	.0939	.1576	.1133	.1278	.0525	.2225	.1123	.0547
#1	5.691	5.922	.9551	5.014	2.006	18.29	2.886	2.683	.4771	.2856
#2	5.677	5.901	.9535	5.016	2.011	18.24	2.887	2.673	.4782	.2858
#3	5.689	5.911	.9550	5.001	2.008	18.26	2.889	2.673	.4776	.2858

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.023	.9972	31.17	3.287	1.151	1.326	5.712
Stddev	.001	.0023	.05	.002	.003	.002	.005
%RSD	.0937	.2306	.1457	.0702	.2705	.1296	.0934
#1	1.022	.9955	31.20	3.290	1.154	1.324	5.708
#2	1.024	.9963	31.11	3.285	1.153	1.328	5.709
#3	1.024	.9998	31.19	3.287	1.148	1.326	5.718

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1822.2	5580.9	39854.	4191.4
Stddev	5.4	9.5	97.	17.1
%RSD	.29497	.17025	.24360	.40772
#1	1817.0	5580.7	39955.	4172.2
#2	1827.7	5590.5	39762.	4205.0
#3	1822.0	5571.5	39847.	4196.9

◀ Zoom In ▶ Zoom Out

Sample Name: HighStd Acquired: 4/26/2017 8:07:09 Type: Cal
Method: 60102007_041712(v674) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.2519	12.83	.8266	40.55	29.85	19.30	18.48	9.203	1.839	2.825
Stddev	.0006	.03	.0016	.10	.02	.02	.02	.004	.006	.006
%RSD	.2246	.1963	.1971	.2510	.0807	.0798	.1006	.0388	.3019	.2296
#1	.2516	12.82	.8260	40.55	29.83	19.29	18.46	9.199	1.836	2.831
#2	.2515	12.86	.8254	40.64	29.84	19.32	18.50	9.205	1.835	2.826
#3	.2525	12.82	.8285	40.44	29.88	19.30	18.47	9.205	1.845	2.818

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	11.02	11.88	1.898	9.925	4.104	36.34	5.762	5.478	.9714	.5793
Stddev	.02	.01	.005	.087	.001	.06	.004	.005	.0007	.0016
%RSD	.1415	.1156	.2730	.8768	.0322	.1765	.0771	.0943	.0672	.2837
#1	11.02	11.86	1.898	9.937	4.104	36.40	5.758	5.475	.9720	.5798
#2	11.03	11.89	1.903	9.833	4.103	36.27	5.764	5.484	.9707	.5774
#3	11.00	11.89	1.893	10.01	4.106	36.35	5.766	5.474	.9713	.5806

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.303	2.006	61.68	6.533	2.319	2.704	11.32
Stddev	.003	.003	.04	.059	.004	.007	.02
%RSD	.1246	.1350	.0624	.8967	.1961	.2793	.1658
#1	2.302	2.003	61.63	6.474	2.314	2.700	11.31
#2	2.302	2.006	61.69	6.535	2.323	2.698	11.35
#3	2.307	2.008	61.70	6.591	2.320	2.712	11.31

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1682.3	5339.3	37917.	4216.1
Stddev	4.2	6.2	209.	27.9
%RSD	.25232	.11670	.55032	.66150
#1	1678.9	5333.6	37941.	4186.4
#2	1680.9	5338.5	38112.	4220.4
#3	1687.0	5345.9	37697.	4241.7

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: HSTD Acquired: 4/26/2017 8:11:18 Type: QC
Method: 60102007_041712(v674) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5072	79.53	4.003	3.998	3.936	79.11	3.964	3.968	4.005	4.022
Stddev	.0018	.24	.006	.012	.005	.21	.004	.002	.003	.004
%RSD	.3453	.2956	.1504	.3058	.1357	.2701	.0947	.0611	.0762	.1003
#1	.5081	79.80	4.009	4.012	3.941	79.31	3.967	3.971	4.005	4.025
#2	.5051	79.37	4.001	3.989	3.930	78.88	3.960	3.966	4.002	4.017
#3	.5082	79.42	3.998	3.992	3.937	79.12	3.964	3.968	4.008	4.023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	78.17	79.36	79.28	4.004	4.008	78.69	3.964	4.026	4.004	3.995
Stddev	.19	.15	.26	.022	.002	.05	.003	.013	.009	.011
%RSD	.2414	.1891	.3303	.5567	.0532	.0606	.0863	.3170	.2181	.2728
#1	78.30	79.52	79.32	4.024	4.010	78.67	3.968	4.015	4.009	4.005
#2	77.96	79.32	79.00	3.980	4.006	78.74	3.963	4.040	4.009	3.995
#3	78.27	79.23	79.52	4.009	4.008	78.65	3.961	4.022	3.993	3.983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.213	3.972	3.969	4.041	3.997	4.023	3.960
Stddev	.004	.002	.003	.018	.014	.002	.002
%RSD	.1022	.0511	.0761	.4431	.3516	.0386	.0396
#1	4.218	3.975	3.971	4.032	3.992	4.021	3.961
#2	4.211	3.971	3.971	4.030	4.013	4.022	3.958
#3	4.210	3.971	3.965	4.062	3.986	4.024	3.960
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: HSTD Acquired: 4/26/2017 8:11:18 Type: QC
Method: 60102007_041712(v674) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1685.6	5352.8	37792.	4202.8
Stddev	5.0	6.7	84.	26.4
%RSD	.29924	.12564	.22161	.62810
#1	1690.7	5355.1	37752.	4193.5
#2	1680.6	5358.0	37888.	4232.6
#3	1685.5	5345.2	37736.	4182.3

Zoom In Zoom Out

Sample Name: ICV Acquired: 4/26/2017 8:21:25 Type: QC
Method: 60102007_041712(v674) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2628	40.27	2.069	2.035	2.035	41.15	2.044	2.048	2.049	2.025
Stddev	.0003	.09	.007	.007	.006	.08	.002	.002	.002	.003
%RSD	.1041	.2283	.3359	.3653	.2831	.2001	.0762	.0870	.0851	.1690
#1	.2628	40.16	2.065	2.031	2.029	41.05	2.043	2.047	2.050	2.027
#2	.2625	40.31	2.066	2.044	2.036	41.19	2.043	2.048	2.049	2.026
#3	.2630	40.33	2.077	2.031	2.041	41.20	2.046	2.050	2.047	2.021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.10	41.58	41.76	2.060	2.081	40.12	2.071	1.993	2.059	2.064
Stddev	.05	.14	.23	.005	.004	.10	.004	.003	.004	.002
%RSD	.1343	.3331	.5509	.2322	.2118	.2378	.2010	.1559	.2200	.1142
#1	40.06	41.44	41.66	2.065	2.078	40.01	2.066	1.989	2.055	2.067
#2	40.16	41.59	41.60	2.060	2.078	40.18	2.070	1.995	2.057	2.062
#3	40.09	41.72	42.03	2.056	2.086	40.18	2.075	1.994	2.064	2.064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0811	2.131	1.989	2.047	2.083	1.973	2.050
Stddev	.0015	.006	.006	.003	.003	.005	.002
%RSD	1.903	.2662	.2826	.1564	.1269	.2609	.0999
#1	.0802	2.126	1.983	2.049	2.081	1.972	2.048
#2	.0801	2.130	1.994	2.048	2.086	1.978	2.049
#3	.0829	2.137	1.991	2.043	2.082	1.968	2.052
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: ICV Acquired: 4/26/2017 8:21:25 Type: QC
Method: 60102007_041712(v674) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1806.7	5455.3	39419.	4268.9
Stddev	1.4	7.3	123.	26.1
%RSD	.07809	.13347	.31213	.61055
#1	1807.8	5461.3	39294.	4275.3
#2	1807.1	5457.4	39422.	4291.2
#3	1805.1	5447.2	39540.	4240.3

Zoom In Zoom Out

Sample Name: ICB Acquired: 4/26/2017 8:35:41 Type: QC
Method: 60102007_041712(v674) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0079	-.0006	.0000	-.0001	-.0073	-.0001	-.0001	-.0001	.0003
Stddev	.0001	.0102	.0006	.000	.0000	.0024	.0000	.0001	.0002	.0003
%RSD	13.63	128.5	97.78	284.4	31.49	32.91	47.92	80.45	166.3	105.4
#1	.0003	-.0138	-.0013	-.0001	-.0001	-.0061	.0000	.0000	.0001	.0002
#2	.0004	.0038	-.0001	.0001	-.0002	-.0057	-.0001	-.0001	-.0002	.0001
#3	.0004	-.0138	-.0005	.0000	-.0001	-.0101	-.0001	-.0002	-.0003	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024	-.0018	-.0042	-.0001	-.0001	-.0041	-.0001	.0003	.0004	-.0008
Stddev	.0033	.0159	.0307	.0000	.0000	.0046	.0001	.0008	.0002	.0005
%RSD	133.0	902.6	728.5	44.08	42.14	110.4	61.61	250.7	58.82	59.23
#1	.0028	.0122	-.0214	.0000	-.0001	-.0049	-.0001	.0002	.0002	-.0009
#2	-.0010	-.0190	.0312	-.0001	-.0002	.0008	-.0001	-.0004	.0004	-.0013
#3	.0055	.0015	-.0224	-.0001	-.0001	-.0083	-.0002	.0012	.0007	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0002	-.0001	.0000	.0008	.0000	.0001
Stddev	.0002	.0001	.0001	.000	.0011	.000	.0001
%RSD	42.54	79.41	248.1	671.1	133.3	480.1	64.55
#1	.0004	-.0001	-.0002	-.0001	.0010	.0000	.0001
#2	.0003	-.0003	.0000	.0000	.0019	.0001	.0001
#3	.0006	-.0001	.0000	.0000	-.0003	-.0002	.0000
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: ICB Acquired: 4/26/2017 8:35:41 Type: QC
Method: 60102007_041712(v674) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2107.7	5719.3	41652.	4332.1
Stddev	4.2	15.0	130.	10.2
%RSD	.19823	.26219	.31316	.23608
#1	2111.3	5733.2	41736.	4320.3
#2	2108.7	5721.2	41501.	4338.9
#3	2103.1	5703.4	41717.	4337.0

Zoom In Zoom Out

Sample Name: CRIA Acquired: 4/26/2017 8:39:35 Type: QC
Method: 60102007_041712(v674) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0089	.2034	.0106	.2064	.0050	1.067	.0053	.0533	.0107	.0268
Stddev	.0004	.0083	.0004	.0006	.0000	.005	.0000	.0003	.0002	.0001
%RSD	4.344	4.097	3.374	.2979	.7833	.4574	.6635	.5339	1.696	.4453
#1	.0084	.2037	.0110	.2058	.0050	1.066	.0052	.0531	.0107	.0270
#2	.0091	.2115	.0104	.2063	.0050	1.062	.0053	.0531	.0108	.0269
#3	.0091	.1948	.0104	.2071	.0050	1.072	.0053	.0536	.0105	.0267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3166	10.16	5.227	.0159	.0534	10.16	.0434	.0047	.0056	.0097
Stddev	.0032	.02	.025	.0000	.0004	.02	.0000	.0004	.0014	.0008
%RSD	1.017	.1627	.4749	.1183	.7090	.2147	.0787	8.543	24.23	8.227
#1	.3163	10.14	5.214	.0159	.0532	10.15	.0433	.0043	.0065	.0093
#2	.3135	10.17	5.212	.0159	.0533	10.15	.0434	.0049	.0040	.0106
#3	.3200	10.17	5.256	.0159	.0539	10.19	.0434	.0050	.0063	.0091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0227	.0556	.0101	.0103	.0101	.0500	.0213
Stddev	.0005	.0001	.0001	.0001	.0006	.0001	.0001
%RSD	2.395	.2449	1.355	1.368	6.387	.1256	.5464
#1	.0220	.0557	.0101	.0104	.0096	.0501	.0211
#2	.0231	.0555	.0099	.0102	.0109	.0501	.0213
#3	.0229	.0556	.0102	.0104	.0100	.0500	.0214
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CRIA Acquired: 4/26/2017 8:39:35 Type: QC
Method: 60102007_041712(v674) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2022.8	5651.5	41028.	4276.4
Stddev	7.3	3.9	68.	40.1
%RSD	.35873	.06918	.16682	.93775
#1	2026.4	5654.0	41011.	4289.6
#2	2027.6	5653.5	41104.	4308.3
#3	2014.5	5647.0	40971.	4231.4

Zoom In Zoom Out

Sample Name: ICSA Acquired: 4/26/2017 8:45:46 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	501.3	.0009	-.0001	.0000	484.0	.0001	.0003	.0007
Stddev	.0005	10.0	.0005	.0000	.000	13.2	.0001	.0002	.0000
%RSD	54.79	1.987	59.10	31.92	126.6	2.720	108.4	66.68	4.534
#1	.0006	508.0	.0011	-.0001	-.0001	471.1	.0001	.0002	.0007
#2	.0014	505.9	.0003	-.0001	.0000	497.4	.0000	.0001	.0008
#3	.0006	489.8	.0014	-.0001	.0000	483.4	.0001	.0005	.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	175.6	.0548	502.7	.0001	.0008	.2164	.0000	.0003
Stddev	.0001	.4	.0105	1.5	.0000	.0002	.0117	.000	.0028
%RSD	10.88	.2306	19.19	.3043	13.45	28.90	5.399	491.9	872.3
#1	.0010	175.3	.0509	501.1	.0001	.0009	.2079	.0000	-.0016
#2	.0012	176.1	.0468	504.1	.0001	.0005	.2116	-.0003	-.0009
#3	.0012	175.5	.0667	503.1	.0001	.0009	.2298	.0002	.0035
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0012	-.0018	.0181	F.0087	-.0006	-.0002	.0004	-.0002	.0022
Stddev	.0004	.0041	.0001	.0023	.0011	.0001	.0020	.0004	.0001
%RSD	36.23	225.8	.5440	27.00	166.9	41.30	559.9	197.5	5.336
#1	-.0007	.0021	.0182	.0070	.0005	-.0003	-.0007	-.0006	.0023
#2	-.0013	-.0015	.0181	.0077	-.0017	-.0001	-.0009	.0002	.0021
#3	-.0015	-.0060	.0181	.0114	-.0007	-.0003	.0027	-.0002	.0023
Check ?	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Zoom In Zoom Out

Sample Name: ICSA Acquired: 4/26/2017 8:45:46 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1617.2	5112.4	36196.	4156.6
Stddev	4.0	2.6	145.	41.0
%RSD	.24881	.05158	.40000	.98648
#1	1614.0	5114.7	36036.	4200.3
#2	1615.9	5109.5	36235.	4118.9
#3	1621.8	5112.9	36318.	4150.8

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 4/26/2017 8:51:11 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9504	505.4	1.124	.5073	.4892	481.3	.9324	.4667	.4998	.5239
Stddev	.0015	2.0	.002	.0012	.0005	5.7	.0011	.0001	.0017	.0007
%RSD	.1595	.4053	.1980	.2308	.1018	1.190	.1153	.0154	.3500	.1377
#1	.9487	507.5	1.121	.5064	.4895	478.9	.9336	.4668	.5017	.5245
#2	.9516	505.1	1.125	.5086	.4886	477.1	.9319	.4666	.4994	.5242
#3	.9508	503.5	1.125	.5069	.4895	487.8	.9316	.4666	.4983	.5231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	177.5	.0823	501.3	.4923	1.015	.2581	.9493	.9435	1.057	1.049
Stddev	.7	.0116	1.8	.0005	.001	.0094	.0012	.0031	.002	.002
%RSD	.4139	14.07	.3640	.0977	.1123	3.662	.1260	.3288	.2249	.1415
#1	176.6	.0698	499.5	.4928	1.016	.2537	.9504	.9406	1.055	1.051
#2	177.7	.0844	501.3	.4923	1.015	.2516	.9480	.9431	1.060	1.050
#3	178.1	.0927	503.1	.4919	1.014	.2689	.9494	.9467	1.057	1.048
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0206	.9850	1.028	1.032	.9859	.4711	.9359
Stddev	.0011	.0026	.001	.003	.0053	.0006	.0012
%RSD	5.529	.2669	.1006	.2570	.5367	.1362	.1298
#1	.0219	.9856	1.026	1.032	.9860	.4716	.9369
#2	.0201	.9873	1.028	1.035	.9911	.4713	.9364
#3	.0197	.9822	1.029	1.030	.9806	.4704	.9346
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 4/26/2017 8:51:11 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1576.4	5075.4	35915.	4130.2
Stddev	1.9	5.8	85.	37.3
%RSD	.11882	.11460	.23594	.90244
#1	1577.3	5068.7	35856.	4170.2
#2	1577.7	5078.0	35877.	4123.8
#3	1574.3	5079.4	36012.	4096.5

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 8:58:28 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2460	39.72	1.996	2.010	1.993	40.01	2.015	2.010	1.992	1.968
Stddev	.0012	.01	.001	.002	.001	.08	.001	.002	.005	.006
%RSD	.4784	.0318	.0659	.1126	.0354	.1928	.0656	.0918	.2379	.3160
#1	.2473	39.73	1.996	2.009	1.993	40.05	2.015	2.010	1.994	1.974
#2	.2457	39.70	1.994	2.009	1.992	40.06	2.014	2.008	1.987	1.969
#3	.2450	39.72	1.997	2.013	1.992	39.92	2.016	2.012	1.996	1.961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.98	39.31	39.48	2.016	1.986	39.13	2.021	1.971	2.001	2.005
Stddev	.04	.04	.18	.005	.002	.02	.002	.003	.005	.002
%RSD	.1085	.1114	.4630	.2522	.0753	.0602	.1039	.1291	.2596	.0803
#1	39.93	39.36	39.57	2.022	1.985	39.12	2.024	1.969	2.007	2.005
#2	40.02	39.30	39.61	2.012	1.985	39.16	2.021	1.974	1.997	2.003
#3	40.00	39.27	39.28	2.015	1.987	39.12	2.019	1.970	2.000	2.006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.897	2.018	1.996	2.015	1.996	1.981	2.010
Stddev	.004	.004	.002	.007	.007	.003	.001
%RSD	.2397	.2185	.1122	.3512	.3373	.1696	.0643
#1	1.902	2.022	1.994	2.023	1.991	1.980	2.010
#2	1.893	2.013	1.996	2.009	2.004	1.978	2.009
#3	1.895	2.017	1.999	2.013	1.993	1.984	2.012
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 8:58:28 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1806.3	5501.3	39692.	4254.4
Stddev	4.6	3.8	119.	39.7
%RSD	.25740	.06892	.29957	.93366
#1	1810.3	5503.5	39664.	4227.9
#2	1801.2	5503.4	39823.	4235.3
#3	1807.3	5496.9	39590.	4300.1

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 9:07:35 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0083	-.0003	.0003	.0001	.0021	.0001	.0001	.0002	.0005
Stddev	.0002	.0061	.0006	.0002	.0001	.0029	.0000	.0001	.0002	.0002
%RSD	120.8	72.93	183.6	61.58	106.3	135.4	23.53	133.5	103.8	44.86
#1	.0000	-.0024	-.0003	.0004	.0000	-.0011	.0001	.0002	.0002	.0003
#2	.0003	-.0145	-.0009	.0005	.0001	.0031	.0001	.0000	.0003	.0007
#3	.0001	-.0081	.0003	.0001	.0000	.0044	.0001	.0001	.0000	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0121	.0138	-.0119	.0002	.0000	.0308	.0001	.0001	.0014	-.0003
Stddev	.0026	.0186	.0020	.0001	.000	.0029	.0002	.0002	.0011	.0005
%RSD	21.27	134.2	16.87	32.76	391.8	9.376	279.7	188.5	81.17	165.9
#1	.0096	.0170	-.0117	.0002	.0001	.0333	-.0001	-.0001	.0026	-.0001
#2	.0118	-.0061	-.0100	.0002	-.0001	.0277	.0000	.0003	.0004	.0000
#3	.0148	.0306	-.0140	.0001	.0000	.0314	.0002	.0002	.0011	-.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0001	.0002	.0001	.0008	.0002	.0000
Stddev	.0001	.0002	.0001	.0000	.0002	.0001	.0000
%RSD	151.6	344.1	51.34	11.94	20.17	69.66	582.8
#1	.0000	.0000	.0002	.0001	.0007	.0000	.0000
#2	.0001	-.0002	.0001	.0002	.0007	.0002	.0000
#3	.0002	.0001	.0003	.0001	.0010	.0002	.0000
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 9:07:35 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2103.6	5819.3	41037.	4225.2
Stddev	3.5	12.0	172.	24.3
%RSD	.16560	.20538	.41798	.57468
#1	2100.8	5811.1	40937.	4252.7
#2	2107.5	5833.0	40940.	4216.4
#3	2102.6	5813.9	41236.	4206.6

Zoom In Zoom Out

Sample Name: MP32034-MB1 Acquired: 4/26/2017 9:11:49 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0101	-.0008	.0000	-.0001	.0041	-.0001	-.0001	.0003	.0003
Stddev	.0002	.0175	.0008	.000	.0000	.0028	.0001	.0001	.0002	.0003
%RSD	91.27	172.9	99.91	380.4	23.48	67.94	53.40	60.04	56.01	97.28
#1	.0002	-.0095	.0000	.0001	-.0001	.0010	-.0001	-.0001	.0001	.0003
#2	.0000	-.0279	-.0016	-.0002	-.0001	.0049	-.0002	-.0001	.0003	.0007
#3	.0005	.0071	-.0008	.0000	-.0001	.0065	-.0001	-.0002	.0004	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	.0224	-.0047	-.0001	-.0002	.0249	-.0003	.0000	.0008	-.0016
Stddev	.0028	.0493	.0188	.0001	.0001	.0083	.0001	.0004	.0005	.0001
%RSD	62.42	220.5	398.7	94.74	82.44	33.44	56.33	927.3	68.62	7.716
#1	.0027	-.0219	-.0096	-.0001	-.0003	.0308	-.0004	.0004	.0005	-.0016
#2	.0077	.0134	.0161	.0000	-.0001	.0154	-.0003	.0002	.0014	-.0015
#3	.0030	.0756	-.0207	-.0001	.0000	.0286	-.0001	-.0004	.0005	-.0017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	-.0003	.0000	.0004	-.0007	.0001	.0002
Stddev	.0002	.0004	.000	.0009	.0003	.0001	.0001
%RSD	60.10	126.2	110.5	245.6	44.73	135.8	27.65
#1	-.0005	-.0004	.0000	-.0002	-.0004	.0002	.0001
#2	-.0004	.0001	-.0001	.0014	-.0007	.0000	.0002
#3	-.0001	-.0005	.0000	-.0001	-.0010	.0000	.0002
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: MP32034-MB1 Acquired: 4/26/2017 9:11:49 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2107.2	5769.2	42029.	4292.0
Stddev	4.9	10.8	151.	44.8
%RSD	.23456	.18638	.35823	1.0447
#1	2112.6	5780.0	41938.	4301.8
#2	2102.9	5758.5	42203.	4243.0
#3	2106.1	5769.1	41946.	4331.1

Zoom In Zoom Out

Sample Name: MP32034-MB2A Acquired: 4/26/2017 9:16:04 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0030	-.0015	.0000	-.0001	.0389	-.0001	-.0001	.0004
Stddev	.0001	.0102	.0006	.000	.0000	.0029	.0000	.0001	.0002
%RSD	17.49	334.8	38.34	473.7	17.22	7.544	26.89	113.8	48.39
#1	.0003	-.0065	-.0008	.0000	-.0001	.0402	-.0001	-.0001	.0002
#2	.0004	.0084	-.0018	-.0001	-.0001	.0409	-.0001	.0000	.0006
#3	.0003	-.0110	-.0019	.0000	-.0001	.0355	-.0001	-.0001	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0048	-.0019	.0178	.0000	-.0003	.0999	-.0002	.0004
Stddev	.0001	.0019	.0273	.0003	.000	.0000	.0076	.0002	.0004
%RSD	29.76	40.41	1446.	1.767	175.9	9.344	7.634	106.1	102.7
#1	.0004	.0069	-.0137	.0176	.0000	-.0003	.1046	-.0001	.0008
#2	.0002	.0032	.0293	.0181	.0000	-.0003	.1040	-.0001	.0004
#3	.0003	.0043	-.0212	.0176	-.0001	-.0003	.0911	-.0004	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	-.0009	.0024	-.0002	.0014	.0001	-.0010	.0001	F.0121
Stddev	.0005	.0014	.0001	.0002	.0001	.0000	.0009	.0001	.0000
%RSD	87.44	163.3	4.003	140.1	3.868	37.37	88.83	75.48	.3246
#1	.0004	.0005	.0023	-.0002	.0015	.0001	.0000	.0003	.0121
#2	.0002	-.0023	.0023	.0001	.0014	.0001	-.0012	.0001	.0120
#3	.0012	-.0008	.0025	-.0004	.0015	.0001	-.0017	.0001	.0121
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit									.0100
Low Limit									-.0100

Zoom In Zoom Out

Sample Name: MP32034-MB2A Acquired: 4/26/2017 9:16:04 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2109.4	5747.0	42296.	4337.7
Stddev	2.6	6.5	68.	33.0
%RSD	.12361	.11330	.16030	.76180
#1	2111.9	5740.4	42328.	4375.9
#2	2109.6	5747.2	42219.	4319.1
#3	2106.7	5753.4	42342.	4318.2

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: MP32034-B1 Acquired: 4/26/2017 9:20:17 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0467	26.89	1.992	2.052	.0510	25.38	.0498	.4977	.2010	.2515
Stddev	.0003	.05	.003	.004	.0001	.07	.0001	.0002	.0011	.0004
%RSD	.5978	.1971	.1452	.1742	.1137	.2634	.1751	.0323	.5276	.1421
#1	.0466	26.84	1.995	2.053	.0510	25.33	.0499	.4977	.2000	.2519
#2	.0465	26.94	1.992	2.055	.0511	25.45	.0498	.4977	.2008	.2512
#3	.0470	26.91	1.989	2.048	.0510	25.35	.0498	.4979	.2021	.2513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.85	24.51	24.38	.5071	.5137	24.18	.5096	.4710	.5049	1.983
Stddev	.03	.10	.12	.0015	.0001	.02	.0004	.0017	.0004	.004
%RSD	.1328	.4034	.4916	.3051	.0204	.0834	.0761	.3660	.0835	.1834
#1	25.83	24.40	24.28	.5056	.5138	24.17	.5096	.4716	.5044	1.984
#2	25.89	24.58	24.51	.5070	.5136	24.21	.5100	.4691	.5049	1.986
#3	25.83	24.55	24.33	.5087	.5138	24.17	.5092	.4724	.5053	1.979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0015	.5166	.4917	.4983	1.940	.4838	.4955
Stddev	.0002	.0008	.0016	.0009	.003	.0018	.0010
%RSD	14.45	.1625	.3280	.1815	.1645	.3711	.2061
#1	-.0013	.5174	.4903	.4982	1.937	.4842	.4955
#2	-.0015	.5157	.4912	.4974	1.941	.4818	.4945
#3	-.0017	.5166	.4935	.4992	1.943	.4854	.4966
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP32034-B1 Acquired: 4/26/2017 9:20:17 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1922.1	5610.0	40853.	4343.8
Stddev	1.9	5.4	262.	50.5
%RSD	.09837	.09659	.64073	1.1617
#1	1922.3	5604.6	41042.	4378.5
#2	1923.9	5615.4	40962.	4285.9
#3	1920.1	5610.1	40554.	4367.0

Zoom In Zoom Out

Sample Name: FA43249-1 Acquired: 4/26/2017 9:24:15 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 200.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0657	1.401	-.1491	.0939	-.0113	1018.	-.0212	-.0007	-.0326
Stddev	.0525	3.003	.1368	.0161	.0248	11.	.0052	.0134	.0402
%RSD	79.82	214.3	91.71	17.10	219.6	1.036	24.65	1876.	123.2
#1	.1020	1.842	-.3069	.0763	.0171	1013.	-.0152	-.0158	-.0635
#2	.0896	4.159	-.0656	.0975	-.0226	1030.	-.0249	.0101	-.0473
#3	.0056	-1.798	-.0748	.1078	-.0284	1011.	-.0233	.0035	.0129

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0948	2.050	43.24	259.6	.1563	.0621	14680.	-.0396	.0324
Stddev	.0722	.644	2.62	4.5	.0023	.0174	169.	.0042	.1069
%RSD	76.18	31.44	6.057	1.748	1.458	28.07	1.154	10.48	330.0
#1	.0507	2.738	40.37	264.4	.1590	.0432	14590.	-.0348	.1556
#2	.0555	1.460	43.83	255.5	.1548	.0656	14870.	-.0422	-.0229
#3	.1782	1.951	45.50	258.9	.1552	.0775	14560.	-.0419	-.0355

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0661	.0272	2.299	-.0795	17.44	.0913	.1703	.0358	.7309
Stddev	.1496	.1731	.075	.0164	.22	.0077	.2056	.0547	.0075
%RSD	226.5	635.9	3.263	20.57	1.242	8.477	120.7	153.0	1.027
#1	-.0219	.0779	2.217	-.0984	17.26	.0961	.1643	.0209	.7395
#2	-.0188	.1693	2.319	-.0688	17.68	.0824	.3787	.0964	.7255
#3	.2388	-.1655	2.363	-.0714	17.38	.0954	-.0323	-.0100	.7277

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1967.4	5624.8	39999.	4324.2
Stddev	2.0	28.3	177.	73.5
%RSD	.09922	.50370	.44311	1.6989
#1	1969.3	5657.1	40174.	4330.2
#2	1967.4	5604.0	39820.	4247.9
#3	1965.4	5613.5	40004.	4394.5

Zoom In Zoom Out

Sample Name: MP32034-D1 Acquired: 4/26/2017 9:28:29 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 200.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.1126	-2.719	-.0171	.0502	-.0071	1052.	-.0143	-.0061	.0095
Stddev	.0683	1.305	.0836	.0046	.0235	1.	.0103	.0097	.0478
%RSD	60.67	47.98	489.2	9.114	331.0	.1409	71.56	158.1	504.1
#1	.0445	-3.534	-.0929	.0542	.0084	1054.	-.0071	-.0158	-.0332
#2	.1811	-3.409	-.0310	.0512	-.0342	1051.	-.0099	-.0062	.0004
#3	.1121	-1.214	.0726	.0452	.0044	1052.	-.0261	.0036	.0612

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.1146	.5900	44.60	266.6	.1500	.0343	15110.	-.0267	.0512
Stddev	.0124	.1390	.98	4.4	.0049	.0026	44.	.0205	.1603
%RSD	10.84	23.56	2.198	1.651	3.246	7.583	.2895	76.72	312.9
#1	.1142	.6856	43.99	262.0	.1471	.0339	15160.	-.0128	.0754
#2	.1024	.4305	45.73	267.1	.1473	.0372	15080.	-.0171	-.1198
#3	.1273	.6539	44.08	270.8	.1556	.0320	15100.	-.0503	.1981

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0228	-.0726	2.383	-.0355	18.03	.0568	-.0523	.0196	1.009
Stddev	.3777	.2578	.028	.0239	.07	.0070	.0193	.0300	.004
%RSD	1654.	355.1	1.164	67.50	.4041	12.32	36.94	153.3	.3947
#1	-.0244	-.2386	2.414	-.0615	18.02	.0603	-.0744	.0509	1.005
#2	-.3997	.2244	2.375	-.0303	17.96	.0487	-.0383	.0168	1.010
#3	.3556	-.2035	2.360	-.0145	18.10	.0613	-.0444	-.0090	1.012

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1948.2	5554.7	40062.	4277.8
Stddev	1.2	12.8	30.	49.9
%RSD	.06252	.23078	.07482	1.1671
#1	1947.0	5565.8	40033.	4220.8
#2	1948.1	5557.8	40093.	4299.1
#3	1949.4	5540.7	40059.	4313.6

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: MP32034-S1 Acquired: 4/26/2017 9:32:43 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 200.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.1149	27.53	2.198	2.157	.0400	1068.	.0377	.5419	.2172
Stddev	.0064	1.09	.204	.118	.0098	2.	.0054	.0165	.0224
%RSD	5.592	3.972	9.274	5.491	24.59	.2326	14.24	3.050	10.29
#1	.1130	28.00	2.299	2.151	.0358	1065.	.0335	.5536	.2033
#2	.1220	28.31	1.963	2.279	.0512	1069.	.0438	.5230	.2053
#3	.1096	26.28	2.331	2.042	.0329	1070.	.0358	.5490	.2430

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.3847	28.68	67.53	289.6	.7011	.5714	14660.	.5215	.5011
Stddev	.0527	.45	4.99	6.1	.0174	.0130	38.	.0833	.0201
%RSD	13.69	1.574	7.391	2.118	2.488	2.271	.2579	15.97	4.015
#1	.4183	29.18	70.57	292.0	.7122	.5651	14690.	.5465	.4794
#2	.3240	28.54	70.25	282.7	.6810	.5863	14680.	.5894	.5049
#3	.4118	28.31	61.77	294.3	.7101	.5628	14620.	.4286	.5191

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.5257	2.265	2.358	.4779	18.08	.6057	2.232	.4979	1.433
Stddev	.2209	.224	.028	.0157	.03	.0216	.194	.0509	.014
%RSD	42.01	9.879	1.169	3.282	.1492	3.558	8.677	10.22	.9422
#1	.5906	2.128	2.330	.4955	18.09	.5950	2.055	.5565	1.417
#2	.7068	2.143	2.358	.4729	18.04	.6306	2.439	.4724	1.441
#3	.2797	2.523	2.385	.4654	18.10	.5917	2.202	.4649	1.440

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1946.8	5506.2	40114.	4283.3
Stddev	3.4	6.8	123.	49.4
%RSD	.17420	.12335	.30692	1.1526
#1	1947.5	5513.1	39977.	4339.6
#2	1949.8	5505.9	40152.	4247.4
#3	1943.1	5499.5	40214.	4263.0

Zoom In Zoom Out

Sample Name: MP32034-S2 Acquired: 4/26/2017 9:36:57 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 200.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.1376	27.31	2.079	2.129	.0329	1061.	.0331	.5302	.2068
Stddev	.0980	1.68	.087	.024	.0139	2.	.0022	.0096	.0731
%RSD	71.23	6.152	4.182	1.121	42.08	.2134	6.617	1.810	35.34
#1	.1257	25.38	1.979	2.105	.0447	1063.	.0307	.5356	.1441
#2	.2409	28.12	2.121	2.132	.0364	1059.	.0336	.5192	.1892
#3	.0460	28.44	2.137	2.152	.0177	1062.	.0350	.5359	.2871

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.4085	27.79	69.28	286.7	.6723	.5538	14370.	.5384	.6175
Stddev	.0502	.77	1.94	5.1	.0094	.0197	39.	.0485	.1689
%RSD	12.29	2.784	2.800	1.782	1.405	3.566	.2745	9.007	27.35
#1	.4555	26.93	67.42	289.1	.6692	.5639	14400.	.5926	.7490
#2	.4143	28.42	71.29	280.8	.6829	.5664	14330.	.4992	.6766
#3	.3556	28.03	69.14	290.1	.6648	.5310	14400.	.5234	.4270

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.4616	2.386	2.355	.5161	17.78	.5617	2.023	.5543	1.347
Stddev	.1739	.155	.065	.0350	.04	.0192	.202	.0611	.004
%RSD	37.66	6.498	2.766	6.776	.2142	3.425	9.972	11.02	.3252
#1	.3671	2.503	2.412	.5469	17.82	.5411	2.205	.6208	1.346
#2	.3554	2.445	2.368	.5232	17.75	.5647	1.806	.5418	1.343
#3	.6622	2.210	2.284	.4781	17.76	.5792	2.059	.5005	1.352

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1951.1	5520.6	40056.	4294.4
Stddev	4.2	4.4	231.	43.6
%RSD	.21750	.07986	.57578	1.0143
#1	1946.2	5515.8	40280.	4319.0
#2	1953.4	5524.5	39819.	4320.1
#3	1953.7	5521.3	40068.	4244.1

Zoom In Zoom Out

Sample Name: MP32034-PS1 Acquired: 4/26/2017 9:41:11 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 200.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.1268	1.981	.1092	.3523	.0564	1029.	.0404	.0608	.0961
Stddev	.0251	1.255	.1396	.0314	.0062	2.	.0083	.0152	.0341
%RSD	19.81	63.39	127.8	8.922	11.06	.2408	20.49	24.98	35.46
#1	.1550	2.228	-.0477	.3436	.0493	1032.	.0366	.0782	.1213
#2	.1068	3.094	.2195	.3872	.0610	1028.	.0347	.0545	.1096
#3	.1186	.6199	.1558	.3262	.0590	1027.	.0499	.0498	.0573

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2680	3.842	54.36	262.0	.2037	.1332	14490.	.0964	.1214
Stddev	.0183	.610	3.98	2.6	.0074	.0422	27.	.0119	.1852
%RSD	6.820	15.88	7.329	.9786	3.633	31.67	.1848	12.37	152.5
#1	.2568	3.648	49.79	261.6	.1985	.1107	14510.	.0891	-.0805
#2	.2891	3.353	56.23	259.7	.2122	.1071	14490.	.0899	.1612
#3	.2581	4.526	57.07	264.8	.2005	.1819	14460.	.1101	.2835

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1401	.1534	2.809	.0102	17.35	.1751	.1696	.0623	1.413
Stddev	.0405	.0355	.066	.0336	.11	.0248	.0419	.0274	.011
%RSD	28.93	23.16	2.335	329.0	.6387	14.16	24.69	44.06	.8098
#1	.1228	.1340	2.749	-.0035	17.47	.1637	.2156	.0502	1.426
#2	.1111	.1317	2.879	.0485	17.26	.1581	.1338	.0936	1.406
#3	.1864	.1944	2.799	-.0143	17.32	.2036	.1592	.0429	1.407

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1946.1	5547.5	39980.	4244.3
Stddev	2.7	11.3	90.	23.2
%RSD	.14022	.20309	.22502	.54661
#1	1943.2	5536.0	39880.	4269.4
#2	1946.3	5548.2	40054.	4223.6
#3	1948.7	5558.5	40008.	4240.0

Zoom In Zoom Out

Sample Name: MP32034-SD1 Acquired: 4/26/2017 9:45:24 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1000.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.3210	-2.697	-.7482	.1128	-.1224	1181.	-.0923	.0934	-.1848
Stddev	.1554	12.60	.6483	.0917	.1189	8.	.0186	.0868	.4192
%RSD	48.42	467.3	86.65	81.26	97.14	.6588	20.10	93.01	226.9
#1	.4873	-17.24	-1.192	.1170	-.2422	1176.	-.0960	-.0067	.2786
#2	.2963	4.412	-.0042	.0191	-.1207	1176.	-.1087	.1492	-.2952
#3	.1794	4.743	-1.049	.2023	-.0044	1190.	-.0722	.1376	-.5377

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2344	.0098	76.97	304.1	.0919	-.3426	17220.	-.0334	.3661
Stddev	.0084	3.077	11.83	1.8	.0603	.0803	40.	.0995	.4797
%RSD	3.588	31470.	15.37	.6000	65.68	23.45	.2323	297.5	131.0
#1	.2267	2.617	64.60	305.7	.0546	-.3749	17240.	-.1107	-.0223
#2	.2331	-3.385	78.15	304.6	.0596	-.2511	17180.	-.0684	.9023
#3	.2434	.7969	88.17	302.1	.1615	-.4017	17250.	.0788	.2183

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.2681	-.5733	2.701	-.1895	20.15	-.1836	.2745	.0035	5.833
Stddev	.5253	1.473	.069	.2470	.27	.1105	.5911	.2552	.039
%RSD	195.9	256.9	2.539	130.4	1.353	60.21	215.3	7229.	.6615
#1	.3788	-.7677	2.718	-.0678	20.44	-.1760	-.4073	.2584	5.790
#2	.7292	-1.939	2.625	-.0269	19.90	-.0770	.5881	-.2520	5.844
#3	-.3037	.9872	2.759	-.4737	20.10	-.2977	.6426	.0042	5.865

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2043.6	5688.3	40675.	4242.9
Stddev	3.3	6.4	187.	10.0
%RSD	.16040	.11173	.46025	.23585
#1	2039.8	5684.0	40480.	4249.3
#2	2045.7	5695.6	40854.	4231.4
#3	2045.2	5685.3	40692.	4248.0

Zoom In Zoom Out

Sample Name: BLK CHECK 1 Acquired: 4/26/2017 9:49:39 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0003	-.0057	.0003	.0007	-.0001	.2380	-.0001	.0000	.0001	.0030
Stddev	.0003	.0069	.0008	.0001	.0001	.0224	.0000	.000	.0002	.0001
%RSD	95.84	122.3	251.8	8.656	186.3	9.428	28.06	13640.	246.5	2.617
#1	.0005	.0020	-.0006	.0007	-.0002	.2602	-.0001	.0001	.0002	.0030
#2	.0000	-.0116	.0006	.0008	.0000	.2383	-.0001	.0000	-.0001	.0029
#3	.0003	-.0074	.0009	.0007	.0000	.2154	-.0001	-.0001	.0002	.0030

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0001	.0158	.0859	-.0001	-.0003	1.246	.0013	.0001	.0008	-.0008
Stddev	.0022	.0186	.0153	.0000	.0002	.009	.0000	.0003	.0002	.0009
%RSD	2093.	117.2	17.82	25.79	56.82	.7040	3.162	494.0	30.02	117.0
#1	.0008	.0137	.1035	-.0001	-.0004	1.252	.0013	-.0002	.0005	.0001
#2	.0019	-.0016	.0791	-.0001	-.0001	1.251	.0013	-.0001	.0010	-.0018
#3	-.0023	.0353	.0752	-.0001	-.0004	1.236	.0013	.0004	.0008	-.0007

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0553	-.0004	.0009	.0001	.0014	.0000	.0010
Stddev	.0030	.0000	.0001	.0001	.0006	.000	.0005
%RSD	5.463	8.749	13.37	80.62	39.72	1517.	48.51
#1	.0587	-.0004	.0010	.0002	.0010	-.0002	.0015
#2	.0537	-.0004	.0008	.0000	.0012	.0002	.0007
#3	.0533	-.0004	.0010	.0002	.0021	.0000	.0007

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2122.2	5755.2	41292.	4349.8
Stddev	8.2	12.8	175.	27.8
%RSD	.38733	.22311	.42414	.63923
#1	2131.6	5769.7	41397.	4367.6
#2	2116.6	5750.5	41090.	4317.8
#3	2118.4	5745.4	41389.	4364.2

Zoom In Zoom Out

Sample Name: BLK CHECK 1 Acquired: 4/26/2017 9:49:39 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0057	.0003	.0007	-.0001	.2380	-.0001	.0000	.0001	.0030
Stddev	.0003	.0069	.0008	.0001	.0001	.0224	.0000	.000	.0002	.0001
%RSD	95.84	122.3	251.8	8.656	186.3	9.428	28.06	13640.	246.5	2.617
#1	.0005	.0020	-.0006	.0007	-.0002	.2602	-.0001	.0001	.0002	.0030
#2	.0000	-.0116	.0006	.0008	.0000	.2383	-.0001	.0000	-.0001	.0029
#3	.0003	-.0074	.0009	.0007	.0000	.2154	-.0001	-.0001	.0002	.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0158	.0859	-.0001	-.0003	1.246	.0013	.0001	.0008	-.0008
Stddev	.0022	.0186	.0153	.0000	.0002	.009	.0000	.0003	.0002	.0009
%RSD	2093.	117.2	17.82	25.79	56.82	.7040	3.162	494.0	30.02	117.0
#1	.0008	.0137	.1035	-.0001	-.0004	1.252	.0013	-.0002	.0005	.0001
#2	.0019	-.0016	.0791	-.0001	-.0001	1.251	.0013	-.0001	.0010	-.0018
#3	-.0023	.0353	.0752	-.0001	-.0004	1.236	.0013	.0004	.0008	-.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0553	-.0004	.0009	.0001	.0014	.0000	.0010
Stddev	.0030	.0000	.0001	.0001	.0006	.000	.0005
%RSD	5.463	8.749	13.37	80.62	39.72	1517.	48.51
#1	.0587	-.0004	.0010	.0002	.0010	-.0002	.0015
#2	.0537	-.0004	.0008	.0000	.0012	.0002	.0007
#3	.0533	-.0004	.0010	.0002	.0021	.0000	.0007
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: BLK CHECK 1 Acquired: 4/26/2017 9:49:39 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2122.2	5755.2	41292.	4349.8
Stddev	8.2	12.8	175.	27.8
%RSD	.38733	.22311	.42414	.63923
#1	2131.6	5769.7	41397.	4367.6
#2	2116.6	5750.5	41090.	4317.8
#3	2118.4	5745.4	41389.	4364.2

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 9:53:52 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2452	40.04	2.032	2.013	2.015	40.32	2.033	2.031	2.000	1.970
Stddev	.0011	.09	.001	.004	.006	.10	.002	.002	.008	.003
%RSD	.4578	.2192	.0646	.2241	.3199	.2583	.0773	.0908	.3823	.1639
#1	.2445	40.02	2.032	2.009	2.010	40.25	2.035	2.030	1.995	1.972
#2	.2465	40.13	2.031	2.018	2.022	40.44	2.031	2.029	1.997	1.973
#3	.2446	39.96	2.034	2.013	2.012	40.28	2.032	2.032	2.009	1.967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.20	39.83	39.70	2.006	2.000	39.45	2.042	1.975	2.028	2.039
Stddev	.18	.08	.25	.003	.004	.10	.003	.003	.002	.002
%RSD	.4392	.1940	.6330	.1248	.1973	.2643	.1439	.1604	.1176	.1184
#1	40.08	39.76	39.54	2.006	1.996	39.34	2.040	1.978	2.025	2.037
#2	40.40	39.91	39.99	2.004	2.001	39.55	2.041	1.976	2.029	2.037
#3	40.11	39.82	39.58	2.009	2.004	39.46	2.046	1.972	2.029	2.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.925	2.046	2.017	2.006	1.999	1.989	2.028
Stddev	.003	.003	.006	.003	.004	.004	.002
%RSD	.1610	.1390	.3017	.1260	.2185	.2238	.0779
#1	1.921	2.047	2.011	2.009	2.003	1.987	2.029
#2	1.927	2.043	2.023	2.004	1.999	1.985	2.026
#3	1.925	2.048	2.018	2.005	1.995	1.994	2.029
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 9:53:52 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1794.6	5429.7	39372.	4232.7
Stddev	6.8	9.9	207.	54.5
%RSD	.38089	.18271	.52627	1.2886
#1	1787.2	5418.9	39451.	4273.2
#2	1796.0	5431.9	39529.	4170.7
#3	1800.7	5438.4	39137.	4254.1

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 9:57:48 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0072	-.0002	.0003	.0002	.0005	.0001	.0001	.0003
Stddev	.0003	.0079	.0003	.0002	.0000	.0010	.0000	.0001	.0004
%RSD	96.20	110.7	176.3	51.18	29.06	205.0	44.44	50.72	118.9
#1	.0004	.0003	-.0005	.0005	.0002	.0013	.0001	.0002	.0006
#2	.0004	-.0063	.0001	.0002	.0001	-.0006	.0001	.0001	-.0001
#3	.0000	-.0155	-.0002	.0003	.0002	.0008	.0000	.0001	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0187	.0261	.0011	.0001	F.0013	.0462	.0001	.0002
Stddev	.0002	.0038	.0233	.0143	.0000	.0004	.0041	.0002	.0002
%RSD	34.40	20.28	89.15	1267.	28.06	33.05	8.831	247.7	157.6
#1	.0004	.0219	.0140	.0070	.0000	.0018	.0450	.0000	.0004
#2	.0003	.0197	.0529	-.0152	.0001	.0013	.0508	.0000	-.0001
#3	.0006	.0145	.0113	.0116	.0001	.0009	.0429	.0002	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0009	.0004	.0001	.0001	.0006	.0007	.0002	.0000
Stddev	.0006	.0005	.0004	.0003	.0000	.0001	.0007	.0002	.0001
%RSD	18880.	57.48	97.45	343.1	13.07	19.45	92.88	140.3	158.1
#1	-.0006	-.0013	.0000	.0004	.0001	.0007	-.0001	.0001	.0001
#2	.0000	-.0003	.0007	.0000	.0001	.0006	.0011	.0004	.0000
#3	.0007	-.0010	.0006	-.0002	.0001	.0005	.0011	.0000	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 9:57:48 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2084.9	5667.5	41584.	4284.5
Stddev	1.3	9.0	324.	36.9
%RSD	.06310	.15858	.77815	.86182
#1	2086.3	5665.1	41219.	4267.9
#2	2083.9	5677.4	41834.	4326.8
#3	2084.4	5659.9	41701.	4258.8

Zoom In Zoom Out

Sample Name: BLK CHECK 2 Acquired: 4/26/2017 10:02:04 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0006	.0028	.0007	.0079	.0000	1.192	-.0001	.0000	.0002	-.0001
Stddev	.0004	.0082	.0001	.0008	.000	.055	.0000	.0001	.0002	.0003
%RSD	70.40	287.8	12.56	9.796	813.0	4.569	64.32	528.1	94.07	557.8
#1	.0004	.0075	.0008	.0084	.0001	1.242	.0000	-.0001	.0002	-.0001
#2	.0011	.0076	.0006	.0070	.0000	1.200	-.0001	.0001	.0000	-.0004
#3	.0003	-.0066	.0007	.0083	-.0001	1.134	-.0001	.0000	.0003	.0003

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0011	.0451	.0791	.0000	-.0002	6.158	.0001	.0002	-.0005	-.0011
Stddev	.0015	.0232	.0307	.000	.0001	.031	.0001	.0003	.0013	.0011
%RSD	138.6	51.54	38.82	76.62	33.19	.5043	147.5	169.0	289.3	105.5
#1	-.0006	.0720	.1009	.0000	-.0001	6.147	.0002	.0001	.0001	.0002
#2	.0022	.0319	.0440	-.0001	-.0003	6.134	.0000	.0000	.0005	-.0016
#3	.0016	.0315	.0924	.0000	-.0002	6.193	.0001	.0005	-.0020	-.0019

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.2563	-.0009	.0018	.0000	.0018	.0003	.0029
Stddev	.0058	.0001	.0001	.0001	.0008	.0001	.0006
%RSD	2.252	13.65	5.804	124.7	46.32	27.99	20.43
#1	.2629	-.0008	.0019	.0001	.0027	.0004	.0035
#2	.2538	-.0008	.0018	.0001	.0016	.0003	.0026
#3	.2522	-.0011	.0017	.0000	.0011	.0002	.0025

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2077.6	5651.8	41338.	4323.0
Stddev	5.3	8.2	238.	23.8
%RSD	.25470	.14524	.57601	.55075
#1	2083.3	5658.5	41546.	4350.5
#2	2072.8	5642.6	41078.	4308.0
#3	2076.7	5654.2	41391.	4310.6

Zoom In Zoom Out

Sample Name: BLK CHECK 2 Acquired: 4/26/2017 10:02:04 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0028	.0007	.0079	.0000	F1.192	-.0001	.0000	.0002
Stddev	.0004	.0082	.0001	.0008	.000	.055	.0000	.0001	.0002
%RSD	70.40	287.8	12.56	9.796	813.0	4.569	64.32	528.1	94.07
#1	.0004	.0075	.0008	.0084	.0001	1.242	.0000	-.0001	.0002
#2	.0011	.0076	.0006	.0070	.0000	1.200	-.0001	.0001	.0000
#3	.0003	-.0066	.0007	.0083	-.0001	1.134	-.0001	.0000	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.5000			
Low Limit						-.5000			

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0011	.0451	.0791	.0000	-.0002	F6.158	.0001	.0002
Stddev	.0003	.0015	.0232	.0307	.000	.0001	.031	.0001	.0003
%RSD	557.8	138.6	51.54	38.82	76.62	33.19	.5043	147.5	169.0
#1	-.0001	-.0006	.0720	.1009	.0000	-.0001	6.147	.0002	.0001
#2	-.0004	.0022	.0319	.0440	-.0001	-.0003	6.134	.0000	.0000
#3	.0003	.0016	.0315	.0924	.0000	-.0002	6.193	.0001	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							2.500		
Low Limit							-2.500		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	-.0011	.2563	-.0009	.0018	.0000	.0018	.0003	.0029
Stddev	.0013	.0011	.0058	.0001	.0001	.0001	.0008	.0001	.0006
%RSD	289.3	105.5	2.252	13.65	5.804	124.7	46.32	27.99	20.43
#1	.0001	.0002	.2629	-.0008	.0019	.0001	.0027	.0004	.0035
#2	.0005	-.0016	.2538	-.0008	.0018	.0001	.0016	.0003	.0026
#3	-.0020	-.0019	.2522	-.0011	.0017	.0000	.0011	.0002	.0025
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: BLK CHECK 2 Acquired: 4/26/2017 10:02:04 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2077.6	5651.8	41338.	4323.0
Stddev	5.3	8.2	238.	23.8
%RSD	.25470	.14524	.57601	.55075
#1	2083.3	5658.5	41546.	4350.5
#2	2072.8	5642.6	41078.	4308.0
#3	2076.7	5654.2	41391.	4310.6

Zoom In Zoom Out

Sample Name: BLK CHECK 3 Acquired: 4/26/2017 10:06:17 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0002	.0266	.0001	.0059	-.0001	.6028	-.0001	.0000	.0003	.0028
Stddev	.0002	.0164	.0000	.0009	.0000	.0436	.0000	.0001	.0002	.0002
%RSD	89.03	61.67	30.01	14.40	39.86	7.228	9.278	915.2	55.11	5.991
#1	.0002	.0133	.0001	.0052	-.0001	.6468	-.0001	-.0001	.0004	.0029
#2	.0000	.0450	.0002	.0069	-.0001	.6021	-.0001	.0001	.0001	.0028
#3	.0005	.0215	.0001	.0057	.0000	.5597	-.0001	.0000	.0004	.0026

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0073	.0114	.0604	-.0001	-.0004	5.284	.0001	.0006	.0007	-.0014
Stddev	.0010	.0073	.0112	.0000	.0000	.009	.0002	.0004	.0004	.0003
%RSD	13.79	63.72	18.51	18.64	1.491	.1604	334.2	68.57	51.76	23.07
#1	.0079	.0159	.0725	-.0001	-.0004	5.293	-.0001	.0011	.0012	-.0012
#2	.0061	.0154	.0504	-.0001	-.0004	5.283	.0004	.0004	.0004	-.0012
#3	.0079	.0030	.0584	-.0001	-.0004	5.276	-.0001	.0003	.0006	-.0018

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.4124	-.0001	.0007	.0000	.0011	.0001	.0044
Stddev	.0106	.0000	.0000	.0001	.0007	.0001	.0003
%RSD	2.562	47.39	6.699	176.3	64.49	164.7	6.729
#1	.4017	-.0001	.0007	.0000	.0017	.0001	.0047
#2	.4228	-.0001	.0007	.0001	.0013	-.0001	.0044
#3	.4129	-.0001	.0008	.0001	.0003	.0002	.0041

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2077.1	5695.3	40972.	4310.1
Stddev	5.7	11.7	161.	27.8
%RSD	.27352	.20459	.39289	.64436
#1	2083.2	5708.6	41157.	4318.5
#2	2076.3	5690.5	40896.	4332.6
#3	2072.0	5686.9	40864.	4279.0

Zoom In Zoom Out

Sample Name: BLK CHECK 3 Acquired: 4/26/2017 10:06:17 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0266	.0001	.0059	-.0001	F.6028	-.0001	.0000	.0003
Stddev	.0002	.0164	.0000	.0009	.0000	.0436	.0000	.0001	.0002
%RSD	89.03	61.67	30.01	14.40	39.86	7.228	9.278	915.2	55.11
#1	.0002	.0133	.0001	.0052	-.0001	.6468	-.0001	-.0001	.0004
#2	.0000	.0450	.0002	.0069	-.0001	.6021	-.0001	.0001	.0001
#3	.0005	.0215	.0001	.0057	.0000	.5597	-.0001	.0000	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.5000			
Low Limit						-.5000			

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028	.0073	.0114	.0604	-.0001	-.0004	F5.284	.0001	.0006
Stddev	.0002	.0010	.0073	.0112	.0000	.0000	.009	.0002	.0004
%RSD	5.991	13.79	63.72	18.51	18.64	1.491	.1604	334.2	68.57
#1	.0029	.0079	.0159	.0725	-.0001	-.0004	5.293	-.0001	.0011
#2	.0028	.0061	.0154	.0504	-.0001	-.0004	5.283	.0004	.0004
#3	.0026	.0079	.0030	.0584	-.0001	-.0004	5.276	-.0001	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							2.500		
Low Limit							-2.500		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	-.0014	.4124	-.0001	.0007	.0000	.0011	.0001	.0044
Stddev	.0004	.0003	.0106	.0000	.0000	.0001	.0007	.0001	.0003
%RSD	51.76	23.07	2.562	47.39	6.699	176.3	64.49	164.7	6.729
#1	.0012	-.0012	.4017	-.0001	.0007	.0000	.0017	.0001	.0047
#2	.0004	-.0012	.4228	-.0001	.0007	.0001	.0013	-.0001	.0044
#3	.0006	-.0018	.4129	-.0001	.0008	.0001	.0003	.0002	.0041
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: BLK CHECK 3 Acquired: 4/26/2017 10:06:17 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2077.1	5695.3	40972.	4310.1
Stddev	5.7	11.7	161.	27.8
%RSD	.27352	.20459	.39289	.64436
#1	2083.2	5708.6	41157.	4318.5
#2	2076.3	5690.5	40896.	4332.6
#3	2072.0	5686.9	40864.	4279.0

Zoom In Zoom Out

Sample Name: BLK CHECK 4 Acquired: 4/26/2017 10:10:30 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0003	.0117	.0008	.0027	-.0001	.1335	-.0001	.0001	.0024	.0004
Stddev	.0000	.0125	.0003	.0004	.0001	.0175	.0000	.0000	.0001	.0002
%RSD	8.180	106.7	36.39	16.02	54.51	13.14	25.61	33.69	5.834	60.42
#1	.0003	.0097	.0012	.0022	-.0001	.1430	-.0001	.0001	.0026	.0006
#2	.0003	.0251	.0007	.0031	-.0001	.1442	-.0001	.0001	.0024	.0002
#3	.0003	.0004	.0006	.0029	.0000	.1132	-.0001	.0001	.0023	.0003

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0035	.0677	.0268	.0000	.0052	24.51	-.0002	.0000	-.0003	.0002
Stddev	.0033	.0101	.0266	.000	.0044	.36	.0001	.000	.0003	.0019
%RSD	95.39	14.98	99.20	18.66	84.32	1.477	47.83	586.9	115.7	978.3
#1	.0056	.0601	.0574	-.0001	.0011	24.91	-.0001	.0002	-.0004	-.0018
#2	-.0003	.0639	.0139	.0000	.0046	24.20	-.0002	-.0003	.0001	.0021
#3	.0051	.0792	.0091	.0000	.0098	24.42	-.0003	.0000	-.0006	.0002

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.2682	-.0006	.0002	-.0001	.0010	.0001	.0033
Stddev	.0425	.0000	.0001	.0001	.0009	.0002	.0016
%RSD	15.85	6.070	45.87	142.8	95.87	131.8	49.04
#1	.2302	-.0006	.0001	-.0001	.0002	-.0001	.0018
#2	.2602	-.0006	.0002	-.0001	.0020	.0002	.0030
#3	.3141	-.0005	.0003	.0000	.0007	.0003	.0050

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2021.0	5624.2	40097.	4269.1
Stddev	2.3	6.4	96.	52.0
%RSD	.11533	.11468	.23927	1.2175
#1	2023.1	5626.4	40174.	4273.6
#2	2021.4	5629.3	39989.	4318.6
#3	2018.5	5616.9	40127.	4214.9

Zoom In Zoom Out

Sample Name: BLK CHECK 4 Acquired: 4/26/2017 10:10:30 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0117	.0008	.0027	-.0001	.1335	-.0001	.0001	.0024
Stddev	.0000	.0125	.0003	.0004	.0001	.0175	.0000	.0000	.0001
%RSD	8.180	106.7	36.39	16.02	54.51	13.14	25.61	33.69	5.834
#1	.0003	.0097	.0012	.0022	-.0001	.1430	-.0001	.0001	.0026
#2	.0003	.0251	.0007	.0031	-.0001	.1442	-.0001	.0001	.0024
#3	.0003	.0004	.0006	.0029	.0000	.1132	-.0001	.0001	.0023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0035	.0677	.0268	.0000	.0052	F24.51	-.0002	.0000
Stddev	.0002	.0033	.0101	.0266	.000	.0044	.36	.0001	.000
%RSD	60.42	95.39	14.98	99.20	18.66	84.32	1.477	47.83	586.9
#1	.0006	.0056	.0601	.0574	-.0001	.0011	24.91	-.0001	.0002
#2	.0002	-.0003	.0639	.0139	.0000	.0046	24.20	-.0002	-.0003
#3	.0003	.0051	.0792	.0091	.0000	.0098	24.42	-.0003	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							2.500		
Low Limit							-2.500		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	.0002	.2682	-.0006	.0002	-.0001	.0010	.0001	.0033
Stddev	.0003	.0019	.0425	.0000	.0001	.0001	.0009	.0002	.0016
%RSD	115.7	978.3	15.85	6.070	45.87	142.8	95.87	131.8	49.04
#1	-.0004	-.0018	.2302	-.0006	.0001	-.0001	.0002	-.0001	.0018
#2	.0001	.0021	.2602	-.0006	.0002	-.0001	.0020	.0002	.0030
#3	-.0006	.0002	.3141	-.0005	.0003	.0000	.0007	.0003	.0050
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: BLK CHECK 4 Acquired: 4/26/2017 10:10:30 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2021.0	5624.2	40097.	4269.1
Stddev	2.3	6.4	96.	52.0
%RSD	.11533	.11468	.23927	1.2175
#1	2023.1	5626.4	40174.	4273.6
#2	2021.4	5629.3	39989.	4318.6
#3	2018.5	5616.9	40127.	4214.9

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 10:14:44 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2479	40.24	2.035	2.032	2.019	40.53	2.040	2.038	2.018	1.995
Stddev	.0008	.06	.002	.004	.002	.02	.002	.003	.003	.002
%RSD	.3362	.1567	.0812	.1915	.1209	.0527	.0726	.1636	.1571	.1030
#1	.2481	40.24	2.036	2.036	2.017	40.51	2.039	2.035	2.019	1.997
#2	.2486	40.29	2.034	2.032	2.022	40.55	2.040	2.036	2.021	1.995
#3	.2470	40.17	2.037	2.029	2.019	40.53	2.042	2.041	2.015	1.992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.44	39.89	39.85	2.029	2.011	39.62	2.050	1.987	2.036	2.041
Stddev	.11	.08	.16	.004	.005	.08	.003	.003	.003	.005
%RSD	.2713	.1980	.4069	.2058	.2558	.1902	.1392	.1564	.1651	.2417
#1	40.46	39.81	39.71	2.032	2.007	39.62	2.048	1.983	2.034	2.038
#2	40.53	39.97	40.03	2.032	2.008	39.70	2.049	1.987	2.033	2.038
#3	40.32	39.90	39.81	2.025	2.017	39.55	2.053	1.990	2.040	2.046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.929	2.053	2.022	2.029	2.009	2.002	2.036
Stddev	.004	.003	.001	.004	.005	.003	.002
%RSD	.2102	.1583	.0473	.2043	.2596	.1302	.1076
#1	1.930	2.051	2.023	2.032	2.004	2.005	2.034
#2	1.925	2.051	2.022	2.030	2.014	2.001	2.035
#3	1.933	2.057	2.022	2.024	2.007	2.000	2.038
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 10:14:44 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1780.4	5389.3	39125.	4192.6
Stddev	1.2	7.9	163.	26.4
%RSD	.06932	.14640	.41646	.62971
#1	1781.2	5392.9	38983.	4219.7
#2	1781.0	5394.7	39089.	4166.9
#3	1778.9	5380.2	39303.	4191.2

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 10:18:41 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0068	-.0005	.0004	.0001	.0004	.0000	.0001	.0001
Stddev	.0001	.0022	.0005	.0001	.0000	.0022	.000	.0001	.0000
%RSD	74.37	32.73	104.5	14.58	4.836	593.6	256.0	168.9	35.08
#1	.0000	-.0070	-.0010	.0003	.0001	.0027	.0000	.0002	.0001
#2	.0002	-.0045	-.0003	.0003	.0001	-.0015	.0000	.0001	.0000
#3	.0002	-.0089	-.0001	.0004	.0001	-.0001	.0000	-.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0248	.0096	.0047	.0001	F.0017	.0392	-.0002	.0000
Stddev	.0001	.0075	.0046	.0237	.0000	.0005	.0127	.0001	.0002
%RSD	24.11	30.10	47.93	509.7	41.36	29.62	32.42	55.41	702.1
#1	.0005	.0333	.0132	.0152	.0000	.0023	.0518	-.0002	-.0002
#2	.0006	.0194	.0044	-.0225	.0001	.0017	.0395	-.0002	.0000
#3	.0004	.0217	.0112	.0213	.0001	.0012	.0264	-.0001	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	-.0015	.0005	.0000	.0002	.0008	.0006	.0002	.0000
Stddev	.0002	.0010	.0002	.0003	.0000	.0002	.0001	.0001	.0000
%RSD	35.64	69.80	32.07	1011.	22.38	19.00	19.23	39.40	69.22
#1	.0004	-.0018	.0003	.0004	.0002	.0010	.0007	.0002	.0000
#2	.0009	-.0024	.0004	.0000	.0002	.0007	.0005	.0002	.0000
#3	.0006	-.0003	.0006	-.0002	.0001	.0008	.0006	.0003	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 10:18:41 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2083.4	5663.1	41487.	4288.4
Stddev	1.5	5.3	270.	43.2
%RSD	.07330	.09287	.65145	1.0078
#1	2082.2	5667.7	41221.	4244.7
#2	2082.9	5664.4	41762.	4331.1
#3	2085.1	5657.4	41477.	4289.3

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 12:48:59 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2474	40.43	2.004	2.023	2.076	40.72	2.056	2.041	2.006	2.015
Stddev	.0014	.13	.002	.003	.004	.08	.002	.001	.005	.005
%RSD	.5680	.3201	.0806	.1260	.1923	.1895	.1091	.0523	.2624	.2570
#1	.2468	40.29	2.006	2.022	2.071	40.64	2.056	2.042	2.009	2.011
#2	.2490	40.46	2.004	2.021	2.077	40.77	2.057	2.041	2.008	2.021
#3	.2464	40.54	2.003	2.026	2.079	40.77	2.053	2.040	2.000	2.014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.32	40.94	40.94	2.036	2.000	41.28	2.018	2.035	2.003	2.006
Stddev	.10	.09	.17	.009	.001	.10	.004	.005	.003	.003
%RSD	.2305	.2108	.4214	.4523	.0680	.2532	.1737	.2256	.1408	.1558
#1	41.21	40.84	40.75	2.035	2.001	41.16	2.022	2.033	2.001	2.009
#2	41.39	40.97	40.98	2.045	2.001	41.34	2.016	2.040	2.002	2.004
#3	41.37	41.00	41.08	2.027	1.998	41.34	2.016	2.032	2.006	2.004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.893	2.006	2.077	2.047	2.047	2.008	2.054
Stddev	.002	.002	.003	.007	.008	.003	.003
%RSD	.1053	.1025	.1453	.3667	.3879	.1597	.1344
#1	1.895	2.009	2.075	2.046	2.042	2.008	2.056
#2	1.893	2.006	2.075	2.055	2.056	2.010	2.056
#3	1.891	2.005	2.080	2.040	2.044	2.004	2.051
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 12:48:59 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1797.4	5546.9	39436.	4098.2
Stddev	.7	.8	121.	29.7
%RSD	.03830	.01390	.30788	.72569
#1	1798.0	5547.7	39344.	4109.1
#2	1797.5	5546.2	39391.	4064.5
#3	1796.7	5546.7	39574.	4120.9

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 12:59:06 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0100	.0002	.0009	.0004	.0079	.0004	.0005	.0005	.0008
Stddev	.0002	.0116	.0006	.0002	.0001	.0036	.0001	.0002	.0000	.0002
%RSD	274.9	115.3	358.0	21.69	14.08	45.29	28.87	37.45	5.795	20.58
#1	.0000	-.0062	.0002	.0008	.0004	.0072	.0005	.0007	.0005	.0009
#2	-.0001	-.0230	.0008	.0008	.0004	.0047	.0004	.0004	.0005	.0007
#3	.0003	-.0008	-.0005	.0012	.0004	.0117	.0003	.0003	.0005	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0177	.0373	.0290	.0006	.0002	.0223	.0002	.0005	.0014	-.0005
Stddev	.0021	.0181	.0053	.0001	.0002	.0027	.0003	.0003	.0008	.0009
%RSD	11.62	48.65	18.26	12.73	104.0	12.26	131.4	65.68	57.91	174.2
#1	.0154	.0204	.0343	.0007	.0004	.0192	.0006	.0003	.0010	.0005
#2	.0194	.0564	.0290	.0005	.0000	.0236	.0000	.0008	.0008	-.0008
#3	.0184	.0351	.0237	.0006	.0001	.0242	.0001	.0003	.0023	-.0012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0004	.0005	.0007	.0006	.0006	.0002
Stddev	.0001	.0001	.0002	.0001	.0002	.0002	.0001
%RSD	100.00	23.59	36.39	8.084	37.43	28.22	39.04
#1	.0000	.0004	.0004	.0007	.0004	.0004	.0003
#2	.0002	.0003	.0004	.0008	.0008	.0008	.0002
#3	.0001	.0005	.0007	.0007	.0006	.0006	.0001
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 12:59:06 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2083.1	5805.6	40693.	4140.8
Stddev	3.4	7.2	71.	16.1
%RSD	.16532	.12452	.17345	.38821
#1	2082.5	5806.0	40668.	4159.0
#2	2079.9	5798.2	40638.	4128.4
#3	2086.7	5812.6	40773.	4135.1

Zoom In Zoom Out

Sample Name: MP32050-MB1 Acquired: 4/26/2017 13:38:50 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0068	-.0009	.0003	.0000	.1244	.0000	.0000	.0008
Stddev	.0001	.0040	.0003	.0002	.000	.0049	.000	.000	.0002
%RSD	48.93	58.40	36.07	64.14	248.5	3.928	68.14	146.9	21.75
#1	.0003	.0101	-.0012	.0002	.0000	.1300	.0000	.0000	.0006
#2	.0001	.0080	-.0011	.0002	.0000	.1220	-.0001	-.0001	.0007
#3	.0002	.0024	-.0006	.0004	.0000	.1211	.0000	.0000	.0010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0425	.0182	.0157	.0007	-.0002	.0015	.0001	F.0025
Stddev	.0004	.0019	.0208	.0229	.0000	.0001	.0097	.0001	.0001
%RSD	68.56	4.567	114.0	145.5	4.889	40.67	635.1	110.5	5.723
#1	.0006	.0404	-.0030	-.0050	.0007	-.0003	.0109	.0002	.0025
#2	.0008	.0442	.0386	.0119	.0007	-.0002	-.0085	.0001	.0026
#3	.0001	.0430	.0191	.0403	.0006	-.0001	.0021	.0000	.0024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit									.0025
Low Limit									-.0025

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	-.0008	.0161	.0222	.0007	.0014	-.0009	.0000	.0026
Stddev	.0011	.0007	.0004	.0002	.0001	.0001	.0010	.000	.0000
%RSD	125.2	87.34	2.674	.7456	15.52	9.296	106.4	1376.	.6581
#1	.0016	-.0004	.0164	.0224	.0007	.0014	.0001	.0000	.0026
#2	-.0004	-.0017	.0164	.0221	.0008	.0016	-.0010	.0000	.0026
#3	.0014	-.0005	.0156	.0222	.0006	.0013	-.0019	-.0001	.0026
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP32050-MB1 Acquired: 4/26/2017 13:38:50 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2091.0	5782.3	41564.	4184.2
Stddev	5.6	11.0	197.	21.6
%RSD	.26583	.19039	.47406	.51737
#1	2089.9	5773.6	41780.	4169.0
#2	2086.2	5778.6	41394.	4174.6
#3	2097.1	5794.7	41518.	4208.9

Zoom In Zoom Out

Sample Name: MP32050-B1 Acquired: 4/26/2017 13:43:05 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0481	28.67	2.011	2.109	.0536	27.07	.0516	.5183	.2098	.2633
Stddev	.0005	.01	.004	.001	.0001	.04	.0001	.0006	.0004	.0008
%RSD	1.016	.0390	.2105	.0502	.2354	.1576	.1720	.1081	.1967	.3153
#1	.0482	28.67	2.016	2.108	.0535	27.09	.0517	.5186	.2096	.2626
#2	.0486	28.68	2.012	2.110	.0537	27.10	.0516	.5186	.2103	.2630
#3	.0476	28.66	2.007	2.108	.0536	27.02	.0517	.5176	.2096	.2642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.94	26.70	26.49	.5290	.5409	26.76	.5216	.5045	.5088	2.012
Stddev	.12	.09	.03	.0013	.0001	.05	.0006	.0014	.0025	.002
%RSD	.4172	.3308	.1289	.2526	.0135	.1744	.1156	.2817	.4894	.1205
#1	27.85	26.60	26.45	.5300	.5410	26.71	.5223	.5034	.5060	2.010
#2	28.07	26.76	26.51	.5275	.5408	26.77	.5213	.5061	.5109	2.011
#3	27.91	26.73	26.51	.5294	.5410	26.80	.5212	.5040	.5095	2.014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0081	.5560	.5344	.5330	2.027	.5015	.5164
Stddev	.0005	.0013	.0018	.0007	.002	.0007	.0010
%RSD	6.589	.2329	.3389	.1363	.1205	.1365	.1855
#1	.0086	.5575	.5323	.5333	2.028	.5022	.5159
#2	.0081	.5553	.5353	.5321	2.028	.5008	.5175
#3	.0076	.5551	.5355	.5335	2.024	.5015	.5158
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP32050-B1 Acquired: 4/26/2017 13:43:05 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1885.5	5628.5	39796.	4116.9
Stddev	4.3	11.5	128.	20.1
%RSD	.22840	.20447	.32047	.48868
#1	1884.1	5621.6	39681.	4134.8
#2	1882.0	5622.1	39933.	4095.1
#3	1890.3	5641.8	39776.	4120.9

Zoom In Zoom Out

Sample Name: FA43252-5 Acquired: 4/26/2017 13:47:05 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	-.0010	26.37	.0316	.1065	.0019	F1862.	-.0015	.0068
Stddev	.0001	.05	.0004	.0002	.0000	21.	.0001	.0001
%RSD	10.64	.1939	1.419	.1520	2.259	1.149	4.615	1.082
#1	-.0008	26.35	.0319	.1067	.0019	1868.	-.0015	.0069
#2	-.0010	26.33	.0319	.1065	.0020	1838.	-.0014	.0068
#3	-.0011	26.43	.0311	.1064	.0020	1880.	-.0016	.0068

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	.0812	.0056	37.49	4.731	25.21	.6235	.0026	28.17
Stddev	.0002	.0002	.10	.050	.10	.0017	.0001	.03
%RSD	.1915	4.139	.2793	1.064	.3911	.2771	2.969	.1052
#1	.0811	.0057	37.39	4.673	25.32	.6215	.0027	28.15
#2	.0814	.0053	37.49	4.754	25.13	.6244	.0026	28.14
#3	.0813	.0057	37.60	4.766	25.18	.6247	.0026	28.20

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	.0154	.0579	F-.0068	.0007	1.072	.0153	F13.03	.3872
Stddev	.0002	.0009	.0003	.0014	.000	.0003	.14	.0009
%RSD	1.409	1.509	4.539	214.1	.0194	2.104	1.089	.2436
#1	.0153	.0576	-.0068	-.0005	1.072	.0153	13.19	.3861
#2	.0152	.0572	-.0065	.0002	1.072	.0149	12.93	.3876
#3	.0156	.0588	-.0071	.0023	1.072	.0156	12.96	.3878

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0078	.0665	.0550
Stddev	.0012	.0002	.0001
%RSD	15.03	.3684	.1800
#1	-.0091	.0667	.0551
#2	-.0068	.0662	.0549
#3	-.0076	.0665	.0550

Zoom In Zoom Out

Sample Name: FA43252-5 Acquired: 4/26/2017 13:47:05 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1459.1	5787.8	40739.	4617.3
Stddev	3.0	8.4	142.	43.9
%RSD	.20501	.14498	.34772	.95170
#1	1462.0	5791.4	40902.	4602.6
#2	1459.4	5793.8	40675.	4666.7
#3	1456.0	5778.2	40641.	4582.6

Zoom In Zoom Out

Sample Name: MP32050-D1 Acquired: 4/26/2017 13:51:27 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	-.0004	28.60	.0315	.0949	.0020	F1434.	-.0008	.0062	.0805
Stddev	.0003	.01	.0002	.0004	.0001	19.	.0001	.0001	.0000
%RSD	62.95	.0396	.6924	.4328	6.200	1.292	12.75	1.334	.0570
#1	-.0007	28.59	.0314	.0953	.0019	1456.	-.0009	.0062	.0805
#2	-.0002	28.60	.0313	.0945	.0020	1426.	-.0008	.0063	.0806
#3	-.0004	28.62	.0317	.0949	.0022	1421.	-.0007	.0061	.0805

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0069	37.25	5.179	24.67	.5872	.0018	18.81	.0149	.0454
Stddev	.0001	.08	.037	.12	.0011	.0002	.04	.0001	.0009
%RSD	1.621	.2210	.7153	.4963	.1910	8.659	.2130	.9652	1.953
#1	.0069	37.34	5.139	24.80	.5861	.0019	18.82	.0149	.0455
#2	.0069	37.17	5.185	24.66	.5872	.0018	18.77	.0151	.0463
#3	.0067	37.25	5.212	24.56	.5884	.0016	18.84	.0148	.0445

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0045	-.0002	1.054	.0154	F10.20	.4554	-.0061	.0716	.0614
Stddev	.0012	.0011	.001	.0003	.25	.0006	.0006	.0004	.0001
%RSD	26.92	630.8	.1045	1.707	2.474	.1406	10.34	.5166	.2314
#1	-.0058	-.0003	1.055	.0156	10.48	.4554	-.0056	.0720	.0613
#2	-.0036	.0010	1.055	.0154	10.14	.4547	-.0069	.0712	.0615
#3	-.0039	-.0012	1.053	.0151	9.986	.4560	-.0059	.0716	.0614

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1527.4	5842.6	41173.	4635.1
Stddev	2.0	5.2	17.	39.4
%RSD	.12953	.08834	.04009	.85092
#1	1529.2	5844.0	41181.	4590.0
#2	1525.3	5836.9	41184.	4651.9
#3	1527.7	5847.0	41154.	4663.3

Zoom In Zoom Out

Sample Name: MP32050-SD1 Acquired: 4/26/2017 13:55:49 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	-.0006	32.22	.0337	.1329	.0027	F2616.	-.0025	.0086	.1090
Stddev	.0022	.14	.0028	.0004	.0002	26.	.0001	.0002	.0005
%RSD	337.6	.4269	8.362	.3365	7.419	1.002	5.042	2.354	.4877
#1	.0017	32.21	.0305	.1332	.0028	2595.	-.0024	.0087	.1095
#2	-.0026	32.36	.0345	.1330	.0025	2645.	-.0026	.0084	.1092
#3	-.0010	32.09	.0360	.1324	.0028	2606.	-.0025	.0088	.1084

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0094	48.32	5.843	33.20	.8024	-.0006	34.84	.0204	.0713
Stddev	.0004	.15	.049	.23	.0035	.0000	.12	.0011	.0052
%RSD	4.112	.3172	.8378	.6826	.4407	6.395	.3375	5.296	7.292
#1	.0093	48.35	5.801	33.16	.7998	-.0005	34.88	.0194	.0667
#2	.0098	48.46	5.897	33.45	.8064	-.0006	34.93	.0215	.0703
#3	.0091	48.16	5.832	33.00	.8011	-.0006	34.71	.0203	.0770

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0044	.0001	1.292	.0193	16.60	.5036	-.0087	.0845	.0996
Stddev	.0045	.0034	.003	.0007	.05	.0028	.0034	.0013	.0003
%RSD	103.0	2638.	.2541	3.816	.2843	.5645	39.43	1.513	.3216
#1	-.0094	.0024	1.294	.0201	16.65	.5018	-.0048	.0855	.0999
#2	-.0029	-.0038	1.289	.0186	16.60	.5068	-.0099	.0831	.0997
#3	-.0008	.0019	1.294	.0193	16.55	.5021	-.0113	.0850	.0993

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1752.2	5606.7	39456.	4257.3
Stddev	3.6	10.7	336.	32.9
%RSD	.20363	.18996	.85161	.77285
#1	1748.6	5602.9	39641.	4284.2
#2	1755.8	5618.7	39068.	4220.6
#3	1752.2	5598.4	39659.	4267.0

Zoom In Zoom Out

Sample Name: MP32050-PS1 Acquired: 4/26/2017 14:00:05 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0408	27.88	.1256	.3307	.0452	F1792.	.0393	.0468	.1206
Stddev	.0001	.15	.0003	.0004	.0001	15.	.0001	.0000	.0003
%RSD	.3319	.5557	.2134	.1181	.1653	.8545	.2009	.0757	.2618
#1	.0407	27.78	.1258	.3306	.0453	1781.	.0393	.0468	.1202
#2	.0408	27.80	.1253	.3303	.0451	1810.	.0393	.0468	.1207
#3	.0409	28.06	.1255	.3311	.0452	1787.	.0392	.0468	.1208

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0961	38.88	13.99	28.48	.6487	.0907	36.48	.0934	.1067
Stddev	.0003	.15	.07	.14	.0026	.0005	.15	.0004	.0010
%RSD	.2863	.3895	.5290	.4927	.3987	.5532	.3986	.3999	.9044
#1	.0962	38.83	13.97	28.34	.6473	.0903	36.43	.0931	.1058
#2	.0958	38.75	13.93	28.47	.6470	.0906	36.36	.0938	.1067
#3	.0963	39.04	14.07	28.62	.6516	.0913	36.64	.0934	.1077

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0882	.0891	1.058	.0537	F12.59	.4648	.0901	.1067	.2588
Stddev	.0014	.0004	.001	.0002	.16	.0008	.0026	.0002	.0002
%RSD	1.627	.4273	.0865	.3491	1.255	.1744	2.881	.2200	.0751
#1	.0896	.0894	1.059	.0536	12.58	.4642	.0926	.1066	.2586
#2	.0867	.0893	1.059	.0539	12.44	.4646	.0874	.1065	.2590
#3	.0882	.0887	1.057	.0535	12.75	.4657	.0904	.1069	.2588

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1466.4	5788.4	40928.	4689.1
Stddev	3.1	8.0	211.	19.6
%RSD	.21306	.13826	.51646	.41887
#1	1467.9	5795.7	41135.	4703.9
#2	1468.4	5779.9	40936.	4696.7
#3	1462.8	5789.7	40713.	4666.8

Zoom In Zoom Out

Sample Name: MP32050-S1 Acquired: 4/26/2017 14:04:24 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0421	67.96	1.774	1.893	.0454	F1755.	.0380	.3943	.2606
Stddev	.0004	.11	.002	.003	.0002	10.	.0001	.0003	.0005
%RSD	1.042	.1662	.1206	.1350	.3356	.5687	.1937	.0698	.1835
#1	.0426	67.88	1.774	1.893	.0452	1760.	.0380	.3944	.2601
#2	.0419	68.09	1.776	1.896	.0455	1762.	.0380	.3945	.2608
#3	.0419	67.91	1.772	1.891	.0455	1744.	.0379	.3940	.2610

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2275	62.37	29.60	48.39	.9959	.4010	49.27	.4066	.5397
Stddev	.0003	.10	.07	.05	.0014	.0011	.12	.0003	.0002
%RSD	.1206	.1548	.2430	.1026	.1386	.2723	.2359	.0778	.0326
#1	.2272	62.45	29.63	48.42	.9944	.4018	49.33	.4065	.5395
#2	.2277	62.41	29.65	48.41	.9961	.4014	49.35	.4069	.5398
#3	.2276	62.26	29.52	48.33	.9972	.3998	49.14	.4063	.5397

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1164	1.738	1.345	.3967	F14.14	.8274	1.870	.4830	.4549
Stddev	.0005	.008	.001	.0006	.30	.0015	.003	.0009	.0003
%RSD	.4287	.4490	.0653	.1387	2.115	.1769	.1782	.1928	.0587
#1	.1161	1.741	1.345	.3963	13.80	.8283	1.874	.4829	.4546
#2	.1170	1.744	1.345	.3973	14.26	.8257	1.870	.4840	.4549
#3	.1161	1.729	1.344	.3964	14.36	.8283	1.867	.4821	.4551

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1448.8	5776.6	40786.	4650.7
Stddev	1.8	6.6	110.	5.2
%RSD	.12277	.11398	.27074	.11143
#1	1450.7	5781.5	40878.	4656.5
#2	1448.7	5769.1	40663.	4649.0
#3	1447.2	5779.2	40816.	4646.5

Zoom In Zoom Out

Sample Name: MP32050-S2 Acquired: 4/26/2017 14:08:39 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0426	51.11	1.778	1.874	.0443	F1807.	.0378	.3944	.2298
Stddev	.0006	.09	.003	.002	.0001	12.	.0001	.0006	.0002
%RSD	1.507	.1807	.1496	.1126	.1609	.6545	.3450	.1564	.0965
#1	.0433	51.21	1.777	1.875	.0444	1807.	.0377	.3939	.2301
#2	.0425	51.03	1.776	1.874	.0443	1818.	.0378	.3941	.2297
#3	.0421	51.10	1.781	1.871	.0443	1795.	.0379	.3951	.2297

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2231	51.93	27.54	44.21	1.020	.4163	48.72	.4025	.5137
Stddev	.0006	.01	.01	.07	.003	.0010	.04	.0004	.0018
%RSD	.2676	.0235	.0398	.1566	.2858	.2399	.0890	.1095	.3545
#1	.2237	51.94	27.55	44.23	1.021	.4152	48.76	.4023	.5116
#2	.2231	51.93	27.53	44.27	1.023	.4165	48.68	.4022	.5144
#3	.2225	51.92	27.54	44.14	1.017	.4171	48.73	.4030	.5150

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1467	1.744	1.272	.4050	F11.46	.7015	1.817	.4591	.4415
Stddev	.0012	.003	.002	.0007	.34	.0011	.004	.0007	.0005
%RSD	.8231	.1878	.1152	.1736	2.958	.1501	.2486	.1531	.1149
#1	.1455	1.742	1.271	.4045	11.80	.7024	1.814	.4583	.4416
#2	.1465	1.742	1.272	.4048	11.12	.7018	1.815	.4596	.4410
#3	.1479	1.748	1.274	.4058	11.46	.7003	1.822	.4595	.4420

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1452.9	5605.3	39507.	4479.6
Stddev	.5	5.8	101.	5.6
%RSD	.03111	.10378	.25479	.12461
#1	1452.4	5610.6	39513.	4473.1
#2	1453.3	5606.1	39403.	4483.2
#3	1453.0	5599.1	39604.	4482.3

Zoom In Zoom Out

Sample Name: FA43270-1 Acquired: 4/26/2017 14:12:55 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	-.0019	169.9	.1023	1.945	.0594	155.1	-.0013	.0558	.1260	.1299
Stddev	.0013	.9	.0006	.007	.0003	.4	.0001	.0004	.0008	.0013
%RSD	69.94	.5093	.5508	.3750	.5720	.2567	8.864	.6836	.6308	1.032
#1	-.0012	170.4	.1019	1.946	.0597	155.3	-.0013	.0562	.1269	.1303
#2	-.0033	170.3	.1022	1.951	.0595	155.3	-.0015	.0554	.1256	.1310
#3	-.0010	168.9	.1030	1.937	.0591	154.6	-.0012	.0558	.1256	.1284

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	271.2	34.64	31.79	4.362	.0118	1.132	.1312	.2984	-.0010	.0129
Stddev	1.3	.24	.26	.017	.0001	.005	.0009	.0045	.0057	.0048
%RSD	.4888	.6937	.8295	.3892	1.014	.4678	.6571	1.492	577.0	36.70
#1	272.1	34.83	31.95	4.381	.0120	1.127	.1322	.3031	-.0055	.0079
#2	271.8	34.71	31.93	4.353	.0118	1.138	.1306	.2978	.0054	.0137
#3	269.7	34.37	31.48	4.351	.0117	1.132	.1308	.2943	-.0029	.0173

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.9669	.0390	.6275	2.656	.0038	.2797	.8513
Stddev	.0033	.0003	.0014	.003	.0031	.0008	.0018
%RSD	.3448	.8198	.2225	.1275	82.18	.3016	.2168
#1	.9705	.0386	.6289	2.659	.0062	.2805	.8528
#2	.9664	.0391	.6273	2.654	.0050	.2789	.8518
#3	.9639	.0392	.6261	2.654	.0003	.2798	.8492

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1943.7	9283.2	65427.	6840.0
Stddev	2.4	16.3	460.	46.8
%RSD	.12105	.17611	.70378	.68469
#1	1945.9	9301.0	64905.	6842.4
#2	1944.1	9279.9	65774.	6792.0
#3	1941.2	9268.8	65602.	6885.6

Zoom In Zoom Out

Sample Name: FA43270-2 Acquired: 4/26/2017 14:17:01 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0114	169.9	.1803	1.870	.0290	92.25	.0057	.1322	.2009
Stddev	.0016	.2	.0016	.001	.0002	.34	.0006	.0003	.0012
%RSD	13.86	.1365	.9054	.0730	.8335	.3690	11.24	.2301	.6086
#1	.0105	169.7	.1816	1.869	.0291	91.97	.0064	.1320	.2023
#2	.0104	170.2	.1807	1.869	.0288	92.63	.0052	.1321	.2000
#3	.0132	169.9	.1785	1.872	.0293	92.14	.0055	.1326	.2003

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	9.289	377.5	55.92	81.98	6.368	.0121	1.876	.2418	F337.6
Stddev	.009	1.0	.13	.13	.008	.0008	.030	.0006	.1
%RSD	.0952	.2667	.2378	.1593	.1225	6.435	1.625	.2301	.0201
#1	9.293	376.5	55.81	81.84	6.366	.0128	1.902	.2421	337.7
#2	9.279	378.6	56.07	82.01	6.362	.0113	1.842	.2421	337.5
#3	9.295	377.5	55.90	82.10	6.377	.0123	1.883	.2411	337.6

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.534	.0114	1.222	.3817	.7339	3.479	-.0019	.4106	2.319
Stddev	.006	.0046	.004	.0007	.0010	.006	.0067	.0018	.004
%RSD	.4180	39.99	.2846	.1921	.1353	.1603	362.0	.4294	.1724
#1	1.528	.0092	1.224	.3826	.7335	3.480	.0001	.4097	2.315
#2	1.532	.0167	1.218	.3814	.7351	3.472	.0037	.4127	2.323
#3	1.541	.0084	1.223	.3812	.7332	3.483	-.0094	.4095	2.321

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1956.6	6900.2	48423.	5034.8
Stddev	1.6	7.6	41.	35.8
%RSD	.08017	.10956	.08478	.71169
#1	1957.4	6906.4	48471.	5074.9
#2	1954.7	6891.8	48401.	5023.4
#3	1957.5	6902.3	48398.	5006.0

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 14:21:04 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2485	39.68	1.990	2.023	2.033	39.83	2.043	2.031	1.996	2.008
Stddev	.0009	.02	.003	.001	.001	.04	.001	.002	.006	.004
%RSD	.3436	.0596	.1682	.0500	.0399	.1025	.0562	.1130	.2963	.1734
#1	.2479	39.70	1.991	2.024	2.033	39.87	2.043	2.032	1.995	2.005
#2	.2481	39.68	1.987	2.022	2.032	39.82	2.041	2.029	1.991	2.006
#3	.2495	39.65	1.993	2.023	2.034	39.79	2.044	2.033	2.003	2.012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.88	40.31	39.97	2.052	1.996	40.71	2.017	2.022	2.002	2.003
Stddev	.06	.08	.15	.008	.005	.09	.002	.002	.005	.006
%RSD	.1383	.1906	.3825	.4101	.2675	.2268	.1005	.0775	.2409	.2870
#1	40.91	40.32	39.81	2.050	1.996	40.69	2.018	2.023	2.001	1.998
#2	40.91	40.37	40.12	2.045	1.992	40.82	2.015	2.022	1.998	2.002
#3	40.81	40.22	39.98	2.062	2.002	40.64	2.018	2.020	2.007	2.009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.888	1.993	2.058	2.063	2.037	2.002	2.037
Stddev	.004	.002	.002	.005	.004	.004	.003
%RSD	.2037	.0777	.0947	.2244	.1733	.2076	.1555
#1	1.888	1.994	2.056	2.060	2.038	2.001	2.040
#2	1.884	1.991	2.059	2.060	2.034	1.998	2.034
#3	1.892	1.992	2.060	2.068	2.041	2.006	2.036
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 14:21:04 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1796.6	5543.7	39073.	4124.6
Stddev	1.0	2.8	224.	28.4
%RSD	.05452	.05132	.57444	.68914
#1	1797.7	5540.9	39172.	4133.0
#2	1795.7	5546.6	39230.	4092.9
#3	1796.6	5543.5	38816.	4147.8

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 14:25:00 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0072	.0002	.0002	.0002	.0079	.0001	.0002	.0003
Stddev	.0002	.0107	.0012	.0002	.0000	.0025	.0001	.0001	.0003
%RSD	69.43	148.1	673.3	66.79	7.835	31.74	83.20	58.83	88.52
#1	.0001	-.0149	-.0008	.0002	.0002	.0067	.0002	.0002	.0006
#2	.0004	-.0118	.0015	.0004	.0002	.0062	.0001	.0001	.0001
#3	.0003	.0050	-.0002	.0001	.0002	.0108	.0000	.0004	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0255	.0535	.0209	.0003	F.0011	.0563	.0000	F.0011
Stddev	.0002	.0069	.0330	.0299	.0001	.0005	.0137	.000	.0006
%RSD	55.20	26.97	61.69	143.1	33.85	48.10	24.26	3271.	56.77
#1	.0001	.0317	.0294	.0220	.0003	.0017	.0708	.0000	.0007
#2	.0005	.0267	.0912	.0501	.0003	.0011	.0543	-.0001	.0008
#3	.0005	.0181	.0400	-.0095	.0002	.0006	.0437	.0001	.0018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
High Limit						.0010			.0010
Low Limit						-.0010			-.0010

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0012	.0002	.0001	.0002	.0010	.0007	.0003	.0000
Stddev	.0009	.0011	.0000	.0002	.0000	.0002	.0003	.0001	.000
%RSD	308.8	89.99	9.741	233.8	18.46	17.39	52.56	34.83	280.5
#1	-.0004	-.0002	.0002	.0003	.0002	.0012	.0003	.0004	.0000
#2	.0000	-.0024	.0002	.0000	.0003	.0009	.0006	.0002	.0000
#3	.0012	-.0010	.0002	.0000	.0002	.0009	.0010	.0004	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 14:25:00 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2083.9	5793.0	40901.	4186.4
Stddev	9.1	11.1	406.	13.5
%RSD	.43628	.19088	.99322	.32256
#1	2094.4	5804.6	41361.	4179.6
#2	2078.8	5782.6	40749.	4177.6
#3	2078.5	5791.7	40592.	4201.9

Zoom In Zoom Out

Sample Name: FA43341-1 Acquired: 4/26/2017 14:29:14 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0002	1.867	-.0017	2.397	.0000	406.3	.0020	.0004	.0015	.0023
Stddev	.0002	.002	.0004	.006	.000	4.9	.0000	.0000	.0003	.0001
%RSD	131.5	.1242	24.87	.2565	183.4	1.195	1.422	6.696	19.29	4.064
#1	.0004	1.870	-.0022	2.403	.0000	411.5	.0019	.0004	.0014	.0022
#2	-.0001	1.865	-.0015	2.397	.0000	401.8	.0020	.0003	.0013	.0024
#3	.0003	1.866	-.0014	2.390	.0000	405.6	.0019	.0004	.0018	.0023

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	1.729	.1874	15.30	.1561	-.0005	1.920	.0016	.0076	-.0001	-.0017
Stddev	.013	.0148	.11	.0003	.0000	.014	.0001	.0003	.0008	.0007
%RSD	.7349	7.922	.7444	.2114	8.566	.7451	3.385	3.374	715.2	41.45
#1	1.739	.1819	15.43	.1557	-.0005	1.932	.0016	.0076	.0007	-.0017
#2	1.733	.2042	15.25	.1562	-.0005	1.925	.0016	.0073	-.0009	-.0010
#3	1.714	.1761	15.22	.1564	-.0006	1.905	.0015	.0078	-.0002	-.0023

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1625	.0245	.5996	.0504	.0005	.0010	.7840
Stddev	.0003	.0003	.0024	.0002	.0006	.0001	.0020
%RSD	.1612	1.165	.4074	.4099	114.6	13.23	.2492
#1	.1625	.0248	.6016	.0506	.0004	.0009	.7818
#2	.1628	.0243	.6003	.0502	.0000	.0011	.7855
#3	.1623	.0243	.5969	.0503	.0012	.0011	.7849

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1787.3	5350.4	38062.	4146.6
Stddev	.7	5.6	309.	55.0
%RSD	.03928	.10548	.81077	1.3252
#1	1787.4	5353.6	38348.	4084.1
#2	1786.5	5353.8	38103.	4168.7
#3	1787.9	5343.9	37735.	4187.2

Zoom In Zoom Out

Sample Name: FA43341-2 Acquired: 4/26/2017 14:33:32 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	-.0001	.4143	-.0009	.0144	-.0001	189.6	.0006	.0005	.0116	.0073
Stddev	.0002	.0055	.0005	.0002	.0000	.5	.0000	.0001	.0001	.0003
%RSD	133.8	1.324	57.68	1.231	43.40	.2842	2.923	25.04	.9285	3.689
#1	.0001	.4152	-.0004	.0142	-.0001	190.1	.0005	.0003	.0117	.0070
#2	-.0002	.4084	-.0015	.0143	.0000	189.6	.0006	.0005	.0117	.0074
#3	-.0003	.4192	-.0008	.0146	-.0001	189.0	.0006	.0005	.0115	.0074

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	1.444	.0694	.7379	.0241	.0010	.4091	.0058	.0073	.0004	.0004
Stddev	.011	.0169	.0360	.0001	.0002	.0128	.0000	.0004	.0002	.0014
%RSD	.7387	24.35	4.874	.3790	16.35	3.129	.8389	5.089	44.16	355.4
#1	1.456	.0835	.7673	.0242	.0012	.3962	.0057	.0069	.0006	-.0011
#2	1.435	.0507	.7486	.0240	.0011	.4093	.0057	.0077	.0002	.0005
#3	1.442	.0741	.6978	.0241	.0008	.4218	.0058	.0073	.0003	.0018

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0383	.0267	.0332	.0055	.0010	.0020	2.316
Stddev	.0005	.0002	.0002	.0001	.0014	.0004	.005
%RSD	1.402	.8507	.5592	1.919	136.5	21.41	.2012
#1	.0386	.0266	.0330	.0056	-.0006	.0024	2.312
#2	.0387	.0270	.0332	.0054	.0019	.0016	2.315
#3	.0377	.0266	.0334	.0054	.0017	.0019	2.321

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1910.3	5539.4	40005.	4169.3
Stddev	3.2	3.5	36.	36.4
%RSD	.16911	.06294	.09071	.87417
#1	1911.0	5535.6	39996.	4130.3
#2	1913.1	5542.4	39974.	4202.4
#3	1906.8	5540.4	40045.	4175.3

Zoom In Zoom Out

Sample Name: FA43341-3 Acquired: 4/26/2017 14:37:43 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0004	.3511	-.0010	.0283	.0000	166.3	.0005	.0006	.0101	.0101
Stddev	.0004	.0075	.0004	.0002	.0000	.7	.0000	.0001	.0001	.0001
%RSD	101.2	2.126	37.59	.6733	142.0	.4504	4.631	15.10	.7008	.8245
#1	.0000	.3427	-.0007	.0280	.0000	167.2	.0004	.0007	.0101	.0101
#2	.0005	.3570	-.0010	.0283	.0000	166.1	.0005	.0007	.0101	.0101
#3	.0007	.3536	-.0014	.0284	.0000	165.7	.0005	.0005	.0102	.0100

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	1.742	.0989	.6913	.0256	.0007	.3838	.0048	.0077	.0001	.0011
Stddev	.013	.0308	.0146	.0002	.0000	.0020	.0000	.0003	.0005	.0009
%RSD	.7603	31.19	2.110	.6194	7.351	.5332	.4519	4.316	693.3	83.58
#1	1.752	.1301	.6807	.0256	.0006	.3840	.0048	.0078	.0001	.0017
#2	1.727	.0685	.6853	.0255	.0006	.3816	.0048	.0073	.0006	.0000
#3	1.747	.0980	.7080	.0258	.0007	.3857	.0048	.0080	-.0005	.0016

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0468	.0263	.0335	.0100	.0007	.0016	2.134
Stddev	.0001	.0001	.0004	.0001	.0007	.0001	.003
%RSD	.2594	.2592	1.065	1.363	93.21	5.627	.1158
#1	.0469	.0264	.0338	.0101	.0015	.0016	2.131
#2	.0470	.0263	.0331	.0099	.0002	.0016	2.135
#3	.0467	.0263	.0337	.0101	.0005	.0017	2.136

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1908.8	5560.9	39739.	4134.8
Stddev	1.4	4.3	182.	42.8
%RSD	.07076	.07785	.45716	1.0342
#1	1910.1	5565.9	39920.	4109.9
#2	1909.0	5558.5	39742.	4110.2
#3	1907.4	5558.2	39557.	4184.1

Zoom In Zoom Out

Sample Name: FA43341-4 Acquired: 4/26/2017 14:41:52 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0002	.4224	-.0007	.0126	.0000	156.7	.0004	.0003	.0459	.0126
Stddev	.0001	.0099	.0005	.0002	.000	.6	.0000	.0001	.0003	.0003
%RSD	42.36	2.340	76.90	1.782	101.9	.3849	4.829	27.10	.7184	2.564
#1	.0001	.4191	-.0012	.0124	.0000	157.3	.0004	.0003	.0455	.0128
#2	.0002	.4145	-.0004	.0126	-.0001	156.1	.0004	.0004	.0462	.0127
#3	.0001	.4335	-.0003	.0129	.0000	156.8	.0004	.0003	.0459	.0122

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	1.272	.0843	.8882	.0229	.0009	.3518	.0044	.0073	.0010	.0001
Stddev	.005	.0332	.0108	.0001	.0001	.0033	.0001	.0004	.0003	.0004
%RSD	.3640	39.37	1.220	.2944	14.12	.9297	1.591	5.498	33.35	354.4
#1	1.274	.0462	.8994	.0229	.0010	.3555	.0044	.0072	.0007	.0001
#2	1.267	.1001	.8873	.0229	.0008	.3492	.0045	.0069	.0010	.0005
#3	1.276	.1067	.8778	.0228	.0010	.3507	.0043	.0077	.0013	-.0003

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0424	.0263	.0657	.0058	.0012	.0016	2.023
Stddev	.0001	.0001	.0002	.0001	.0014	.0001	.002
%RSD	.3218	.4832	.3223	1.254	112.7	6.109	.0755
#1	.0424	.0263	.0658	.0059	-.0001	.0017	2.022
#2	.0426	.0261	.0655	.0058	.0011	.0016	2.022
#3	.0423	.0264	.0659	.0057	.0026	.0015	2.024

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1928.3	5594.9	39902.	4177.1
Stddev	.7	2.9	183.	44.9
%RSD	.03603	.05110	.45949	1.0745
#1	1928.6	5595.8	39760.	4138.7
#2	1928.8	5591.6	39838.	4226.4
#3	1927.5	5597.1	40109.	4166.3

Zoom In Zoom Out

Sample Name: MP32048-MB1 Acquired: 4/26/2017 14:46:03 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0014	-.0003	.0003	.0000	.0128	-.0001	-.0001	.0000	.0001
Stddev	.0004	.0111	.0003	.0002	.000	.0024	.0001	.0001	.0003	.0002
%RSD	293.9	793.7	130.8	63.89	403.3	18.43	53.18	57.44	918.0	316.1
#1	.0005	.0054	-.0006	.0001	-.0001	.0117	-.0002	-.0002	-.0003	.0001
#2	.0003	.0099	.0001	.0003	.0000	.0156	-.0001	.0000	.0001	-.0001
#3	-.0003	-.0111	-.0002	.0005	.0000	.0113	.0000	-.0001	.0003	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0075	-.0051	-.0074	-.0001	-.0004	.0453	-.0002	.0004	.0007	-.0001
Stddev	.0038	.0095	.0197	.0000	.0001	.0039	.0001	.0004	.0012	.0010
%RSD	50.85	188.1	267.3	24.88	26.87	8.714	48.21	91.61	176.0	998.1
#1	.0075	-.0033	-.0262	-.0001	-.0005	.0477	-.0002	.0002	.0002	-.0013
#2	.0114	.0034	-.0089	-.0001	-.0003	.0475	-.0004	.0002	.0021	.0003
#3	.0037	-.0153	.0131	-.0001	-.0004	.0408	-.0002	.0008	-.0002	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	-.0003	.0000	-.0001	-.0005	.0001	.0005
Stddev	.0003	.0003	.0001	.0001	.0012	.0001	.0001
%RSD	19.42	76.75	351.7	79.82	227.0	102.4	17.15
#1	-.0016	-.0003	.0000	.0000	.0009	.0001	.0006
#2	-.0011	-.0001	.0001	-.0002	-.0012	.0000	.0004
#3	-.0013	-.0006	-.0001	-.0001	-.0013	.0003	.0005
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: MP32048-MB1 Acquired: 4/26/2017 14:46:03 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2090.6	5810.2	41558.	4185.1
Stddev	5.6	18.2	104.	27.4
%RSD	.26654	.31285	.25037	.65503
#1	2089.9	5791.2	41656.	4216.7
#2	2085.5	5811.8	41449.	4167.9
#3	2096.5	5827.5	41569.	4170.6

Zoom In Zoom Out

Sample Name: MP32048-B1 Acquired: 4/26/2017 14:50:22 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0477	27.73	1.962	2.075	.0520	26.07	.0504	.5061	.2050	.2568
Stddev	.0004	.09	.001	.007	.0001	.08	.0001	.0007	.0007	.0007
%RSD	.8560	.3211	.0319	.3427	.2269	.3084	.1072	.1309	.3370	.2884
#1	.0479	27.63	1.962	2.067	.0520	25.99	.0505	.5054	.2055	.2575
#2	.0473	27.77	1.962	2.080	.0519	26.08	.0503	.5065	.2042	.2569
#3	.0481	27.80	1.961	2.078	.0521	26.15	.0504	.5066	.2053	.2560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.17	26.20	25.57	.5221	.5263	26.17	.5087	.4871	.5026	1.967
Stddev	.17	.08	.11	.0018	.0007	.12	.0000	.0004	.0017	.006
%RSD	.6250	.3127	.4216	.3529	.1379	.4706	.0056	.0847	.3439	.3052
#1	26.99	26.11	25.48	.5228	.5265	26.03	.5087	.4874	.5036	1.969
#2	27.18	26.23	25.54	.5200	.5255	26.22	.5088	.4873	.5006	1.960
#3	27.33	26.26	25.69	.5235	.5269	26.26	.5087	.4867	.5036	1.972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	.5174	.5240	.5239	1.979	.4923	.4998
Stddev	.0001	.0009	.0014	.0001	.005	.0020	.0011
%RSD	12.48	.1821	.2664	.0281	.2539	.4031	.2211
#1	-.0008	.5165	.5224	.5241	1.974	.4937	.4986
#2	-.0010	.5173	.5247	.5238	1.979	.4900	.5000
#3	-.0009	.5184	.5249	.5239	1.984	.4931	.5007
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP32048-B1 Acquired: 4/26/2017 14:50:22 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1899.1	5652.2	39619.	4140.3
Stddev	1.1	4.6	259.	29.1
%RSD	.05653	.08216	.65332	.70355
#1	1897.9	5650.0	39612.	4162.1
#2	1899.2	5649.0	39882.	4151.5
#3	1900.0	5657.5	39365.	4107.2

Zoom In Zoom Out

Sample Name: FA43239-1 Acquired: 4/26/2017 14:54:21 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0006	.0171	-.0009	.2135	-.0001	18.59	.0009	.0006	.0009
Stddev	.0003	.0181	.0007	.0009	.0001	.04	.0000	.0001	.0001
%RSD	56.09	106.0	80.72	.4187	90.33	.2416	4.268	12.61	16.23
#1	.0008	.0334	-.0011	.2129	-.0002	18.60	.0009	.0007	.0008
#2	.0002	.0201	-.0015	.2132	.0000	18.54	.0009	.0005	.0009
#3	.0007	-.0024	-.0001	.2145	-.0001	18.63	.0009	.0006	.0011

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.6184	.0714	5.745	.4546	.0221	.0000	F154.0	.0019	2.301
Stddev	.0008	.0058	.023	.0014	.0001	.000	1.4	.0001	.004
%RSD	.1244	8.171	.3971	.3169	.4577	1755.	.9389	5.727	.1795
#1	.6190	.0763	5.728	.4563	.0220	.0001	155.4	.0018	2.298
#2	.6176	.0730	5.735	.4541	.0222	.0000	152.5	.0020	2.300
#3	.6188	.0650	5.771	.4535	.0221	-.0001	154.0	.0019	2.306

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1212	-.0002	.0555	-.0002	.0204	.0012	-.0001	.0001	.3326
Stddev	.0012	.0009	.0030	.0002	.0002	.0001	.0014	.0000	.0007
%RSD	.9597	581.2	5.475	79.45	.8161	10.88	1632.	39.32	.2004
#1	.1199	-.0012	.0550	-.0001	.0203	.0011	.0010	.0001	.3320
#2	.1219	.0006	.0588	-.0001	.0203	.0013	-.0017	.0001	.3326
#3	.1219	.0002	.0528	-.0004	.0206	.0013	.0004	.0001	.3333

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1866.6	5533.5	38753.	4162.6
Stddev	2.6	11.2	200.	21.0
%RSD	.13686	.20150	.51494	.50506
#1	1868.1	5536.6	38874.	4177.1
#2	1867.9	5542.7	38522.	4172.3
#3	1863.6	5521.1	38862.	4138.5

Zoom In Zoom Out

Sample Name: MP32048-D1 Acquired: 4/26/2017 14:58:40 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0004	.0071	.0002	.1972	.0000	17.18	.0008	.0005	.0007
Stddev	.0002	.0054	.0004	.0005	.000	.03	.0001	.0002	.0002
%RSD	55.73	76.95	197.9	.2704	198.7	.1752	8.732	42.48	27.58
#1	.0003	.0042	-.0002	.1970	-.0001	17.15	.0008	.0006	.0007
#2	.0003	.0037	.0002	.1968	.0000	17.18	.0009	.0006	.0009
#3	.0007	.0134	.0006	.1978	.0000	17.21	.0007	.0002	.0005

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.5704	.0625	5.274	.4003	.0204	-.0004	F139.9	.0018	2.118
Stddev	.0010	.0053	.046	.0147	.0000	.0000	1.1	.0002	.008
%RSD	.1670	8.468	.8682	3.672	.1176	2.842	.7884	14.08	.3625
#1	.5701	.0564	5.235	.3852	.0204	-.0004	141.2	.0015	2.125
#2	.5715	.0649	5.324	.4145	.0203	-.0004	139.2	.0020	2.110
#3	.5696	.0662	5.264	.4012	.0204	-.0003	139.3	.0018	2.120

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1125	-.0004	.0571	-.0003	.0189	.0009	-.0011	.0000	.3057
Stddev	.0016	.0003	.0039	.0001	.0001	.0001	.0011	.0002	.0006
%RSD	1.418	64.35	6.883	39.69	.2895	11.72	101.7	868.3	.1804
#1	.1110	-.0001	.0613	-.0002	.0189	.0008	-.0010	-.0002	.3058
#2	.1142	-.0006	.0565	-.0005	.0189	.0010	-.0022	.0003	.3051
#3	.1122	-.0005	.0535	-.0003	.0188	.0010	.0000	.0000	.3062

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1876.9	5550.4	39050.	4176.2
Stddev	10.1	9.6	122.	26.9
%RSD	.53764	.17371	.31339	.64304
#1	1868.3	5542.9	38943.	4145.7
#2	1888.0	5561.3	39183.	4186.6
#3	1874.4	5547.0	39023.	4196.2

Zoom In Zoom Out

Sample Name: MP32048-SD1 Acquired: 4/26/2017 15:02:58 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0001	.0050	.0003	.2224	-.0004	19.35	.0006	.0004	.0015	.6410
Stddev	.0001	.0461	.0036	.0019	.0002	.04	.0001	.0006	.0003	.0008
%RSD	205.6	919.2	1176.	.8394	47.24	.1998	13.17	136.1	18.29	.1309
#1	-.0001	-.0301	.0000	.2241	-.0002	19.40	.0007	.0003	.0013	.6403
#2	.0001	.0573	.0040	.2204	-.0003	19.32	.0006	.0011	.0014	.6409
#3	.0001	-.0121	-.0031	.2228	-.0006	19.33	.0005	-.0001	.0019	.6419

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0767	6.011	.5191	.0230	-.0014	164.3	.0039	2.360	.1305	-.0062
Stddev	.0211	.042	.0860	.0003	.0005	.1	.0004	.003	.0031	.0063
%RSD	27.55	.6978	16.57	1.281	34.36	.0783	9.715	.1330	2.352	101.4
#1	.0539	5.964	.4231	.0227	-.0014	164.3	.0034	2.363	.1301	-.0001
#2	.0804	6.023	.5446	.0229	-.0019	164.2	.0041	2.360	.1337	-.0127
#3	.0957	6.045	.5894	.0233	-.0009	164.5	.0041	2.357	.1276	-.0058

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0549	-.0012	.0205	.0010	-.0002	.0006	.3635
Stddev	.0058	.0010	.0006	.0004	.0018	.0006	.0003
%RSD	10.55	87.80	2.701	42.34	713.0	117.9	.0820
#1	.0490	-.0006	.0206	.0010	.0017	.0011	.3638
#2	.0553	-.0024	.0199	.0013	-.0017	-.0002	.3632
#3	.0606	-.0006	.0210	.0005	-.0007	.0008	.3636

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	2001.4	5712.8	40333.	4201.3
Stddev	2.3	5.6	254.	31.3
%RSD	.11498	.09741	.62884	.74581
#1	1999.9	5719.2	40611.	4224.2
#2	2004.1	5708.8	40272.	4214.1
#3	2000.3	5710.6	40114.	4165.6

Zoom In Zoom Out

Sample Name: MP32048-S1 Acquired: 4/26/2017 15:07:11 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0476	27.47	1.999	2.252	.0511	42.71	.0508	.4978	.2026
Stddev	.0004	.01	.001	.003	.0001	.05	.0002	.0010	.0006
%RSD	.9365	.0493	.0457	.1239	.2850	.1287	.4185	.1956	.2829
#1	.0479	27.46	1.998	2.255	.0512	42.66	.0506	.4970	.2032
#2	.0478	27.47	1.999	2.253	.0513	42.77	.0508	.4975	.2022
#3	.0471	27.49	1.999	2.249	.0510	42.69	.0510	.4989	.2023

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.8193	26.73	31.24	25.30	.5313	.5205	F162.5	.5030	2.635
Stddev	.0006	.04	.02	.09	.0012	.0008	3.3	.0006	.010
%RSD	.0674	.1480	.0685	.3717	.2261	.1475	2.037	.1160	.3721
#1	.8187	26.76	31.22	25.21	.5326	.5197	162.4	.5024	2.626
#2	.8197	26.76	31.26	25.28	.5310	.5204	165.8	.5029	2.632
#3	.8196	26.69	31.24	25.40	.5302	.5213	159.2	.5036	2.645

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.6205	2.020	.0485	.5072	.5310	.5144	1.953	.4890	.7955
Stddev	.0007	.003	.0024	.0006	.0014	.0006	.004	.0020	.0031
%RSD	.1093	.1704	5.000	.1200	.2613	.1207	.2083	.4052	.3951
#1	.6206	2.023	.0465	.5066	.5316	.5151	1.953	.4907	.7929
#2	.6197	2.022	.0479	.5071	.5321	.5141	1.950	.4868	.7947
#3	.6210	2.016	.0512	.5078	.5295	.5139	1.958	.4895	.7990

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1794.2	5505.1	38919.	4189.1
Stddev	6.9	13.0	189.	21.8
%RSD	.38440	.23666	.48435	.52116
#1	1802.1	5519.9	38702.	4212.6
#2	1791.0	5500.0	39038.	4185.5
#3	1789.6	5495.3	39017.	4169.4

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 15:11:18 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2489	40.11	2.007	2.037	2.041	40.19	2.055	2.043	2.012	2.011
Stddev	.0007	.05	.002	.003	.002	.01	.002	.001	.005	.003
%RSD	.2675	.1207	.0800	.1249	.1031	.0281	.1025	.0667	.2312	.1257
#1	.2496	40.08	2.006	2.037	2.041	40.19	2.058	2.044	2.016	2.012
#2	.2488	40.09	2.006	2.040	2.044	40.18	2.054	2.042	2.007	2.008
#3	.2482	40.17	2.009	2.035	2.040	40.20	2.055	2.044	2.014	2.012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.98	40.72	40.23	2.059	2.009	40.47	2.029	2.026	2.010	2.017
Stddev	.03	.08	.19	.009	.002	.09	.001	.003	.004	.005
%RSD	.0722	.1873	.4638	.4417	.1117	.2254	.0508	.1538	.1786	.2359
#1	40.98	40.75	40.23	2.069	2.008	40.40	2.029	2.022	2.006	2.019
#2	41.01	40.77	40.41	2.051	2.009	40.57	2.027	2.027	2.012	2.012
#3	40.96	40.63	40.04	2.059	2.012	40.45	2.029	2.028	2.013	2.021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.899	2.009	2.070	2.067	2.051	2.013	2.049
Stddev	.001	.003	.005	.006	.004	.004	.003
%RSD	.0627	.1234	.2312	.2829	.1976	.1761	.1452
#1	1.897	2.011	2.068	2.073	2.046	2.016	2.052
#2	1.900	2.007	2.075	2.061	2.052	2.009	2.047
#3	1.899	2.008	2.067	2.067	2.053	2.014	2.049
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 15:11:18 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1787.7	5510.8	38971.	4095.7
Stddev	3.0	8.9	204.	17.0
%RSD	.16577	.16229	.52455	.41461
#1	1789.6	5504.1	38776.	4106.8
#2	1789.2	5520.9	39184.	4076.1
#3	1784.3	5507.3	38955.	4104.0

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 15:15:14 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0058	.0005	.0000	.0001	-.0023	.0001	.0001	.0000
Stddev	.0003	.0058	.0005	.0000	.0001	.0004	.0000	.0001	.0000
%RSD	101.4	46.37	1063.	2.173	92.51	19.45	46.26	46.04	19.29
#1	.0001	-.0169	-.0004	.0004	.0002	-.0026	.0001	.0002	.0003
#2	.0002	-.0147	.0005	.0004	.0000	-.0018	.0001	.0002	.0003
#3	.0007	-.0059	.0001	.0005	.0000	-.0025	.0000	.0001	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0226	.0243	-.0062	.0002	F.0012	.0784	.0000	.0002
Stddev	.0002	.0041	.0235	.0139	.0000	.0004	.0096	.0001	.0007
%RSD	32.33	18.06	96.66	222.3	25.61	29.35	12.23	317.7	311.9
#1	.0008	.0264	.0137	-.0159	.0001	.0017	.0699	.0002	-.0005
#2	.0004	.0232	.0512	.0097	.0001	.0011	.0888	.0000	.0010
#3	.0006	.0183	.0080	-.0125	.0002	.0010	.0766	.0000	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	.0003	.0000	-.0001	.0001	.0011	.0008	.0002	-.0001
Stddev	.0008	.0018	.0000	.0001	.0001	.0001	.0006	.0003	.0001
%RSD	134.3	550.9	133.3	96.81	116.8	5.332	77.08	152.2	93.43
#1	.0001	.0012	.0000	-.0002	.0001	.0012	.0015	.0000	.0000
#2	-.0005	.0016	.0001	-.0001	.0000	.0011	.0004	.0005	-.0001
#3	-.0014	-.0017	.0000	.0000	.0002	.0010	.0005	.0001	-.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 15:15:14 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2070.1	5788.7	40700.	4103.6
Stddev	1.3	7.3	228.	28.7
%RSD	.06409	.12619	.55970	.69999
#1	2070.7	5784.8	40534.	4071.5
#2	2068.6	5797.2	40606.	4126.9
#3	2071.0	5784.2	40960.	4112.2

Zoom In Zoom Out

Sample Name: MP32048-S2 Acquired: 4/26/2017 15:19:30 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0476	27.55	2.006	2.262	.0511	43.03	.0509	.4987	.2021
Stddev	.0006	.10	.004	.007	.0003	.14	.0002	.0011	.0003
%RSD	1.298	.3561	.2223	.2908	.5495	.3159	.4815	.2172	.1468
#1	.0471	27.54	2.002	2.264	.0508	42.96	.0506	.4975	.2023
#2	.0483	27.65	2.006	2.266	.0513	43.19	.0509	.4989	.2017
#3	.0473	27.45	2.011	2.254	.0512	42.94	.0511	.4996	.2021

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.8305	26.85	31.45	25.34	.5301	.5224	F166.6	.5033	2.671
Stddev	.0041	.08	.18	.15	.0019	.0009	1.7	.0007	.007
%RSD	.4890	.2893	.5722	.5747	.3581	.1701	.9957	.1356	.2682
#1	.8276	26.83	31.38	25.22	.5319	.5220	165.9	.5025	2.665
#2	.8288	26.93	31.66	25.50	.5281	.5218	168.5	.5039	2.669
#3	.8352	26.77	31.32	25.29	.5303	.5234	165.3	.5035	2.679

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.6226	2.025	.0508	.5087	.5326	.5145	1.959	.4883	.8006
Stddev	.0026	.004	.0021	.0011	.0016	.0011	.004	.0015	.0016
%RSD	.4190	.2142	4.097	.2104	.2979	.2080	.1979	.3163	.2002
#1	.6198	2.021	.0528	.5076	.5326	.5156	1.955	.4888	.7988
#2	.6229	2.025	.0487	.5098	.5342	.5134	1.960	.4866	.8018
#3	.6250	2.029	.0508	.5086	.5310	.5144	1.963	.4895	.8013

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1794.0	5502.4	38987.	4195.0
Stddev	3.5	15.5	158.	31.9
%RSD	.19687	.28228	.40640	.75963
#1	1796.9	5516.9	38833.	4228.8
#2	1790.1	5486.0	38979.	4165.5
#3	1795.1	5504.3	39150.	4190.8

Zoom In Zoom Out

Sample Name: FA43241-1 Acquired: 4/26/2017 15:23:38 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0000	.0199	-.0016	.4701	-.0001	197.8	-.0003	-.0001	.0115
Stddev	.000	.0028	.0003	.0009	.0000	.6	.0000	.0002	.0003
%RSD	858.9	14.17	19.31	.1942	42.30	.3276	5.274	170.1	2.291
#1	-.0002	.0195	-.0016	.4712	-.0001	198.6	-.0003	-.0001	.0115
#2	-.0003	.0173	-.0013	.4696	-.0001	197.4	-.0003	.0001	.0112
#3	.0004	.0229	-.0019	.4695	-.0001	197.5	-.0003	-.0003	.0117

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0228	.0119	29.96	.0133	.0000	.0149	F88.22	-.0002	.0047
Stddev	.0001	.0013	.14	.0126	.000	.0000	.21	.0001	.0004
%RSD	.4749	11.34	.4543	94.35	805.4	.1138	.2337	33.00	7.990
#1	.0227	.0130	30.11	.0147	-.0001	.0149	88.45	-.0002	.0043
#2	.0229	.0122	29.90	.0251	.0000	.0149	88.18	-.0003	.0048
#3	.0228	.0104	29.86	.0001	.0000	.0149	88.04	-.0001	.0051

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0006	.0013	.0403	-.0004	.4583	.0013	.0002	.0004	.0155
Stddev	.0007	.0014	.0030	.0003	.0018	.0000	.0009	.0002	.0001
%RSD	120.8	107.6	7.374	69.15	.3916	3.473	469.9	45.78	.6596
#1	-.0001	.0005	.0406	-.0007	.4599	.0013	.0004	.0002	.0154
#2	.0014	.0005	.0372	-.0001	.4564	.0013	.0010	.0004	.0156
#3	.0005	.0030	.0431	-.0005	.4588	.0014	-.0008	.0005	.0156

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1802.3	5380.4	37848.	4043.9
Stddev	2.6	8.9	115.	14.5
%RSD	.14197	.16591	.30340	.35897
#1	1801.8	5384.3	37974.	4028.6
#2	1805.0	5386.8	37820.	4045.7
#3	1800.0	5370.2	37750.	4057.4

Zoom In Zoom Out

Sample Name: FA43241-2 Acquired: 4/26/2017 15:27:52 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0002	.0107	-.0014	.4535	-.0001	163.8	-.0003	-.0002	.0107
Stddev	.0004	.0008	.0004	.0014	.0000	.4	.0000	.0002	.0001
%RSD	191.3	7.518	27.31	.3136	63.07	.2309	14.86	69.45	.6205
#1	-.0002	.0102	-.0011	.4518	-.0001	163.7	-.0003	-.0001	.0108
#2	.0006	.0117	-.0018	.4543	-.0001	163.6	-.0003	-.0004	.0108
#3	.0003	.0103	-.0012	.4543	.0000	164.3	-.0003	-.0002	.0107

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0083	.0418	26.10	.0022	.0001	.0124	F84.55	-.0004	.0057
Stddev	.0002	.0022	.04	.0153	.0000	.0001	.28	.0001	.0003
%RSD	2.985	5.347	.1407	694.1	34.59	.5321	.3255	26.18	4.872
#1	.0080	.0432	26.14	-.0145	.0001	.0124	84.71	-.0004	.0054
#2	.0083	.0430	26.06	.0154	.0001	.0124	84.70	-.0004	.0057
#3	.0085	.0392	26.11	.0058	.0002	.0123	84.23	-.0002	.0059

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0005	-.0001	.0243	-.0004	.4260	.0012	-.0007	.0001	.0087
Stddev	.0008	.0018	.0007	.0001	.0005	.0001	.0007	.0001	.0001
%RSD	165.8	1588.	2.920	28.78	.1164	6.038	109.9	89.74	1.235
#1	.0013	-.0011	.0243	-.0003	.4255	.0013	-.0014	.0002	.0086
#2	.0004	.0019	.0236	-.0003	.4259	.0012	-.0006	.0001	.0086
#3	-.0003	-.0012	.0251	-.0005	.4265	.0012	.0000	.0001	.0088

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1818.0	5400.8	37988.	4072.8
Stddev	3.2	1.0	140.	7.1
%RSD	.17414	.01815	.36932	.17375
#1	1819.8	5400.3	38139.	4073.6
#2	1814.3	5400.1	37962.	4079.4
#3	1819.7	5401.9	37862.	4065.3

Zoom In Zoom Out

Sample Name: FA43275-6 Acquired: 4/26/2017 15:32:07 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0004	.0466	-.0010	.0175	-.0001	37.75	-.0001	.0000	.0004
Stddev	.0003	.0078	.0008	.0002	.0001	.10	.0000	.0001	.0001
%RSD	63.38	16.81	73.48	.9863	178.9	.2597	20.60	702.4	16.66
#1	.0001	.0381	-.0002	.0173	.0000	37.67	-.0001	.0001	.0004
#2	.0005	.0535	-.0014	.0177	.0000	37.86	-.0001	.0000	.0004
#3	.0005	.0484	-.0015	.0174	-.0002	37.71	-.0001	-.0001	.0003

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)
Avg	.0007	.0326	.1956	.1827	.0073	-.0007	F129.4	-.0002	.0094
Stddev	.0002	.0031	.0115	.0157	.0000	.0002	.5	.0001	.0005
%RSD	26.72	9.624	5.855	8.610	.5721	27.68	.3622	48.63	5.714
#1	.0010	.0362	.1828	.1943	.0073	-.0006	129.7	-.0004	.0088
#2	.0006	.0313	.1992	.1891	.0073	-.0005	129.6	-.0002	.0095
#3	.0007	.0304	.2048	.1648	.0072	-.0009	128.8	-.0002	.0098

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	.0005	-.0002	.1213	-.0003	.3036	.0021	-.0004	.0004	.0188
Stddev	.0007	.0008	.0012	.0000	.0003	.0001	.0005	.0002	.0000
%RSD	137.1	479.8	.9538	13.79	.0842	3.406	127.0	39.56	.0602
#1	-.0003	-.0005	.1227	-.0003	.3036	.0021	-.0008	.0006	.0188
#2	.0012	.0007	.1205	-.0003	.3033	.0020	-.0007	.0003	.0188
#3	.0007	-.0007	.1208	-.0003	.3039	.0021	.0002	.0003	.0188

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	1867.5	5506.3	38670.	4111.6
Stddev	4.2	4.1	162.	21.4
%RSD	.22223	.07401	.41843	.52062
#1	1863.9	5509.6	38730.	4127.7
#2	1872.0	5507.6	38794.	4087.3
#3	1866.7	5501.7	38487.	4119.7

Zoom In Zoom Out

Sample Name: FA43314-1 Acquired: 4/26/2017 15:36:21 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	-.0001	.0126	-.0023	F4.478	-.0001	245.3	-.0004	-.0002	.0018
Stddev	.0003	.0209	.0002	.012	.0000	.1	.0000	.0001	.0005
%RSD	387.3	166.2	10.16	.2659	39.59	.0311	3.895	52.29	27.48
#1	.0002	.0142	-.0026	4.482	.0000	245.4	-.0004	-.0003	.0019
#2	.0000	.0327	-.0023	4.465	-.0001	245.2	-.0004	-.0002	.0022
#3	-.0005	-.0091	-.0021	4.488	-.0001	245.3	-.0004	-.0001	.0012

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)
Avg	.0002	.0002	24.03	-.0055	-.0001	.0024	26.41	-.0004	.0044
Stddev	.0003	.0023	.10	.0143	.0000	.0000	.07	.0002	.0003
%RSD	160.1	902.6	.3986	261.8	34.76	1.919	.2659	45.81	6.212
#1	.0006	-.0022	24.14	-.0107	-.0001	.0024	26.49	-.0004	.0047
#2	.0002	.0009	23.99	.0107	-.0001	.0024	26.40	-.0005	.0041
#3	-.0001	.0021	23.96	-.0164	-.0001	.0024	26.35	-.0002	.0045

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	-.0001	-.0021	.0332	-.0004	.5400	.0007	-.0005	-.0001	.0019
Stddev	.0013	.0017	.0020	.0002	.0012	.0001	.0005	.0002	.0001
%RSD	1292.	80.48	6.053	42.47	.2307	18.60	102.5	287.2	6.033
#1	-.0015	-.0014	.0318	-.0002	.5408	.0006	-.0010	-.0003	.0021
#2	.0010	-.0008	.0355	-.0004	.5385	.0008	.0000	.0001	.0018
#3	.0001	-.0040	.0322	-.0006	.5406	.0009	-.0005	-.0001	.0019

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	1816.0	5335.5	38359.	4094.2
Stddev	2.6	8.0	262.	28.9
%RSD	.14162	.14954	.68217	.70631
#1	1816.9	5340.9	38514.	4064.2
#2	1813.1	5326.4	38506.	4096.5
#3	1818.0	5339.3	38057.	4121.9

Zoom In Zoom Out

Sample Name: FA43314-2 Acquired: 4/26/2017 15:40:36 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0003	-.0064	-.0018	.6154	-.0001	256.7	-.0004	-.0001	.0001	.0002
Stddev	.0002	.0073	.0006	.0009	.0000	.5	.0000	.0001	.0002	.0001
%RSD	80.88	113.8	35.07	.1448	43.82	.1986	4.418	133.7	141.5	52.78
#1	.0004	-.0126	-.0022	.6161	-.0001	256.7	-.0004	.0000	.0003	.0004
#2	.0004	-.0083	-.0011	.6144	-.0001	257.3	-.0004	-.0001	-.0001	.0002
#3	.0000	.0016	-.0020	.6157	-.0001	256.3	-.0004	-.0001	.0002	.0001

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	.0022	13.35	.0064	.0000	.0384	55.00	-.0003	.0043	-.0009	.0011
Stddev	.0023	.09	.0146	.000	.0002	.08	.0001	.0003	.0013	.0006
%RSD	105.6	.6525	226.9	84.67	.5888	.1446	34.14	6.440	140.0	57.47
#1	.0046	13.43	-.0089	.0000	.0386	54.97	-.0002	.0041	-.0014	.0012
#2	.0000	13.35	.0081	-.0001	.0385	55.09	-.0002	.0046	.0005	.0004
#3	.0020	13.26	.0201	.0000	.0381	54.93	-.0004	.0041	-.0019	.0017

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	.0383	-.0005	.7714	.0006	-.0007	.0034	.0002
Stddev	.0016	.0002	.0011	.0001	.0014	.0001	.0000
%RSD	4.105	46.88	.1392	11.36	202.5	4.166	23.72
#1	.0372	-.0005	.7704	.0006	-.0020	.0033	.0001
#2	.0376	-.0002	.7712	.0007	-.0008	.0033	.0002
#3	.0401	-.0007	.7725	.0006	.0008	.0035	.0002

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	1815.4	5353.5	38136.	4099.5
Stddev	1.4	1.4	124.	22.8
%RSD	.07564	.02667	.32636	.55495
#1	1813.9	5352.0	37999.	4081.8
#2	1815.9	5353.7	38165.	4091.6
#3	1816.5	5354.9	38243.	4125.2

Zoom In Zoom Out

Sample Name: FA43676-1A Acquired: 4/26/2017 15:44:51 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0002	.0831	-.0005	.0351	-.0001	5.560	.0006	.0053	.0223
Stddev	.0002	.0057	.0003	.0004	.0001	.014	.0001	.0002	.0003
%RSD	87.30	6.897	51.33	1.120	78.57	.2458	15.96	3.187	1.452
#1	.0000	.0805	-.0004	.0353	.0000	5.573	.0005	.0051	.0225
#2	.0003	.0790	-.0003	.0347	-.0001	5.561	.0007	.0054	.0220
#3	.0003	.0896	-.0008	.0354	-.0002	5.546	.0006	.0054	.0225

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)
Avg	.0074	28.49	.3556	.1540	.3053	.0004	F147.6	.0519	.2359
Stddev	.0003	.08	.0147	.0179	.0009	.0001	2.8	.0003	.0020
%RSD	4.097	.2658	4.137	11.59	.2808	18.64	1.913	.5688	.8422
#1	.0071	28.53	.3491	.1680	.3052	.0004	150.5	.0517	.2336
#2	.0077	28.54	.3452	.1339	.3063	.0004	147.5	.0519	.2370
#3	.0073	28.40	.3724	.1602	.3046	.0003	144.9	.0522	.2371

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	.0042	.0000	.1393	.0041	.0084	.0004	-.0003	.0010	.5644
Stddev	.0008	.002	.0010	.0003	.0000	.0000	.0008	.0002	.0015
%RSD	20.17	11200.	.7410	7.540	.2594	8.220	326.4	15.78	.2691
#1	.0050	-.0020	.1395	.0039	.0083	.0005	.0007	.0011	.5636
#2	.0033	.0024	.1402	.0044	.0084	.0004	-.0006	.0008	.5635
#3	.0043	-.0004	.1382	.0039	.0084	.0004	-.0009	.0009	.5662

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	1881.3	5504.0	39139.	4191.7
Stddev	7.1	11.2	109.	20.0
%RSD	.37757	.20284	.27958	.47801
#1	1886.3	5504.6	39241.	4169.1
#2	1884.4	5514.9	39024.	4207.4
#3	1873.1	5492.6	39152.	4198.7

Zoom In Zoom Out

Sample Name: FA43676-3A Acquired: 4/26/2017 15:49:10 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0005	.0033	.0000	.1565	-.0001	21.18	.5096	.0680	.0096
Stddev	.0002	.0043	.0010	.0009	.0001	.05	.0003	.0004	.0001
%RSD	39.92	129.9	362400.	.6030	99.63	.2409	.0587	.5314	1.143
#1	.0005	.0082	-.0002	.1574	-.0001	21.14	.5096	.0678	.0098
#2	.0003	.0013	.0011	.1555	-.0001	21.24	.5094	.0677	.0096
#3	.0006	.0004	-.0009	.1566	.0000	21.17	.5099	.0684	.0096

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0023	37.85	.6151	.8948	.5398	.0002	F150.1	.1922	-.0004
Stddev	.0001	.02	.0123	.0300	.0004	.0003	1.7	.0003	.0006
%RSD	3.319	.0589	2.003	3.353	.0749	135.0	1.145	.1688	135.8
#1	.0022	37.85	.6056	.8611	.5393	.0003	148.9	.1924	-.0005
#2	.0023	37.88	.6290	.9185	.5400	.0004	152.1	.1924	.0002
#3	.0024	37.83	.6107	.9049	.5401	-.0001	149.4	.1918	-.0010

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0007	.0009	.6167	.0000	.1505	.0011	.0000	.0005	F29.10
Stddev	.0009	.0017	.0018	.000	.0001	.0001	.0003	.0004	.07
%RSD	120.1	189.4	.2884	640.1	.0743	7.448	816.9	85.85	.2332
#1	.0007	.0001	.6187	.0001	.1506	.0010	.0002	.0000	29.04
#2	.0015	.0029	.6158	-.0002	.1504	.0012	-.0004	.0006	29.18
#3	-.0002	-.0003	.6155	.0000	.1505	.0011	.0002	.0008	29.08

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1856.9	5525.9	38731.	4107.0
Stddev	3.8	2.3	68.	32.7
%RSD	.20398	.04247	.17549	.79616
#1	1855.2	5528.1	38682.	4140.0
#2	1854.3	5523.4	38809.	4074.6
#3	1861.3	5526.3	38702.	4106.3

Zoom In Zoom Out

Sample Name: MP32048-D2 Acquired: 4/26/2017 15:53:38 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0004	.0151	-.0024	.4471	.0000	188.2	-.0003	-.0002	.0112
Stddev	.0001	.0027	.0001	.0018	.000	.4	.0001	.0001	.0003
%RSD	25.28	17.81	4.274	.3984	50.93	.2071	21.12	43.15	2.814
#1	.0004	.0142	-.0024	.4451	-.0001	187.8	-.0004	-.0001	.0116
#2	.0003	.0182	-.0023	.4483	.0000	188.6	-.0003	-.0003	.0110
#3	.0005	.0130	-.0025	.4481	.0000	188.3	-.0003	-.0002	.0111

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0241	.0147	28.80	.0096	.0000	.0137	F83.34	-.0003	.0042
Stddev	.0003	.0052	.02	.0050	.0000	.0001	.24	.0001	.0004
%RSD	1.299	35.60	.0668	51.63	552.6	.9573	.2856	33.57	8.932
#1	.0243	.0182	28.81	.0143	.0000	.0137	83.20	-.0002	.0039
#2	.0237	.0087	28.81	.0044	.0000	.0136	83.61	-.0003	.0046
#3	.0242	.0172	28.78	.0102	.0000	.0138	83.20	-.0004	.0040

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0006	-.0002	.0199	-.0005	.4341	.0009	-.0007	.0003	.0251
Stddev	.0007	.0018	.0012	.0001	.0006	.0000	.0003	.0001	.0001
%RSD	116.3	897.4	6.147	11.20	.1327	2.905	46.40	36.89	.5896
#1	-.0014	-.0006	.0188	-.0005	.4338	.0009	-.0007	.0004	.0250
#2	.0000	-.0018	.0198	-.0006	.4347	.0009	-.0010	.0002	.0253
#3	-.0005	.0018	.0212	-.0005	.4337	.0009	-.0004	.0002	.0251

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1809.7	5375.3	37905.	4049.2
Stddev	1.6	9.2	105.	29.1
%RSD	.09066	.17191	.27593	.71917
#1	1810.8	5381.1	37785.	4054.9
#2	1810.5	5380.2	37959.	4017.7
#3	1807.8	5364.7	37972.	4075.1

Zoom In Zoom Out

Sample Name: MP32048-D3 Acquired: 4/26/2017 15:57:50 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0004	.0730	-.0003	.0288	-.0001	5.440	.0006	.0055	.0222
Stddev	.0002	.0082	.0005	.0001	.0001	.009	.0000	.0000	.0001
%RSD	53.18	11.17	134.3	.2983	112.4	.1577	2.366	.5515	.5647
#1	.0006	.0707	-.0001	.0287	-.0002	5.439	.0006	.0055	.0223
#2	.0002	.0821	-.0001	.0289	-.0001	5.431	.0006	.0055	.0220
#3	.0006	.0663	-.0009	.0288	.0000	5.448	.0006	.0055	.0222

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0077	29.08	.3093	.1314	.3111	.0006	F150.8	.0520	.2578
Stddev	.0003	.05	.0249	.0095	.0002	.0001	.9	.0001	.0016
%RSD	3.375	.1736	8.057	7.243	.0556	22.13	.5927	.2680	.6338
#1	.0076	29.03	.3364	.1212	.3113	.0005	151.6	.0521	.2560
#2	.0075	29.09	.3044	.1327	.3111	.0008	151.0	.0519	.2584
#3	.0080	29.12	.2872	.1401	.3110	.0005	149.9	.0522	.2591

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0035	.0003	.1346	.0041	.0083	.0003	-.0003	.0008	.5683
Stddev	.0005	.0005	.0003	.0002	.0001	.0001	.0003	.0001	.0020
%RSD	13.42	169.2	.1884	3.863	1.374	50.83	107.3	15.15	.3469
#1	.0039	.0000	.1349	.0041	.0082	.0003	-.0007	.0009	.5663
#2	.0036	.0001	.1346	.0042	.0084	.0004	-.0001	.0007	.5683
#3	.0030	.0009	.1344	.0039	.0084	.0001	-.0001	.0007	.5703

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1876.8	5528.3	38838.	4146.0
Stddev	5.0	12.5	35.	20.6
%RSD	.26425	.22528	.09015	.49662
#1	1881.8	5540.2	38805.	4124.8
#2	1876.5	5529.4	38833.	4147.3
#3	1871.9	5515.4	38875.	4165.9

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 16:02:08 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2491	39.98	1.992	2.041	2.030	40.01	2.043	2.034	2.005	2.003
Stddev	.0010	.02	.004	.004	.002	.05	.001	.001	.004	.003
%RSD	.3988	.0453	.1866	.2212	.0760	.1168	.0269	.0225	.1813	.1557
#1	.2501	39.98	1.988	2.040	2.032	40.03	2.044	2.033	2.001	2.006
#2	.2481	39.96	1.994	2.038	2.029	39.96	2.044	2.034	2.007	2.003
#3	.2490	40.00	1.994	2.046	2.029	40.05	2.043	2.034	2.008	2.000
Check ?	Chk	Pass	Chk	Pass	Chk	Pass	Chk	Pass	Chk	Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.87	40.58	40.11	2.058	2.001	40.26	2.022	2.017	2.003	2.005
Stddev	.09	.10	.15	.002	.004	.12	.001	.002	.005	.004
%RSD	.2232	.2499	.3631	.1053	.1759	.2896	.0510	.1028	.2614	.1984
#1	40.79	40.68	40.20	2.056	1.999	40.31	2.021	2.020	1.997	2.000
#2	40.85	40.47	39.94	2.060	2.000	40.13	2.023	2.015	2.003	2.006
#3	40.97	40.59	40.20	2.057	2.005	40.34	2.021	2.017	2.007	2.007
Check ?	Chk	Pass	Chk	Pass	Chk	Pass	Chk	Pass	Chk	Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.886	1.997	2.065	2.064	2.040	2.006	2.037
Stddev	.002	.002	.001	.002	.004	.001	.003
%RSD	.1023	.1081	.0290	.0837	.2172	.0313	.1320
#1	1.885	1.996	2.065	2.063	2.044	2.005	2.038
#2	1.885	1.996	2.065	2.066	2.036	2.006	2.039
#3	1.888	2.000	2.066	2.062	2.039	2.006	2.034
Check ?	None	Chk	Pass	Chk	Pass	Chk	Pass
Value							
Range							

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 16:02:08 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1790.1	5521.1	38924.	4084.2
Stddev	1.7	2.8	137.	18.3
%RSD	.09274	.05050	.35175	.44863
#1	1790.1	5519.7	39082.	4083.3
#2	1788.5	5519.2	38834.	4102.9
#3	1791.8	5524.3	38857.	4066.3

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 16:06:03 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0120	-.0002	.0004	.0002	-.0013	.0001	.0001	.0002
Stddev	.0002	.0092	.0004	.0003	.0000	.0043	.0001	.0001	.0003
%RSD	57.89	77.17	179.7	73.93	17.04	333.0	127.2	87.28	163.7
#1	.0003	-.0137	-.0006	.0001	.0002	.0018	.0001	.0002	.0006
#2	.0002	-.0202	-.0001	.0006	.0002	.0005	.0000	.0001	.0000
#3	.0007	-.0020	.0001	.0004	.0002	-.0062	.0001	.0000	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0252	.0335	.0106	.0001	F.0013	.0877	.0001	.0004
Stddev	.0001	.0029	.0083	.0224	.0000	.0005	.0059	.0001	.0005
%RSD	22.51	11.63	24.92	210.7	11.18	35.40	6.685	131.6	131.3
#1	.0006	.0266	.0403	-.0148	.0001	.0019	.0858	.0002	.0010
#2	.0004	.0272	.0359	.0194	.0001	.0012	.0943	.0001	.0001
#3	.0007	.0218	.0242	.0272	.0001	.0009	.0831	.0000	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0018	.0001	.0001	.0002	.0009	.0001	.0003	.0000
Stddev	.0003	.0008	.0002	.0001	.0000	.0001	.0012	.0001	.000
%RSD	35.63	41.82	298.2	149.3	20.10	12.47	1254.	37.59	584.6
#1	.0010	.0027	.0003	.0000	.0003	.0010	.0013	.0004	.0000
#2	.0012	.0017	.0001	.0003	.0002	.0010	.0001	.0002	-.0001
#3	.0006	.0012	-.0002	.0000	.0002	.0008	-.0011	.0003	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 16:06:03 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2072.0	5767.9	40667.	4103.9
Stddev	6.1	25.7	222.	27.0
%RSD	.29655	.44623	.54529	.65798
#1	2074.9	5777.2	40923.	4096.8
#2	2076.1	5787.6	40533.	4081.1
#3	2064.9	5738.8	40545.	4133.7

Zoom In Zoom Out

Sample Name: MP32048-MB2 Acquired: 4/26/2017 16:10:18 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0079	-.0011	.0022	-.0001	.0662	-.0001	-.0001	.0004
Stddev	.0004	.0060	.0001	.0003	.0000	.0053	.0000	.0001	.0003
%RSD	81.00	76.51	5.094	13.70	51.88	8.063	28.79	89.18	72.69
#1	.0008	-.0054	-.0011	.0024	.0000	.0694	-.0001	.0000	.0007
#2	.0004	-.0035	-.0012	.0019	-.0001	.0692	-.0001	-.0001	.0005
#3	.0001	-.0147	-.0011	.0023	-.0001	.0601	-.0001	-.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	.0086	.1079	.0297	.0001	.0000	F148.3	-.0003	.0005
Stddev	.0003	.0020	.0143	.0050	.0000	.000	2.1	.0001	.0005
%RSD	24.73	23.92	13.21	16.74	87.74	214.3	1.417	28.42	83.98
#1	.0015	.0063	.0967	.0266	.0000	.0000	150.7	-.0002	.0010
#2	.0009	.0102	.1032	.0271	.0001	.0000	147.6	-.0003	.0006
#3	.0014	.0092	.1239	.0355	.0000	-.0001	146.7	-.0002	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							2.500		
Low Limit							-2.500		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	-.0006	.0035	.0000	.0002	.0001	-.0012	.0001	.0018
Stddev	.0007	.0009	.0003	.0000	.0000	.0002	.0002	.0002	.0000
%RSD	137.0	153.3	9.451	175.1	21.32	291.4	16.31	396.0	.4234
#1	.0002	.0004	.0039	.0000	.0002	.0002	-.0013	.0003	.0018
#2	.0013	-.0013	.0032	.0000	.0002	.0002	-.0013	-.0002	.0018
#3	.0000	-.0009	.0035	.0000	.0001	-.0001	-.0010	.0001	.0018
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP32048-MB2 Acquired: 4/26/2017 16:10:18 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1880.0	5518.6	38541.	4155.1
Stddev	1.7	13.0	283.	38.6
%RSD	.08966	.23625	.73450	.92816
#1	1879.0	5510.2	38604.	4110.7
#2	1881.9	5533.6	38231.	4180.7
#3	1879.1	5512.0	38787.	4173.8

Zoom In Zoom Out

Sample Name: MP32048-B2 Acquired: 4/26/2017 16:14:43 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0483	27.58	2.005	2.081	.0515	25.91	.0504	.5030	.2045
Stddev	.0005	.08	.004	.006	.0003	.08	.0001	.0007	.0001
%RSD	1.082	.2859	.2138	.2753	.6422	.3255	.1611	.1387	.0729
#1	.0478	27.49	2.002	2.077	.0516	25.83	.0505	.5026	.2043
#2	.0483	27.65	2.002	2.078	.0517	26.00	.0505	.5026	.2046
#3	.0488	27.60	2.009	2.088	.0511	25.89	.0503	.5038	.2045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2614	26.95	26.31	25.20	.5201	.5231	F167.8	.5085	.4938
Stddev	.0004	.03	.11	.05	.0019	.0006	1.0	.0002	.0006
%RSD	.1376	.1083	.4307	.2122	.3558	.1057	.6012	.0307	.1262
#1	.2612	26.92	26.19	25.14	.5222	.5228	168.3	.5086	.4945
#2	.2612	26.98	26.33	25.22	.5194	.5227	166.7	.5084	.4937
#3	.2618	26.96	26.41	25.24	.5187	.5237	168.5	.5083	.4932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value							25.00		
Range							20.00%		

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5084	2.032	.0036	.5106	.5159	.5185	1.964	.4950	.5108
Stddev	.0018	.005	.0005	.0010	.0007	.0020	.003	.0004	.0007
%RSD	.3577	.2337	13.69	.2042	.1433	.3811	.1358	.0747	.1435
#1	.5075	2.029	.0033	.5095	.5159	.5205	1.962	.4946	.5115
#2	.5071	2.029	.0034	.5106	.5151	.5183	1.967	.4952	.5100
#3	.5104	2.037	.0042	.5116	.5166	.5166	1.962	.4953	.5108
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP32048-B2 Acquired: 4/26/2017 16:14:43 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1795.8	5477.6	38540.	4131.3
Stddev	5.2	9.4	53.	23.2
%RSD	.28943	.17227	.13744	.56181
#1	1790.2	5468.2	38514.	4155.2
#2	1796.9	5487.1	38506.	4108.8
#3	1800.4	5477.4	38601.	4129.8

Zoom In Zoom Out

Sample Name: MP32048-MB3 Acquired: 4/26/2017 16:18:51 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0044	-.0005	.0086	.0000	.3194	.0000	-.0001	.0001
Stddev	.0003	.0080	.0008	.0003	.0000	.0032	.000	.0001	.0002
%RSD	369.9	183.8	174.2	3.835	5862.	1.003	153.3	51.67	192.1
#1	.0003	-.0049	-.0006	.0088	.0000	.3171	.0000	-.0001	-.0001
#2	-.0003	.0089	-.0012	.0082	.0000	.3231	.0000	-.0001	.0001
#3	-.0002	.0091	.0004	.0088	.0000	.3181	.0000	-.0002	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	.0176	.0853	.0422	.0001	-.0002	1.095	-.0001	F.0130
Stddev	.0003	.0036	.0167	.0145	.0000	.0001	.017	.0003	.0005
%RSD	13.67	20.31	19.55	34.44	59.25	69.69	1.573	360.4	3.695
#1	.0023	.0215	.1018	.0284	.0000	-.0002	1.105	-.0002	.0125
#2	.0023	.0168	.0857	.0408	.0001	.0000	1.104	.0003	.0131
#3	.0029	.0145	.0685	.0574	.0000	-.0003	1.075	-.0003	.0135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit									.0025
Low Limit									-.0025

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	.0008	.0292	-.0002	.0003	.0001	-.0002	.0000	.0088
Stddev	.0004	.0007	.0019	.0001	.0001	.0000	.0006	.000	.0000
%RSD	28.72	89.02	6.419	45.71	15.89	27.17	290.8	913.3	.3188
#1	.0018	.0007	.0274	-.0001	.0003	.0001	.0005	.0001	.0088
#2	.0010	.0001	.0289	-.0001	.0003	.0001	-.0004	.0002	.0088
#3	.0012	.0014	.0311	-.0003	.0004	.0001	-.0006	-.0004	.0089
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP32048-MB3 Acquired: 4/26/2017 16:18:51 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2090.0	5782.3	41280.	4202.0
Stddev	.3	2.8	160.	4.1
%RSD	.01483	.04903	.38690	.09810
#1	2090.2	5780.5	41391.	4206.7
#2	2090.1	5780.8	41352.	4199.0
#3	2089.6	5785.5	41097.	4200.2

Zoom In Zoom Out

Sample Name: MP32048-B3 Acquired: 4/26/2017 16:23:06 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0478	27.79	1.983	2.094	.0516	26.31	.0508	.5093	.2044	.2600
Stddev	.0004	.08	.003	.004	.0003	.06	.0000	.0008	.0007	.0001
%RSD	.8996	.2836	.1347	.2073	.5532	.2254	.0870	.1647	.3447	.0285
#1	.0482	27.70	1.984	2.089	.0516	26.24	.0509	.5094	.2036	.2599
#2	.0477	27.84	1.985	2.097	.0513	26.33	.0508	.5085	.2046	.2600
#3	.0474	27.83	1.980	2.096	.0519	26.35	.0508	.5102	.2050	.2601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.99	26.14	25.36	.5216	.5297	26.75	.5141	.5024	.5068	2.000
Stddev	.06	.10	.19	.0021	.0010	.10	.0011	.0014	.0025	.002
%RSD	.2266	.3663	.7325	.4096	.1809	.3673	.2056	.2701	.4974	.1083
#1	26.96	26.05	25.15	.5191	.5302	26.64	.5142	.5010	.5050	1.999
#2	26.96	26.11	25.43	.5230	.5286	26.80	.5129	.5025	.5097	2.003
#3	27.06	26.24	25.50	.5226	.5303	26.82	.5150	.5037	.5058	1.999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0316	.5213	.5202	.5227	1.983	.4936	.5121
Stddev	.0030	.0011	.0008	.0009	.002	.0008	.0014
%RSD	9.409	.2030	.1484	.1784	.0832	.1578	.2736
#1	.0344	.5218	.5210	.5218	1.981	.4936	.5119
#2	.0318	.5201	.5195	.5237	1.984	.4929	.5109
#3	.0285	.5220	.5201	.5226	1.984	.4944	.5136
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP32048-B3 Acquired: 4/26/2017 16:23:06 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1900.7	5634.2	40068.	4224.9
Stddev	5.0	19.1	326.	49.3
%RSD	.26534	.33937	.81314	1.1662
#1	1898.2	5628.5	40337.	4279.9
#2	1906.5	5655.5	39706.	4209.9
#3	1897.3	5618.6	40161.	4184.8

Zoom In Zoom Out

Sample Name: MP32049-MB1 Acquired: 4/26/2017 16:27:05 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0040	-.0011	.0003	-.0001	.0045	-.0001	-.0001	.0000	.0002
Stddev	.000	.0096	.0005	.0001	.0000	.0028	.0001	.0001	.0002	.0002
%RSD	2843.	238.2	48.51	46.24	29.88	61.08	94.71	67.05	373.7	70.66
#1	-.0002	-.0048	-.0005	.0004	-.0001	.0015	-.0002	-.0002	.0003	.0000
#2	-.0001	-.0132	-.0015	.0003	-.0001	.0051	.0000	-.0001	.0000	.0004
#3	.0002	.0060	-.0012	.0002	-.0001	.0070	.0000	.0000	-.0001	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0152	.0196	.0009	.0000	-.0002	.0884	-.0004	.0001	.0010	-.0003
Stddev	.0032	.0136	.0203	.000	.0001	.0065	.0002	.0004	.0006	.0016
%RSD	20.76	69.32	2221.	83.74	50.37	7.310	39.51	427.6	66.70	483.4
#1	.0117	.0352	-.0173	.0000	-.0002	.0952	-.0003	.0002	.0010	-.0016
#2	.0179	.0106	-.0028	.0000	-.0001	.0824	-.0007	.0004	.0003	.0015
#3	.0161	.0130	.0228	.0000	-.0004	.0876	-.0004	-.0003	.0016	-.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0015	-.0004	.0000	.0001	-.0002	.0000	.0001
Stddev	.0002	.0001	.0001	.0001	.0005	.000	.0000
%RSD	12.49	34.61	209.4	87.36	216.1	1202.	26.17
#1	-.0015	-.0005	.0000	.0001	.0000	-.0002	.0001
#2	-.0014	-.0003	.0001	.0001	-.0008	.0001	.0002
#3	-.0017	-.0004	.0000	.0000	.0001	.0000	.0001
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

7.1

7

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: MP32049-MB1 Acquired: 4/26/2017 16:27:05 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2080.0	5758.2	41282.	4105.9
Stddev	6.5	10.2	145.	26.3
%RSD	.31347	.17764	.35215	.63951
#1	2073.4	5754.5	41423.	4113.3
#2	2080.3	5750.4	41289.	4076.8
#3	2086.4	5769.8	41133.	4127.7

Zoom In Zoom Out

Sample Name: MP32049-MB2A Acquired: 4/26/2017 16:31:22 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0012	-.0015	.0001	-.0001	.0208	-.0001	-.0001	.0000	.0000
Stddev	.0001	.0153	.0008	.0003	.0001	.0036	.0000	.0002	.0002	.000
%RSD	86.84	1264.	52.84	299.5	108.3	17.13	24.83	112.4	1736.	385.2
#1	.0001	-.0032	-.0016	-.0002	-.0002	.0227	-.0001	-.0002	.0003	-.0001
#2	.0002	.0150	-.0007	.0003	-.0001	.0229	-.0001	-.0003	-.0001	.0000
#3	.0000	-.0155	-.0023	.0002	.0000	.0167	-.0001	.0000	-.0001	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052	.0046	.0034	.0000	-.0002	.1197	-.0004	.0006	.0008	-.0007
Stddev	.0015	.0114	.0198	.000	.0001	.0104	.0000	.0004	.0005	.0003
%RSD	28.89	245.5	578.9	81.95	64.15	8.645	12.12	73.01	62.99	43.23
#1	.0067	.0099	.0225	-.0001	-.0003	.1234	-.0003	.0004	.0011	-.0004
#2	.0037	-.0084	.0049	.0000	-.0002	.1278	-.0004	.0002	.0002	-.0009
#3	.0052	.0124	-.0171	.0000	-.0001	.1081	-.0004	.0010	.0010	-.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0002	.0008	.0000	-.0009	-.0001	.0071
Stddev	.0003	.0003	.0001	.000	.0003	.0002	.0000
%RSD	199.5	178.1	8.691	149.8	28.00	213.3	.4343
#1	.0005	-.0004	.0008	.0000	-.0007	.0001	.0072
#2	-.0001	-.0004	.0007	.0000	-.0008	-.0002	.0071
#3	.0001	.0002	.0007	.0000	-.0012	-.0002	.0071
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Zoom In Zoom Out

Sample Name: MP32049-MB2A Acquired: 4/26/2017 16:31:22 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2071.9	5714.7	41329.	4149.2
Stddev	5.1	20.2	144.	57.0
%RSD	.24548	.35390	.34856	1.3743
#1	2067.2	5702.5	41428.	4215.0
#2	2071.3	5703.4	41163.	4115.6
#3	2077.3	5738.0	41394.	4116.9

Zoom In Zoom Out

Sample Name: MP32049-B1 Acquired: 4/26/2017 16:35:38 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0479	27.41	1.974	2.051	.0509	25.71	.0504	.5039	.2048	.2531
Stddev	.0003	.08	.002	.006	.0002	.03	.0001	.0002	.0004	.0001
%RSD	.5589	.2756	.0900	.3026	.4196	.1263	.1931	.0428	.1796	.0355
#1	.0477	27.42	1.974	2.054	.0507	25.70	.0504	.5037	.2044	.2530
#2	.0482	27.34	1.976	2.044	.0507	25.69	.0504	.5038	.2051	.2532
#3	.0480	27.49	1.972	2.055	.0511	25.75	.0505	.5041	.2048	.2531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.63	25.83	25.19	.5174	.5138	25.56	.5107	.4891	.5047	2.004
Stddev	.06	.05	.06	.0002	.0006	.04	.0014	.0025	.0011	.004
%RSD	.2082	.1840	.2275	.0347	.1113	.1478	.2789	.5071	.2260	.1986
#1	26.65	25.83	25.17	.5174	.5138	25.60	.5091	.4870	.5043	2.002
#2	26.57	25.78	25.25	.5175	.5132	25.52	.5111	.4885	.5038	2.002
#3	26.67	25.87	25.14	.5172	.5144	25.57	.5119	.4919	.5060	2.009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0020	.5119	.5059	.5084	1.996	.4876	.5022
Stddev	.0003	.0009	.0020	.0003	.005	.0015	.0002
%RSD	17.49	.1784	.3885	.0651	.2318	.2985	.0320
#1	-.0024	.5109	.5066	.5086	1.994	.4864	.5020
#2	-.0017	.5120	.5036	.5080	1.993	.4892	.5021
#3	-.0018	.5128	.5074	.5085	2.001	.4872	.5023
Check ?	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: MP32049-B1 Acquired: 4/26/2017 16:35:38 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1900.1	5670.8	39872.	4216.3
Stddev	2.0	1.1	209.	32.5
%RSD	.10558	.02012	.52456	.77036
#1	1898.0	5672.0	40033.	4242.7
#2	1902.0	5669.8	39636.	4180.0
#3	1900.4	5670.4	39948.	4226.2

Zoom In Zoom Out

Sample Name: FA43220-1F Acquired: 4/26/2017 16:39:37 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0005	-.0001	-.0022	.0523	.0000	140.4	.0033	.0000	.0003
Stddev	.0006	.0037	.0006	.0003	.000	.5	.0000	.000	.0003
%RSD	132.8	5500.	27.13	.5186	210.0	.3667	1.103	289.7	89.49
#1	-.0002	.0038	-.0027	.0526	-.0001	140.1	.0033	-.0001	.0006
#2	.0005	-.0035	-.0025	.0521	-.0001	140.1	.0033	.0001	.0000
#3	.0010	-.0005	-.0015	.0522	.0001	141.0	.0032	.0000	.0003

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0019	.0208	2.970	34.58	.2796	.0003	F265.7	.0021	.0022
Stddev	.0002	.0044	.046	.11	.0004	.0002	4.5	.0001	.0003
%RSD	9.094	21.07	1.555	.3232	.1553	71.38	1.696	5.187	11.39
#1	.0018	.0234	2.917	34.45	.2799	.0005	260.6	.0020	.0023
#2	.0021	.0233	3.000	34.62	.2791	.0001	267.2	.0022	.0024
#3	.0018	.0157	2.994	34.66	.2798	.0004	269.3	.0022	.0019

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0008	.0011	1.691	-.0005	.2090	.0016	.0001	.0002	.3136
Stddev	.0004	.0011	.002	.0002	.0011	.0002	.0012	.0002	.0003
%RSD	52.72	102.0	.1301	42.92	.5408	11.57	1098.	113.0	.0955
#1	.0009	.0021	1.694	-.0005	.2086	.0015	-.0012	.0001	.3134
#2	.0003	-.0001	1.690	-.0003	.2081	.0015	.0007	.0005	.3134
#3	.0011	.0011	1.691	-.0008	.2102	.0018	.0009	.0001	.3139

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1733.6	5256.3	36807.	4034.5
Stddev	5.9	6.8	94.	23.9
%RSD	.33920	.12848	.25556	.59183
#1	1740.1	5249.8	36791.	4053.6
#2	1728.8	5255.7	36908.	4042.2
#3	1731.8	5263.3	36721.	4007.7

Zoom In Zoom Out

Sample Name: MP32049-D1 Acquired: 4/26/2017 16:43:55 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0004	-.0171	-.0018	.0505	-.0001	135.8	.0031	.0000	.0005
Stddev	.0003	.0117	.0004	.0002	.0000	.4	.0000	.0001	.0002
%RSD	68.65	68.65	22.73	.4717	42.68	.3143	.6371	398.7	37.33
#1	.0003	-.0230	-.0017	.0502	-.0001	135.4	.0031	.0000	.0006
#2	.0007	-.0247	-.0014	.0506	-.0001	136.3	.0031	.0001	.0003
#3	.0002	-.0036	-.0022	.0506	.0000	135.8	.0031	.0000	.0005

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0015	.0093	2.903	33.58	.2708	.0000	F246.1	.0020	.0030
Stddev	.0004	.0005	.032	.16	.0008	.000	3.9	.0001	.0001
%RSD	27.32	5.384	1.091	.4767	.2964	159.6	1.595	5.674	3.382
#1	.0015	.0088	2.881	33.40	.2708	.0000	248.7	.0021	.0031
#2	.0011	.0094	2.889	33.71	.2700	-.0001	248.1	.0020	.0030
#3	.0020	.0098	2.939	33.64	.2716	.0000	241.6	.0019	.0029

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0004	.0001	1.633	-.0006	.2014	.0014	-.0006	.0004	.3018
Stddev	.0003	.0013	.002	.0003	.0001	.0002	.0011	.0001	.0007
%RSD	83.07	1838.	.1276	55.37	.0532	12.51	196.7	27.01	.2313
#1	.0003	.0015	1.635	-.0009	.2013	.0012	-.0008	.0004	.3025
#2	.0001	-.0003	1.632	-.0005	.2015	.0015	.0006	.0005	.3020
#3	.0007	-.0010	1.631	-.0003	.2015	.0014	-.0015	.0003	.3011

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1741.2	5277.5	37055.	4033.2
Stddev	2.9	7.1	36.	24.5
%RSD	.16846	.13391	.09726	.60825
#1	1738.9	5269.4	37034.	4059.2
#2	1740.2	5282.6	37097.	4010.5
#3	1744.6	5280.4	37035.	4029.9

Zoom In Zoom Out

Sample Name: MP32049-SD1 Acquired: 4/26/2017 16:48:13 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0021	-.0581	-.0035	.0534	-.0008	144.0	.0029	.0003	.0004	.0028
Stddev	.0006	.0178	.0033	.0003	.0002	.5	.0001	.0006	.0015	.0008
%RSD	30.28	30.69	94.35	.6519	22.76	.3761	3.713	244.5	347.0	28.91
#1	.0020	-.0510	-.0057	.0537	-.0010	143.4	.0028	.0006	-.0008	.0037
#2	.0015	-.0449	-.0051	.0535	-.0007	144.4	.0029	.0006	-.0001	.0025
#3	.0028	-.0784	.0003	.0530	-.0007	144.1	.0030	-.0005	.0022	.0022

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0187	3.118	35.50	.2859	-.0027	281.2	.0016	.0075	.0046	.0052
Stddev	.0081	.101	.31	.0009	.0006	.5	.0011	.0007	.0007	.0086
%RSD	43.55	3.251	.8632	.3265	23.20	.1953	68.57	9.110	15.22	167.1
#1	.0249	3.194	35.32	.2860	-.0034	280.8	.0028	.0077	.0038	-.0046
#2	.0217	3.156	35.86	.2867	-.0025	281.1	.0008	.0080	.0049	.0116
#3	.0095	3.003	35.33	.2849	-.0022	281.8	.0011	.0067	.0050	.0086

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.685	-.0015	.2097	.0052	.0047	.0005	.3408
Stddev	.004	.0009	.0006	.0004	.0043	.0014	.0004
%RSD	.2114	57.97	.2831	8.109	92.77	276.2	.1221
#1	1.687	-.0005	.2094	.0052	-.0001	.0018	.3403
#2	1.681	-.0022	.2104	.0047	.0058	-.0009	.3410
#3	1.688	-.0020	.2094	.0056	.0083	.0006	.3410

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1920.7	5581.8	39207.	4124.1
Stddev	4.5	12.3	56.	43.6
%RSD	.23675	.22099	.14341	1.0572
#1	1925.9	5595.9	39201.	4173.5
#2	1918.7	5576.4	39267.	4108.2
#3	1917.5	5573.1	39155.	4090.8

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 16:52:24 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2500	40.01	2.009	2.045	2.013	40.08	2.046	2.037	2.009	2.003
Stddev	.0008	.07	.006	.008	.004	.06	.006	.006	.008	.003
%RSD	.3088	.1757	.3062	.3737	.2048	.1430	.3126	.2903	.4108	.1624
#1	.2509	40.04	2.002	2.053	2.017	40.13	2.039	2.031	2.018	2.007
#2	.2498	40.05	2.010	2.044	2.014	40.09	2.046	2.038	2.007	2.001
#3	.2495	39.92	2.014	2.038	2.009	40.01	2.052	2.042	2.002	2.002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.47	40.31	39.75	2.059	2.009	39.72	2.037	2.008	2.018	2.026
Stddev	.09	.05	.16	.013	.008	.12	.004	.007	.005	.005
%RSD	.2104	.1290	.3954	.6050	.4099	.3070	.2065	.3322	.2569	.2267
#1	40.56	40.29	39.91	2.072	2.001	39.86	2.032	2.000	2.012	2.021
#2	40.46	40.37	39.74	2.058	2.010	39.64	2.038	2.013	2.020	2.026
#3	40.39	40.28	39.60	2.047	2.017	39.66	2.041	2.011	2.021	2.030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.905	2.018	2.047	2.058	2.034	2.005	2.041
Stddev	.005	.003	.003	.010	.004	.004	.006
%RSD	.2434	.1302	.1402	.5028	.2204	.2258	.2915
#1	1.899	2.015	2.050	2.070	2.030	2.011	2.035
#2	1.907	2.019	2.046	2.055	2.034	2.004	2.041
#3	1.908	2.020	2.045	2.050	2.039	2.002	2.047
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 16:52:24 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1785.7	5474.8	39068.	4150.9
Stddev	4.0	17.6	326.	6.2
%RSD	.22646	.32213	.83388	.15021
#1	1789.2	5493.4	38716.	4149.8
#2	1786.6	5472.8	39127.	4157.6
#3	1781.3	5458.3	39360.	4145.3

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 16:56:20 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0115	.0002	.0004	.0001	.0031	.0001	.0001	.0003
Stddev	.0003	.0059	.0004	.0002	.0001	.0028	.0000	.0001	.0003
%RSD	267.4	50.99	200.2	36.63	44.83	89.06	19.31	108.8	119.6
#1	.0002	-.0167	.0006	.0005	.0001	.0022	.0001	.0001	.0000
#2	-.0003	-.0052	.0001	.0006	.0002	.0063	.0001	.0002	.0006
#3	.0004	-.0126	-.0001	.0003	.0001	.0009	.0001	.0000	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0256	.0262	.0067	.0001	F.0013	.0813	.0001	.0004
Stddev	.0002	.0050	.0154	.0146	.0000	.0006	.0077	.0002	.0003
%RSD	35.22	19.50	58.73	217.1	24.91	42.33	9.430	109.6	77.48
#1	.0009	.0295	.0431	.0183	.0002	.0019	.0783	.0000	.0002
#2	.0004	.0275	.0131	.0115	.0001	.0012	.0756	.0001	.0003
#3	.0008	.0200	.0223	-.0096	.0001	.0008	.0900	.0003	.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0005	-.0001	.0002	.0001	.0011	.0012	.0001	-.0001
Stddev	.0008	.0000	.0002	.0003	.0001	.0001	.0001	.0003	.0001
%RSD	251.9	4.308	190.6	140.2	43.25	11.94	4.853	217.5	175.6
#1	.0011	-.0004	-.0004	-.0001	.0002	.0012	.0012	.0004	-.0001
#2	.0002	-.0005	-.0001	.0002	.0001	.0011	.0012	-.0002	.0000
#3	-.0004	-.0004	.0001	.0004	.0002	.0010	.0013	.0002	-.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 16:56:20 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2063.2	5729.9	40411.	4136.5
Stddev	1.5	6.5	238.	19.0
%RSD	.07451	.11311	.58907	.45908
#1	2061.8	5729.1	40674.	4154.5
#2	2063.1	5723.8	40209.	4116.7
#3	2064.8	5736.7	40351.	4138.2

Zoom In Zoom Out

Sample Name: MP32049-PS1 Acquired: 4/26/2017 17:00:36 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0492	2.717	.1339	.3288	.0538	143.0	.0553	.0542	.0543
Stddev	.0002	.010	.0214	.0004	.0003	.4	.0004	.0012	.0002
%RSD	.4971	.3597	16.01	.1109	.5275	.2650	.7344	2.190	.2889
#1	.0494	2.706	.1132	.3284	.0535	143.1	.0552	.0532	.0543
#2	.0490	2.722	.1325	.3290	.0540	142.6	.0550	.0539	.0541
#3	.0490	2.724	.1560	.3291	.0539	143.3	.0558	.0555	.0544

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.1110	3.231	13.80	38.94	.3286	.1200	F262.6	.1126	.0863
Stddev	.0003	.009	.05	.13	.0004	.0067	7.7	.0042	.0237
%RSD	.3076	.2818	.3903	.3305	.1174	5.571	2.945	3.740	27.45
#1	.1108	3.221	13.75	39.03	.3283	.1141	269.1	.1088	.0637
#2	.1114	3.237	13.82	38.79	.3290	.1187	254.0	.1120	.0843
#3	.1108	3.236	13.85	38.99	.3285	.1273	264.5	.1171	.1109

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1362	.1382	1.655	.0720	.2563	.1124	.0779	.0533	.5695
Stddev	.0172	.0247	.005	.0172	.0002	.0002	.0170	.0004	.0018
%RSD	12.63	17.85	.3057	23.91	.0631	.1399	21.80	.7322	.3128
#1	.1207	.1144	1.661	.0554	.2563	.1123	.0933	.0537	.5714
#2	.1332	.1365	1.652	.0708	.2562	.1123	.0807	.0532	.5694
#3	.1547	.1637	1.653	.0898	.2565	.1126	.0597	.0529	.5678

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1584.6	4953.7	36266.	4063.6
Stddev	16.9	43.9	318.	21.8
%RSD	1.0668	.88652	.87732	.53740
#1	1604.1	4999.6	36615.	4039.1
#2	1573.7	4949.4	36192.	4081.1
#3	1576.0	4912.1	35992.	4070.4

Zoom In Zoom Out

Sample Name: MP32049-S1 Acquired: 4/26/2017 17:04:45 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0493	27.78	2.055	2.110	.0508	157.9	.0524	.4908	.2013
Stddev	.0002	.15	.006	.010	.0004	1.0	.0001	.0006	.0004
%RSD	.4423	.5319	.2788	.4639	.8061	.6499	.2538	.1190	.1762
#1	.0493	27.95	2.048	2.121	.0513	159.1	.0525	.4901	.2011
#2	.0490	27.72	2.057	2.106	.0506	157.3	.0523	.4911	.2010
#3	.0495	27.68	2.059	2.102	.0506	157.4	.0525	.4911	.2017

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2544	26.42	29.25	57.31	.7691	.5160	F256.2	.4999	.4956
Stddev	.0007	.27	.18	.69	.0015	.0009	3.1	.0005	.0007
%RSD	.2905	1.007	.6133	1.203	.2012	.1688	1.214	.1003	.1375
#1	.2547	26.73	29.45	58.09	.7674	.5151	259.4	.5004	.4961
#2	.2549	26.24	29.17	56.78	.7704	.5168	253.2	.4998	.4948
#3	.2535	26.29	29.12	57.06	.7696	.5161	256.1	.4995	.4959

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.5184	2.062	1.635	.5064	.6991	.5105	1.942	.4896	.7829
Stddev	.0024	.003	.003	.0003	.0053	.0010	.004	.0009	.0006
%RSD	.4703	.1416	.2037	.0606	.7527	.1931	.1847	.1823	.0796
#1	.5182	2.059	1.631	.5061	.7047	.5096	1.938	.4904	.7822
#2	.5160	2.065	1.636	.5066	.6983	.5115	1.945	.4897	.7833
#3	.5209	2.061	1.637	.5066	.6943	.5104	1.943	.4887	.7833

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1701.1	5325.7	37742.	4117.9
Stddev	1.1	7.6	61.	66.1
%RSD	.06674	.14258	.16074	1.6047
#1	1702.4	5332.7	37804.	4056.1
#2	1700.4	5317.6	37682.	4187.5
#3	1700.5	5326.6	37739.	4110.2

Zoom In Zoom Out

Sample Name: MP32049-S2 Acquired: 4/26/2017 17:08:53 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0499	28.49	2.106	2.163	.0521	160.2	.0538	.5025	.2054
Stddev	.0004	.05	.002	.004	.0003	.2	.0000	.0006	.0007
%RSD	.7303	.1903	.0838	.1763	.5703	.0986	.0343	.1255	.3270
#1	.0495	28.53	2.107	2.162	.0524	160.3	.0537	.5023	.2052
#2	.0501	28.42	2.107	2.160	.0520	160.0	.0538	.5019	.2049
#3	.0502	28.50	2.104	2.167	.0519	160.1	.0537	.5031	.2061

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2602	26.99	29.81	58.10	.7831	.5301	F255.5	.5117	.5074
Stddev	.0006	.03	.12	.12	.0024	.0005	5.1	.0003	.0013
%RSD	.2239	.1078	.3862	.2074	.3053	.0958	2.003	.0538	.2518
#1	.2597	26.96	29.92	58.23	.7829	.5296	256.2	.5120	.5087
#2	.2602	27.02	29.69	58.08	.7809	.5303	260.2	.5114	.5062
#3	.2608	26.99	29.80	57.99	.7857	.5305	250.1	.5117	.5073

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.5312	2.124	1.659	.5201	.7134	.5219	1.992	.4997	.7975
Stddev	.0015	.003	.002	.0007	.0022	.0008	.010	.0015	.0016
%RSD	.2785	.1257	.0960	.1352	.3129	.1515	.5086	.3059	.2057
#1	.5310	2.124	1.661	.5209	.7155	.5216	1.996	.4987	.7987
#2	.5299	2.127	1.659	.5196	.7110	.5213	1.981	.4990	.7957
#3	.5328	2.121	1.657	.5199	.7136	.5228	2.000	.5015	.7981

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1696.9	5316.6	37926.	4141.8
Stddev	6.7	11.6	232.	21.8
%RSD	.39608	.21806	.61260	.52638
#1	1692.6	5306.7	37976.	4137.4
#2	1704.7	5329.4	38130.	4122.4
#3	1693.5	5313.9	37673.	4165.4

Zoom In Zoom Out

Sample Name: FA43220-2F Acquired: 4/26/2017 17:12:59 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0003	-.0084	-.0017	.0495	-.0002	135.9	.0030	.0000	.0002
Stddev	.0002	.0023	.0009	.0002	.0002	.2	.0000	.000	.0003
%RSD	45.46	27.22	48.98	.4894	107.1	.1120	.7942	316.0	133.9
#1	.0004	-.0058	-.0020	.0494	-.0003	136.0	.0029	.0001	.0001
#2	.0005	-.0094	-.0024	.0493	-.0002	135.9	.0030	.0000	.0006
#3	.0002	-.0100	-.0008	.0498	.0000	135.7	.0030	-.0001	.0000

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0017	.0211	2.900	32.81	.2406	.0004	F238.3	.0020	.0029
Stddev	.0001	.0046	.017	.05	.0004	.0001	2.8	.0001	.0007
%RSD	7.726	21.73	.5904	.1433	.1806	33.34	1.165	4.953	23.58
#1	.0017	.0263	2.908	32.81	.2406	.0005	241.5	.0020	.0027
#2	.0018	.0178	2.911	32.86	.2411	.0003	236.8	.0021	.0024
#3	.0015	.0192	2.880	32.76	.2402	.0005	236.5	.0019	.0037

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0004	.0021	1.618	-.0004	.1933	.0017	-.0007	.0002	.2944
Stddev	.0012	.0003	.001	.0003	.0009	.0002	.0005	.0002	.0007
%RSD	335.7	12.69	.0463	78.33	.4491	13.12	77.33	126.1	.2320
#1	.0010	.0022	1.617	-.0001	.1938	.0020	-.0011	.0002	.2941
#2	-.0007	.0023	1.618	-.0007	.1938	.0016	-.0001	-.0001	.2940
#3	-.0014	.0018	1.618	-.0004	.1923	.0016	-.0009	.0004	.2952

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1744.2	5252.3	37198.	4053.3
Stddev	1.3	4.5	93.	31.3
%RSD	.07696	.08549	.25084	.77112
#1	1744.6	5252.3	37123.	4078.1
#2	1745.3	5256.9	37167.	4063.5
#3	1742.7	5247.9	37302.	4018.2

Zoom In Zoom Out

Sample Name: FA43276-1 Acquired: 4/26/2017 17:17:17 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0002	1.586	.0010	.2931	.0001	232.8	-.0002	.0003	.0051	.0045
Stddev	.0002	.030	.0003	.0011	.0000	.3	.0001	.0000	.0002	.0003
%RSD	139.2	1.870	33.17	.3918	34.97	.1189	42.47	1.080	3.445	6.077
#1	.0000	1.596	.0012	.2923	.0001	232.9	-.0003	.0003	.0049	.0048
#2	.0004	1.609	.0012	.2944	.0001	232.9	-.0002	.0003	.0053	.0042
#3	.0001	1.552	.0006	.2926	.0001	232.4	-.0001	.0003	.0051	.0046

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	3.847	11.61	32.80	.0225	.0008	46.85	.0032	.0070	-.0002	.0070
Stddev	.014	.04	.12	.0000	.0001	.05	.0001	.0007	.0006	.0016
%RSD	.3717	.3190	.3513	.0920	14.66	.1084	4.598	10.01	224.7	22.51
#1	3.849	11.62	32.93	.0224	.0009	46.89	.0031	.0062	.0003	.0052
#2	3.859	11.64	32.76	.0225	.0009	46.88	.0031	.0072	-.0008	.0077
#3	3.831	11.57	32.71	.0224	.0007	46.80	.0033	.0075	-.0002	.0080

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	10.42	-.0002	.7477	.0338	.0000	.0139	.0076
Stddev	.02	.0002	.0017	.0010	.0012	.0002	.0000
%RSD	.1920	99.93	.2265	2.882	8564.	1.134	.5321
#1	10.43	-.0001	.7480	.0345	-.0010	.0139	.0076
#2	10.40	-.0004	.7492	.0327	-.0003	.0141	.0076
#3	10.44	-.0001	.7459	.0341	.0013	.0138	.0076

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	1797.8	5330.6	37956.	4108.9
Stddev	.5	.6	227.	34.9
%RSD	.03013	.01033	.59754	.85006
#1	1797.7	5331.2	37830.	4096.4
#2	1798.3	5330.1	37819.	4148.4
#3	1797.2	5330.4	38217.	4082.0

Zoom In Zoom Out

Sample Name: FA43276-2 Acquired: 4/26/2017 17:21:26 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0004	2.004	.0008	.3174	.0001	233.0	-.0003	.0003	.0056	.0048
Stddev	.0005	.017	.0004	.0007	.0000	.4	.0000	.0001	.0004	.0004
%RSD	151.9	.8480	50.74	.2111	41.65	.1534	2.405	21.95	6.984	8.798
#1	-.0002	2.023	.0009	.3172	.0001	232.8	-.0002	.0004	.0052	.0044
#2	.0005	1.997	.0010	.3168	.0000	233.4	-.0003	.0003	.0060	.0052
#3	.0008	1.992	.0003	.3181	.0001	232.8	-.0003	.0003	.0055	.0047

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	4.326	11.62	32.78	.0246	.0009	47.09	.0036	.0069	-.0005	.0077
Stddev	.015	.02	.20	.0001	.0002	.07	.0001	.0004	.0011	.0007
%RSD	.3417	.1627	.6067	.4997	22.25	.1382	1.861	5.472	210.7	8.472
#1	4.332	11.64	32.70	.0246	.0008	47.02	.0036	.0067	.0007	.0070
#2	4.336	11.61	33.01	.0248	.0007	47.15	.0035	.0073	-.0015	.0080
#3	4.309	11.60	32.63	.0246	.0011	47.10	.0035	.0067	-.0008	.0082

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	11.00	.0000	.7466	.0423	.0003	.0144	.0084
Stddev	.03	.0002	.0019	.0026	.0004	.0004	.0000
%RSD	.2996	2387.	.2537	6.156	148.4	2.493	.2875
#1	11.00	.0001	.7447	.0440	.0007	.0147	.0084
#2	10.96	.0002	.7485	.0393	-.0001	.0140	.0084
#3	11.03	-.0003	.7466	.0435	.0002	.0146	.0084

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	1796.5	5307.5	37862.	4071.4
Stddev	1.6	6.2	179.	25.8
%RSD	.09142	.11681	.47277	.63462
#1	1795.2	5311.6	37696.	4081.3
#2	1798.3	5300.4	38051.	4042.1
#3	1795.9	5310.6	37839.	4090.9

Zoom In Zoom Out

Sample Name: FA43276-3 Acquired: 4/26/2017 17:25:34 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0007	32.19	.0081	.4204	.0016	265.7	.0009	.0216	.0643	.0606
Stddev	.0004	.06	.0008	.0007	.0001	.6	.0001	.0001	.0004	.0002
%RSD	66.15	.1983	10.46	.1659	4.239	.2316	6.651	.5156	.6075	.2874
#1	.0006	32.25	.0077	.4209	.0015	266.3	.0008	.0216	.0643	.0606
#2	.0003	32.20	.0090	.4207	.0016	265.8	.0008	.0215	.0640	.0605
#3	.0011	32.12	.0075	.4196	.0017	265.1	.0009	.0217	.0647	.0608

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	36.50	16.58	41.91	.3965	.0022	49.75	.0426	.0421	.0002	.0075
Stddev	.17	.07	.16	.0016	.0001	.26	.0002	.0009	.0009	.0007
%RSD	.4607	.4292	.3732	.4114	5.765	.5180	.4088	2.158	538.1	8.940
#1	36.68	16.64	42.05	.3946	.0023	50.04	.0426	.0412	-.0008	.0082
#2	36.46	16.61	41.93	.3974	.0023	49.62	.0428	.0430	.0003	.0069
#3	36.35	16.50	41.74	.3975	.0021	49.58	.0425	.0420	.0010	.0074

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	41.69	.0078	.8223	.4124	-.0012	.0736	.1730
Stddev	.05	.0003	.0033	.0005	.0014	.0002	.0001
%RSD	.1127	3.236	.3976	.1174	121.9	.2527	.0522
#1	41.68	.0075	.8260	.4120	-.0028	.0734	.1731
#2	41.64	.0080	.8209	.4124	-.0001	.0737	.1730
#3	41.73	.0077	.8200	.4130	-.0006	.0736	.1729

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	1757.2	5637.6	39834.	4258.7
Stddev	1.2	6.2	218.	32.2
%RSD	.06805	.11003	.54617	.75628
#1	1755.9	5637.5	40082.	4233.4
#2	1757.7	5631.4	39675.	4247.6
#3	1758.1	5643.8	39746.	4294.9

Zoom In Zoom Out

Sample Name: FA43276-4 Acquired: 4/26/2017 17:29:39 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0001	.3052	.0006	.4073	-.0001	179.2	.0002	.0000	.0027	.0008
Stddev	.0002	.0196	.0007	.0006	.0001	.8	.0001	.0001	.0004	.0001
%RSD	258.0	6.426	126.2	.1594	111.1	.4465	47.52	406.7	13.18	15.75
#1	.0000	.2882	-.0002	.4074	-.0001	178.6	.0003	-.0001	.0027	.0010
#2	.0002	.3267	.0012	.4080	-.0002	180.1	.0002	.0000	.0031	.0008
#3	.0000	.3007	.0007	.4067	.0000	179.0	.0001	.0001	.0024	.0007

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(ln2306)	(Y_2243)	(Y_2243)
Avg	.4598	10.33	25.49	.0038	.0009	35.42	.0007	.0050	.0004	.0111
Stddev	.0049	.06	.13	.0000	.0001	.12	.0001	.0002	.0014	.0002
%RSD	1.065	.5916	.5056	1.146	11.52	.3465	17.43	4.628	310.6	2.055
#1	.4559	10.28	25.39	.0037	.0007	35.32	.0007	.0052	.0020	.0111
#2	.4653	10.40	25.64	.0038	.0009	35.56	.0009	.0047	-.0006	.0109
#3	.4581	10.31	25.46	.0038	.0009	35.37	.0006	.0050	.0000	.0113

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(ln2306)	(Y_3600)	(Y_2243)
Avg	8.972	-.0004	.6602	.0086	-.0003	.0088	.0056
Stddev	.003	.0002	.0029	.0003	.0005	.0002	.0000
%RSD	.0333	55.75	.4365	3.410	163.1	2.060	.6814
#1	8.976	-.0006	.6574	.0083	.0002	.0088	.0056
#2	8.971	-.0002	.6631	.0087	-.0002	.0086	.0056
#3	8.970	-.0005	.6600	.0089	-.0008	.0090	.0056

Int. Std.	ln2306	Y_2243	Y_3600	Y_3710
Avg	1838.1	5393.3	38501.	4029.6
Stddev	4.8	16.3	112.	22.9
%RSD	.25867	.30264	.29076	.56930
#1	1839.2	5384.7	38615.	4054.6
#2	1832.9	5383.1	38495.	4009.4
#3	1842.2	5412.2	38391.	4024.8

Zoom In Zoom Out

Sample Name: FA43276-5 Acquired: 4/26/2017 17:33:49 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0007	1.899	.0008	.1603	.0000	140.8	.0000	.0006	.0051	.0030
Stddev	.0003	.006	.0002	.0002	.0000	.2	.000	.0001	.0002	.0003
%RSD	38.43	.3203	29.87	.1544	75.59	.1171	110.8	18.77	4.308	9.412
#1	.0005	1.906	.0005	.1606	.0000	140.7	.0000	.0005	.0054	.0027
#2	.0010	1.899	.0009	.1602	.0000	141.0	.0000	.0007	.0050	.0031
#3	.0007	1.893	.0010	.1601	.0001	140.7	.0000	.0008	.0050	.0033

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	1.924	9.562	20.36	.0189	.0009	32.13	.0021	.0055	.0011	.0033
Stddev	.011	.034	.10	.0001	.0001	.08	.0001	.0006	.0005	.0010
%RSD	.5839	.3592	.4734	.5661	10.79	.2368	4.594	11.26	47.22	31.28
#1	1.924	9.523	20.34	.0188	.0010	32.11	.0021	.0062	.0006	.0022
#2	1.935	9.582	20.47	.0190	.0008	32.21	.0021	.0050	.0010	.0036
#3	1.912	9.583	20.28	.0189	.0009	32.06	.0023	.0054	.0017	.0042

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	10.66	-.0003	.4831	.0631	.0000	.0124	.0086
Stddev	.01	.0001	.0004	.0155	.0003	.0002	.0001
%RSD	.0741	42.52	.0924	24.54	606.4	1.230	1.477
#1	10.67	-.0003	.4836	.0808	.0003	.0122	.0087
#2	10.67	-.0005	.4828	.0517	-.0003	.0125	.0086
#3	10.66	-.0002	.4829	.0570	.0001	.0124	.0085

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1857.3	5465.3	38790.	4061.2
Stddev	6.3	20.6	166.	16.1
%RSD	.33952	.37728	.42712	.39578
#1	1850.3	5443.8	38941.	4069.6
#2	1862.4	5467.4	38613.	4042.6
#3	1859.3	5484.8	38817.	4071.3

Zoom In Zoom Out

Sample Name: FA43284-1 Acquired: 4/26/2017 17:37:59 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0026	1.175	.0036	.0137	-.0008	544.3	-.0010	.0003	.0024
Stddev	.0018	.026	.0026	.0005	.0004	.9	.0002	.0007	.0003
%RSD	70.86	2.247	71.65	3.867	45.87	.1573	16.19	251.4	13.21
#1	.0016	1.163	.0011	.0134	-.0004	544.5	-.0012	-.0005	.0027
#2	.0047	1.205	.0035	.0143	-.0012	545.1	-.0009	.0007	.0021
#3	.0014	1.156	.0063	.0134	-.0008	543.4	-.0011	.0007	.0023

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0050	.8675	22.01	107.4	.0161	.1552	F2757.	.0008	.0138
Stddev	.0002	.0244	.23	.5	.0001	.0006	44.	.0004	.0039
%RSD	4.482	2.816	1.031	.4797	.5929	.3621	1.612	54.89	28.34
#1	.0051	.8787	21.94	107.7	.0160	.1557	2809.	.0011	.0169
#2	.0052	.8395	21.82	107.8	.0162	.1554	2730.	.0003	.0150
#3	.0048	.8844	22.26	106.8	.0161	.1546	2733.	.0009	.0094

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0004	.0341	3.869	-.0028	7.262	.0350	-.0040	.0239	.0357
Stddev	.0013	.0029	.044	.0011	.011	.0023	.0050	.0006	.0003
%RSD	306.0	8.624	1.143	39.24	.1500	6.663	122.9	2.430	.8988
#1	-.0009	.0365	3.919	-.0020	7.252	.0335	-.0058	.0245	.0353
#2	-.0014	.0349	3.834	-.0024	7.274	.0377	.0016	.0234	.0360
#3	.0010	.0308	3.854	-.0040	7.260	.0338	-.0078	.0238	.0357

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1661.1	5191.7	35793.	3991.0
Stddev	4.4	7.4	25.	15.7
%RSD	.26351	.14193	.06945	.39353
#1	1665.7	5195.9	35802.	4000.1
#2	1657.0	5183.2	35765.	4000.1
#3	1660.5	5196.0	35812.	3972.9

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 17:42:19 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2516	40.29	2.018	2.065	2.029	40.38	2.055	2.048	2.025	2.018
Stddev	.0004	.17	.003	.008	.009	.24	.002	.002	.004	.004
%RSD	.1423	.4309	.1339	.3695	.4266	.5840	.0718	.0839	.2093	.1905
#1	.2513	40.11	2.020	2.058	2.021	40.19	2.055	2.047	2.029	2.014
#2	.2519	40.30	2.015	2.063	2.027	40.32	2.054	2.047	2.026	2.021
#3	.2518	40.46	2.020	2.073	2.038	40.64	2.057	2.050	2.020	2.020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.91	40.92	40.07	2.074	2.019	39.43	2.047	2.022	2.025	2.035
Stddev	.19	.23	.21	.002	.004	.30	.000	.003	.001	.008
%RSD	.4526	.5512	.5289	.0971	.1828	.7618	.0200	.1369	.0457	.3971
#1	40.73	40.78	39.86	2.073	2.016	39.23	2.046	2.025	2.025	2.032
#2	40.91	40.80	40.07	2.073	2.018	39.28	2.047	2.022	2.026	2.029
#3	41.10	41.18	40.28	2.076	2.023	39.77	2.047	2.020	2.024	2.044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.914	2.028	2.074	2.074	2.045	2.026	2.053
Stddev	.001	.003	.010	.003	.005	.003	.002
%RSD	.0391	.1471	.4768	.1576	.2226	.1302	.0908
#1	1.913	2.026	2.065	2.070	2.050	2.029	2.054
#2	1.914	2.027	2.072	2.074	2.044	2.024	2.051
#3	1.915	2.031	2.084	2.077	2.041	2.024	2.054
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 17:42:19 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1783.7	5479.8	38845.	4086.0
Stddev	1.2	4.6	131.	21.5
%RSD	.06811	.08372	.33740	.52633
#1	1783.4	5485.0	38697.	4095.5
#2	1782.7	5478.2	38890.	4101.1
#3	1785.1	5476.3	38947.	4061.4

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 17:46:14 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0065	.0004	.0003	.0002	.0015	.0000	.0002	.0003
Stddev	.0004	.0108	.0004	.0002	.0001	.0017	.0000	.0002	.0001
%RSD	98.87	165.3	91.51	62.76	37.64	113.2	223.0	95.17	50.54
#1	.0005	.0050	.0006	.0006	.0001	.0029	.0001	.0003	.0004
#2	.0000	-.0082	.0006	.0001	.0002	-.0004	.0000	.0002	.0002
#3	.0008	-.0164	.0000	.0003	.0002	.0019	.0000	.0000	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0230	-.0051	.0102	.0001	F.0012	.1525	.0000	.0000
Stddev	.0001	.0020	.0209	.0057	.0000	.0004	.0042	.0001	.000
%RSD	20.83	8.846	411.9	55.26	62.32	35.20	2.780	285.0	1437.
#1	.0005	.0234	-.0034	.0038	.0000	.0017	.1526	.0001	-.0004
#2	.0004	.0249	.0149	.0142	.0001	.0011	.1567	-.0001	-.0002
#3	.0003	.0208	-.0267	.0127	.0001	.0009	.1483	.0001	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.0008	.0004	.0002	.0002	.0010	.0005	.0003	-.0001
Stddev	.0005	.0003	.0003	.0002	.0000	.0002	.0008	.0002	.0000
%RSD	73.29	45.18	73.26	105.4	12.78	16.97	155.6	56.34	44.52
#1	.0013	.0005	.0001	.0004	.0002	.0012	.0010	.0004	-.0001
#2	.0002	.0006	.0007	.0000	.0001	.0009	-.0004	.0004	-.0001
#3	.0007	.0011	.0005	.0001	.0002	.0010	.0010	.0001	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 17:46:14 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2066.8	5727.5	40579.	4140.0
Stddev	1.3	6.9	154.	48.6
%RSD	.06522	.12029	.37873	1.1732
#1	2067.2	5732.9	40402.	4195.5
#2	2068.0	5729.8	40656.	4119.1
#3	2065.3	5719.7	40679.	4105.4

Zoom In Zoom Out

Sample Name: FA43284-18 Acquired: 4/26/2017 17:50:28 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0002	.0054	-.0012	.0653	-.0001	47.52	-.0002	-.0002	.0007	.0016
Stddev	.0001	.0030	.0003	.0004	.0001	.08	.0000	.0001	.0001	.0002
%RSD	34.01	55.52	22.77	.5391	128.0	.1686	24.29	49.82	15.19	11.54
#1	.0002	.0069	-.0015	.0657	-.0001	47.59	-.0002	-.0002	.0006	.0014
#2	.0002	.0074	-.0011	.0651	-.0001	47.54	-.0001	-.0003	.0008	.0016
#3	.0003	.0020	-.0010	.0650	.0000	47.44	-.0002	-.0001	.0006	.0017

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0049	.9987	7.586	.0024	.0020	11.00	-.0003	.0019	.0008	-.0006
Stddev	.0025	.0138	.043	.0000	.0001	.03	.0001	.0002	.0007	.0018
%RSD	51.85	1.377	.5624	1.680	4.143	.2632	32.86	10.81	96.94	284.5
#1	.0078	1.005	7.628	.0025	.0019	11.00	-.0003	.0020	.0000	-.0021
#2	.0034	1.008	7.588	.0024	.0020	11.03	-.0003	.0019	.0009	-.0012
#3	.0035	.9830	7.542	.0024	.0021	10.97	-.0004	.0016	.0014	.0014

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	2.781	-.0005	.6377	.0015	.0001	.0041	.0117
Stddev	.003	.0002	.0020	.0001	.0005	.0001	.0001
%RSD	.1135	37.95	.3101	7.975	442.4	3.259	.7761
#1	2.780	-.0007	.6390	.0015	-.0002	.0041	.0117
#2	2.778	-.0003	.6386	.0017	.0007	.0043	.0117
#3	2.784	-.0004	.6354	.0015	-.0002	.0040	.0118

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1970.9	5609.8	40059.	4112.0
Stddev	3.0	8.3	42.	8.7
%RSD	.15419	.14843	.10517	.21272
#1	1972.3	5618.1	40099.	4114.1
#2	1972.9	5610.0	40063.	4119.6
#3	1967.4	5601.4	40015.	4102.4

Zoom In Zoom Out

Sample Name: FA43284-19 Acquired: 4/26/2017 17:54:40 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0038	1.970	.0562	.0212	-.0001	512.4	-.0013	.0005	.0034
Stddev	.0008	.072	.0027	.0006	.0002	2.8	.0003	.0005	.0011
%RSD	20.66	3.680	4.831	2.755	146.9	.5402	25.70	98.77	32.83
#1	.0041	2.053	.0554	.0206	-.0004	513.6	-.0016	.0010	.0032
#2	.0030	1.934	.0593	.0217	.0000	514.4	-.0010	.0006	.0046
#3	.0045	1.922	.0540	.0212	.0000	509.3	-.0012	.0000	.0024

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0052	.9876	21.06	63.83	.0318	.1862	F3100.	.0054	.0170
Stddev	.0014	.0152	.11	.41	.0003	.0011	40.	.0008	.0008
%RSD	27.47	1.535	.5347	.6472	.7936	.5864	1.292	15.08	4.544
#1	.0057	.9978	21.13	63.70	.0317	.1850	3082.	.0053	.0174
#2	.0036	.9947	21.12	64.29	.0317	.1869	3145.	.0046	.0175
#3	.0064	.9701	20.93	63.49	.0321	.1868	3071.	.0062	.0161

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0000	.0303	4.843	-.0043	5.509	.0447	.0052	.0241	.0439
Stddev	.005	.0013	.027	.0013	.022	.0039	.0055	.0012	.0005
%RSD	52550.	4.300	.5665	29.37	.4025	8.698	105.3	4.848	1.084
#1	-.0043	.0309	4.813	-.0042	5.519	.0420	.0096	.0242	.0437
#2	.0048	.0289	4.865	-.0031	5.524	.0430	.0070	.0253	.0445
#3	-.0005	.0313	4.853	-.0056	5.483	.0492	-.0010	.0230	.0436

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1634.0	5142.0	35410.	3971.4
Stddev	3.7	5.2	55.	23.0
%RSD	.22473	.10070	.15486	.57991
#1	1633.3	5147.5	35363.	3974.3
#2	1637.9	5141.2	35396.	3947.0
#3	1630.7	5137.2	35470.	3992.8

Zoom In Zoom Out

Sample Name: FA43285-5 Acquired: 4/26/2017 17:59:00 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0014	.4167	.1060	.0107	-.0006	541.2	-.0011	.0002	.0014
Stddev	.0003	.0255	.0025	.0014	.0004	.3	.0002	.0005	.0003
%RSD	20.96	6.121	2.355	13.40	74.48	.0607	18.69	195.1	24.40
#1	.0018	.4083	.1040	.0102	-.0002	540.9	-.0013	-.0002	.0010
#2	.0013	.3965	.1088	.0123	-.0005	541.5	-.0009	.0003	.0016
#3	.0013	.4454	.1052	.0096	-.0010	541.4	-.0012	.0007	.0015

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0035	.3037	26.73	279.8	.0062	.0489	F1878.	.0439	.0155
Stddev	.0013	.0244	.05	.3	.0002	.0002	21.	.0008	.0025
%RSD	38.48	8.020	.1898	.0997	3.713	.4410	1.098	1.746	16.21
#1	.0021	.2802	26.69	280.0	.0064	.0487	1900.	.0431	.0146
#2	.0036	.3021	26.78	279.8	.0062	.0489	1874.	.0440	.0183
#3	.0048	.3288	26.70	279.4	.0060	.0491	1859.	.0446	.0135

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0004	.0685	3.615	-.0024	9.114	.0231	-.0016	.0657	.0336
Stddev	.0030	.0016	.015	.0005	.005	.0041	.0039	.0006	.0004
%RSD	807.1	2.338	.4165	21.93	.0588	17.94	248.1	.8895	1.181
#1	-.0003	.0691	3.630	-.0021	9.116	.0262	-.0018	.0654	.0337
#2	.0026	.0697	3.613	-.0022	9.118	.0246	.0025	.0652	.0339
#3	-.0034	.0667	3.601	-.0030	9.108	.0184	-.0054	.0663	.0331

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1700.3	5204.8	36367.	3991.4
Stddev	1.0	4.3	154.	24.0
%RSD	.05704	.08273	.42229	.60193
#1	1699.2	5199.9	36299.	4017.0
#2	1700.7	5208.0	36259.	3969.3
#3	1701.1	5206.4	36543.	3987.9

Zoom In Zoom Out

Sample Name: FA43285-6 Acquired: 4/26/2017 18:03:21 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0010	2.939	.0045	.0222	-.0005	548.6	-.0013	.0008	.0039	.0028
Stddev	.0023	.035	.0051	.0004	.0003	1.5	.0003	.0002	.0010	.0011
%RSD	238.9	1.173	113.4	1.633	59.22	.2690	21.94	23.59	26.40	37.96
#1	-.0004	2.973	.0009	.0218	-.0007	547.0	-.0011	.0009	.0030	.0016
#2	-.0003	2.904	.0103	.0225	-.0007	549.9	-.0016	.0006	.0050	.0036
#3	.0036	2.940	.0022	.0223	-.0002	548.9	-.0012	.0009	.0038	.0033

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	1.730	18.97	197.7	.0378	.0099	275.0	.0079	.0146	.0035	.0213
Stddev	.014	.12	.9	.0007	.0008	2.3	.0011	.0025	.0034	.0056
%RSD	.8299	.6062	.4370	1.890	8.493	.8263	13.81	16.80	96.72	26.29
#1	1.746	19.02	196.7	.0372	.0089	273.4	.0090	.0119	.0054	.0231
#2	1.721	19.05	198.1	.0375	.0105	273.9	.0076	.0153	.0056	.0258
#3	1.722	18.84	198.3	.0386	.0103	277.6	.0069	.0167	-.0004	.0150

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	6.735	-.0013	7.204	.0756	.0020	.0108	.0298
Stddev	.035	.0012	.010	.0097	.0018	.0005	.0004
%RSD	.5151	89.68	.1447	12.80	87.57	5.002	1.320
#1	6.712	.0000	7.200	.0650	.0001	.0107	.0293
#2	6.719	-.0017	7.215	.0840	.0025	.0114	.0300
#3	6.775	-.0023	7.196	.0778	.0036	.0103	.0301

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1852.2	5478.2	38277.	4049.4
Stddev	5.3	7.2	44.	51.9
%RSD	.28791	.13227	.11606	1.2807
#1	1846.1	5470.0	38300.	4106.6
#2	1855.9	5480.7	38305.	4035.9
#3	1854.7	5483.9	38226.	4005.5

Zoom In Zoom Out

Sample Name: FA43285-7 Acquired: 4/26/2017 18:07:33 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0016	7.667	-.0015	.0721	-.0004	627.7	-.0014	.0033	.0139
Stddev	.0019	.032	.0038	.0009	.0003	2.4	.0005	.0001	.0006
%RSD	121.9	.4136	252.0	1.200	70.58	.3898	35.64	2.073	4.588
#1	.0035	7.686	-.0053	.0728	-.0005	629.5	-.0017	.0032	.0131
#2	-.0002	7.685	.0022	.0711	-.0005	625.0	-.0008	.0034	.0142
#3	.0014	7.630	-.0014	.0724	-.0001	628.8	-.0017	.0033	.0142

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0113	5.785	19.55	233.5	.5406	.0165	F616.0	.0107	.0155
Stddev	.0011	.031	.18	.8	.0026	.0005	4.1	.0005	.0019
%RSD	9.988	.5356	.9044	.3232	.4722	3.012	.6600	4.739	12.23
#1	.0101	5.760	19.73	234.1	.5395	.0159	619.5	.0103	.0134
#2	.0124	5.774	19.53	232.6	.5389	.0167	611.6	.0113	.0158
#3	.0115	5.819	19.38	233.7	.5436	.0169	616.9	.0105	.0171

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0038	.0015	11.48	-.0016	8.473	.0799	.0018	.0162	.0443
Stddev	.0045	.0073	.01	.0011	.025	.0006	.0038	.0016	.0002
%RSD	120.1	495.2	.1086	73.09	.3014	.7778	208.4	9.624	.3996
#1	.0075	-.0042	11.46	-.0018	8.485	.0797	.0058	.0162	.0443
#2	-.0013	.0097	11.49	-.0025	8.444	.0794	.0012	.0147	.0444
#3	.0051	-.0011	11.48	-.0003	8.490	.0806	-.0016	.0178	.0441

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1797.6	5416.0	37828.	4023.2
Stddev	3.0	11.6	148.	23.4
%RSD	.16930	.21464	.39109	.58268
#1	1801.1	5425.0	37962.	4025.9
#2	1796.4	5420.0	37853.	4045.2
#3	1795.5	5402.8	37670.	3998.6

Zoom In Zoom Out

Sample Name: FA43285-8 Acquired: 4/26/2017 18:11:41 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0027	3.337	-.0058	.0401	-.0006	1132.	.0065	.0012	.0065
Stddev	.0034	.014	.0045	.0002	.0004	1.	.0004	.0007	.0011
%RSD	127.1	.4034	77.53	.4615	68.75	.1207	6.446	63.41	16.80
#1	.0014	3.323	-.0006	.0400	-.0002	1131.	.0067	.0007	.0057
#2	.0001	3.350	-.0083	.0403	-.0007	1134.	.0060	.0008	.0077
#3	.0065	3.339	-.0085	.0402	-.0011	1132.	.0067	.0020	.0060

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0098	3.938	31.55	604.7	.1216	.0061	F2718.	.0069	.0229
Stddev	.0021	.014	.20	1.5	.0004	.0008	93.	.0006	.0021
%RSD	21.46	.3520	.6382	.2463	.3500	12.93	3.406	9.414	9.097
#1	.0120	3.931	31.46	603.1	.1217	.0052	2825.	.0071	.0210
#2	.0097	3.954	31.78	605.0	.1220	.0066	2675.	.0062	.0251
#3	.0078	3.930	31.41	606.0	.1212	.0066	2656.	.0074	.0225

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0032	-.0072	7.409	-.0023	F22.87	.0484	-.0030	.0050	.0568
Stddev	.0020	.0031	.024	.0011	.26	.0012	.0087	.0011	.0004
%RSD	62.35	42.58	.3244	47.62	1.128	2.458	290.5	22.07	.7433
#1	-.0016	-.0105	7.382	-.0033	22.58	.0473	.0070	.0037	.0563
#2	-.0055	-.0044	7.415	-.0023	23.02	.0481	-.0078	.0053	.0571
#3	-.0026	-.0067	7.429	-.0011	23.02	.0497	-.0082	.0058	.0571

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1595.0	4970.0	34752.	3924.2
Stddev	2.9	12.3	48.	13.5
%RSD	.18365	.24661	.13755	.34517
#1	1594.8	4982.5	34806.	3939.2
#2	1598.1	4969.4	34732.	3920.4
#3	1592.2	4958.0	34716.	3913.0

Zoom In Zoom Out

Sample Name: FA43285-9 Acquired: 4/26/2017 18:16:00 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0028	2.316	.0053	.0390	-.0003	660.7	-.0009	.0014	.0036
Stddev	.0006	.044	.0034	.0026	.0002	1.8	.0003	.0004	.0006
%RSD	21.66	1.900	64.49	6.763	76.94	.2708	36.36	25.53	17.68
#1	.0031	2.326	.0064	.0392	-.0003	662.7	-.0011	.0013	.0041
#2	.0031	2.268	.0015	.0415	-.0005	660.0	-.0005	.0012	.0040
#3	.0021	2.355	.0080	.0362	-.0001	659.3	-.0012	.0018	.0029

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0050	5.130	17.40	332.1	.6502	.0061	F1393.	.0017	.0189
Stddev	.0012	.017	.34	.6	.0007	.0005	34.	.0008	.0013
%RSD	24.49	.3399	1.972	.1778	.1066	8.909	2.431	45.81	6.724
#1	.0062	5.149	17.79	332.6	.6505	.0060	1400.	.0013	.0203
#2	.0049	5.124	17.19	332.2	.6507	.0066	1422.	.0012	.0183
#3	.0038	5.116	17.21	331.4	.6494	.0056	1355.	.0026	.0180

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0034	-.0022	5.707	-.0017	13.53	.0386	.0013	.0068	.0380
Stddev	.0018	.0067	.009	.0014	.05	.0005	.0019	.0020	.0004
%RSD	51.07	298.7	.1643	84.64	.3881	1.171	147.7	30.25	.9391
#1	-.0022	.0051	5.698	-.0032	13.59	.0382	.0006	.0089	.0378
#2	-.0027	-.0080	5.705	-.0012	13.49	.0391	.0035	.0049	.0385
#3	-.0054	-.0038	5.717	-.0006	13.52	.0385	-.0002	.0065	.0379

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1713.9	5215.8	36602.	3987.2
Stddev	2.5	10.9	49.	12.8
%RSD	.14675	.20847	.13383	.32110
#1	1716.5	5227.2	36659.	3984.8
#2	1713.7	5214.6	36572.	3975.8
#3	1711.5	5205.6	36577.	4001.0

Zoom In Zoom Out

Sample Name: FA43252-6 Acquired: 4/26/2017 18:20:19 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0001	.0105	-.0020	.0588	-.0001	44.21	-.0001	-.0001	.0012	.0051
Stddev	.0001	.0115	.0005	.0000	.0000	.12	.0001	.0000	.0001	.0002
%RSD	46.98	109.6	23.05	.0495	28.28	.2755	69.77	42.86	7.387	4.503
#1	.0001	.0222	-.0019	.0588	-.0001	44.31	-.0001	-.0001	.0012	.0054
#2	.0001	-.0007	-.0025	.0588	-.0001	44.08	.0000	-.0002	.0011	.0050
#3	.0002	.0099	-.0016	.0588	-.0001	44.24	-.0002	-.0001	.0013	.0050

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.0032	1.029	7.937	.0025	.0013	10.09	-.0002	.0016	.0001	-.0019
Stddev	.0031	.024	.055	.0000	.0001	.04	.0000	.0007	.0007	.0023
%RSD	95.49	2.319	.6982	1.970	9.493	.3581	9.563	43.89	981.7	123.4
#1	.0048	1.031	7.910	.0025	.0014	10.12	-.0002	.0010	-.0005	.0006
#2	-.0003	1.005	7.900	.0025	.0014	10.11	-.0002	.0024	-.0001	-.0023
#3	.0052	1.052	8.001	.0024	.0012	10.05	-.0003	.0013	.0008	-.0039

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	2.727	-.0005	.6188	.0012	-.0006	.0037	.0043
Stddev	.005	.0003	.0011	.0001	.0008	.0003	.0001
%RSD	.1731	74.39	.1707	8.279	121.8	8.023	1.323
#1	2.732	-.0001	.6199	.0013	-.0004	.0036	.0043
#2	2.726	-.0007	.6178	.0011	.0000	.0040	.0042
#3	2.723	-.0007	.6188	.0013	-.0015	.0034	.0043

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1968.2	5609.1	39873.	4103.2
Stddev	6.2	17.1	48.	16.3
%RSD	.31436	.30440	.11913	.39721
#1	1963.8	5592.3	39901.	4089.7
#2	1975.3	5626.4	39901.	4121.3
#3	1965.5	5608.7	39818.	4098.6

Zoom In Zoom Out

Sample Name: FA43249-18 Acquired: 4/26/2017 18:24:32 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0024	4.092	-.0027	.0336	-.0005	698.6	-.0011	.0014	.0077
Stddev	.0011	.049	.0023	.0003	.0001	.6	.0002	.0002	.0005
%RSD	46.41	1.203	85.99	.8904	17.04	.0874	20.08	16.69	6.335
#1	.0036	4.127	-.0052	.0338	-.0005	699.1	-.0008	.0016	.0071
#2	.0021	4.113	-.0021	.0338	-.0006	698.8	-.0012	.0014	.0077
#3	.0015	4.036	-.0007	.0333	-.0005	697.9	-.0012	.0012	.0081

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0114	4.042	23.61	287.5	.1430	.0245	F1878.	.0036	.0187
Stddev	.0008	.013	.04	.6	.0007	.0009	38.	.0004	.0031
%RSD	7.421	.3251	.1600	.2037	.4891	3.749	2.039	10.04	16.33
#1	.0110	4.041	23.59	288.1	.1434	.0256	1867.	.0037	.0220
#2	.0123	4.029	23.58	286.9	.1422	.0239	1846.	.0033	.0160
#3	.0108	4.056	23.65	287.4	.1435	.0241	1920.	.0040	.0182

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0008	-.0033	7.922	-.0016	12.08	.0540	-.0084	.0193	.0553
Stddev	.0068	.0024	.028	.0014	.02	.0002	.0008	.0006	.0004
%RSD	876.8	70.27	.3482	84.56	.1927	.3214	9.221	3.221	.6830
#1	.0054	-.0028	7.904	-.0023	12.08	.0542	-.0075	.0186	.0557
#2	-.0082	-.0059	7.909	-.0026	12.10	.0539	-.0088	.0195	.0551
#3	.0005	-.0013	7.954	.0000	12.05	.0540	-.0089	.0197	.0551

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1685.6	5175.7	36373.	4002.2
Stddev	3.0	6.8	96.	9.8
%RSD	.17528	.13042	.26484	.24518
#1	1684.3	5170.3	36450.	4009.1
#2	1689.0	5183.2	36403.	4006.4
#3	1683.5	5173.6	36265.	3990.9

Zoom In Zoom Out

Sample Name: FA43249-19 Acquired: 4/26/2017 18:28:49 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0015	.1624	-.0072	.0206	-.0001	744.6	-.0015	-.0004	.0229
Stddev	.0014	.0364	.0007	.0006	.0003	.9	.0001	.0007	.0009
%RSD	93.60	22.41	9.911	2.923	206.1	.1194	7.386	187.8	4.007
#1	.0005	.1248	-.0069	.0199	-.0004	745.5	-.0015	-.0003	.0232
#2	.0031	.1648	-.0080	.0208	.0001	743.8	-.0014	.0003	.0219
#3	.0010	.1975	-.0066	.0211	-.0001	744.3	-.0017	-.0010	.0236

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0028	.1027	18.47	128.4	.0017	.0179	F1117.	-.0021	.0104
Stddev	.0014	.0112	.10	.3	.0001	.0006	16.	.0010	.0055
%RSD	48.77	10.88	.5630	.2698	6.825	3.135	1.400	46.27	53.19
#1	.0042	.0959	18.37	128.6	.0017	.0176	1128.	-.0018	.0120
#2	.0028	.0966	18.46	128.6	.0016	.0186	1125.	-.0032	.0149
#3	.0014	.1156	18.58	128.0	.0019	.0176	1099.	-.0013	.0042

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0022	.0164	1.164	-.0031	8.068	.0104	.0005	.0018	.0235
Stddev	.0060	.0150	.003	.0005	.019	.0024	.0037	.0013	.0001
%RSD	275.9	91.36	.2871	14.55	.2324	22.63	714.1	69.34	.4534
#1	.0008	-.0008	1.168	-.0026	8.088	.0086	.0019	.0007	.0234
#2	-.0030	.0269	1.161	-.0035	8.063	.0096	.0033	.0016	.0235
#3	.0088	.0232	1.164	-.0033	8.052	.0131	-.0037	.0032	.0235

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1749.5	5252.8	36800.	4012.5
Stddev	5.1	9.1	107.	11.2
%RSD	.28878	.17409	.29128	.27968
#1	1755.1	5259.7	36685.	4000.1
#2	1748.2	5256.3	36896.	4015.5
#3	1745.3	5242.4	36821.	4021.9

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 18:33:10 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2523	40.49	2.032	2.072	2.021	40.50	2.063	2.056	2.035	2.017
Stddev	.0004	.12	.002	.004	.007	.14	.002	.001	.005	.001
%RSD	.1426	.2868	.0929	.1696	.3441	.3402	.1025	.0264	.2583	.0553
#1	.2526	40.60	2.031	2.069	2.027	40.60	2.065	2.056	2.038	2.018
#2	.2519	40.51	2.031	2.076	2.024	40.55	2.062	2.056	2.038	2.016
#3	.2525	40.37	2.034	2.072	2.014	40.34	2.060	2.055	2.029	2.016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.61	41.19	39.91	2.071	2.029	39.52	2.061	2.020	2.042	2.046
Stddev	.11	.08	.24	.006	.001	.11	.000	.002	.004	.003
%RSD	.2674	.1915	.6064	.2836	.0563	.2733	.0136	.0800	.1878	.1471
#1	40.67	41.26	40.19	2.077	2.028	39.62	2.061	2.021	2.038	2.046
#2	40.67	41.21	39.77	2.072	2.029	39.40	2.061	2.019	2.042	2.050
#3	40.48	41.10	39.77	2.065	2.031	39.54	2.060	2.018	2.046	2.044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.927	2.048	2.068	2.071	2.047	2.027	2.060
Stddev	.002	.003	.002	.004	.002	.004	.003
%RSD	.0770	.1388	.1145	.1760	.0750	.2111	.1672
#1	1.925	2.050	2.068	2.075	2.049	2.027	2.063
#2	1.928	2.045	2.071	2.069	2.047	2.031	2.059
#3	1.928	2.050	2.066	2.068	2.046	2.022	2.056
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 18:33:10 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1780.1	5442.7	38863.	4076.7
Stddev	1.9	5.8	162.	33.2
%RSD	.10936	.10707	.41661	.81427
#1	1777.9	5436.3	38713.	4043.8
#2	1781.4	5447.6	38841.	4076.1
#3	1781.1	5444.3	39035.	4110.2

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 18:37:07 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0026	.0002	.0004	.0003	.0090	.0002	.0003	.0006
Stddev	.0001	.0085	.0007	.0002	.0001	.0017	.0001	.0002	.0001
%RSD	32.79	329.1	368.7	37.38	38.96	19.06	39.78	60.45	9.356
#1	.0004	-.0060	.0000	.0005	.0003	.0109	.0003	.0005	.0007
#2	.0003	.0071	.0009	.0003	.0002	.0086	.0003	.0001	.0006
#3	.0006	-.0088	-.0004	.0005	.0004	.0075	.0001	.0004	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0320	.0104	.0092	.0006	F.0014	.1735	.0002	.0003
Stddev	.0001	.0006	.0052	.0165	.0001	.0005	.0024	.0002	.0004
%RSD	12.40	1.813	50.30	180.0	10.65	38.33	1.360	117.7	133.5
#1	.0013	.0315	.0156	.0075	.0005	.0019	.1759	.0002	.0006
#2	.0011	.0326	.0051	-.0064	.0006	.0012	.1732	.0004	-.0001
#3	.0011	.0318	.0104	.0265	.0006	.0009	.1713	.0000	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	-.0006	.0003	.0002	.0005	.0015	.0004	.0007	.0001
Stddev	.0014	.0004	.0002	.0002	.0001	.0001	.0004	.0002	.0001
%RSD	203.1	58.49	79.87	81.48	11.19	6.455	88.13	26.43	105.1
#1	.0004	-.0006	.0005	.0004	.0005	.0015	.0009	.0007	.0001
#2	.0023	-.0003	.0004	.0002	.0006	.0016	.0003	.0005	.0001
#3	-.0005	-.0010	.0000	.0000	.0005	.0014	.0002	.0009	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 18:37:07 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2058.3	5701.7	40401.	4098.3
Stddev	4.3	6.9	221.	25.3
%RSD	.21003	.12039	.54794	.61737
#1	2056.5	5695.0	40147.	4069.2
#2	2055.2	5701.3	40553.	4115.5
#3	2063.2	5708.7	40502.	4110.1

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: FA43249-20 Acquired: 4/26/2017 18:41:23 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0044	6.381	.0069	.0394	.0001	614.6	-.0010	.0021	.0082
Stddev	.0008	.056	.0060	.0007	.0002	.1	.0003	.0006	.0017
%RSD	18.82	.8762	86.73	1.744	195.5	.0234	31.63	27.55	20.78
#1	.0035	6.338	.0032	.0393	-.0001	614.5	-.0007	.0026	.0072
#2	.0044	6.361	.0137	.0389	.0000	614.8	-.0010	.0023	.0074
#3	.0052	6.444	.0037	.0402	.0004	614.6	-.0013	.0015	.0102

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0074	4.301	27.77	253.1	.0710	.0598	F2706.	.0049	.0144
Stddev	.0012	.006	.25	.5	.0005	.0001	40.	.0006	.0028
%RSD	16.53	.1423	.9161	.1855	.7101	.1598	1.479	12.62	19.15
#1	.0088	4.307	27.49	253.4	.0705	.0599	2732.	.0052	.0136
#2	.0066	4.294	27.82	253.3	.0710	.0599	2725.	.0042	.0122
#3	.0069	4.301	27.99	252.6	.0715	.0598	2660.	.0053	.0175

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0044	.1749	9.337	-.0034	10.82	.1607	-.0005	.0235	.0293
Stddev	.0017	.0040	.011	.0005	.02	.0248	.0033	.0014	.0003
%RSD	39.86	2.285	.1151	16.11	.1783	15.44	678.2	5.762	1.001
#1	.0024	.1781	9.350	-.0035	10.80	.1407	-.0017	.0219	.0296
#2	.0055	.1704	9.330	-.0028	10.84	.1529	.0032	.0242	.0290
#3	.0052	.1761	9.332	-.0039	10.81	.1885	-.0030	.0243	.0294

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1636.8	5124.0	35730.	4010.6
Stddev	3.4	9.2	128.	5.8
%RSD	.20480	.17956	.35871	.14478
#1	1636.5	5116.9	35866.	4005.4
#2	1640.3	5120.8	35612.	4009.6
#3	1633.7	5134.4	35712.	4016.9

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 19:23:16 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2515	40.41	2.011	2.065	2.071	40.38	2.077	2.061	2.019	2.043
Stddev	.0002	.07	.005	.011	.007	.04	.003	.003	.006	.001
%RSD	.0725	.1766	.2716	.5140	.3537	.1031	.1188	.1244	.3106	.0314
#1	.2516	40.49	2.004	2.077	2.078	40.35	2.074	2.059	2.019	2.042
#2	.2515	40.37	2.013	2.060	2.063	40.35	2.078	2.062	2.025	2.043
#3	.2513	40.37	2.015	2.057	2.073	40.42	2.079	2.064	2.013	2.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.46	42.14	40.59	2.083	2.018	42.18	2.030	2.062	2.011	2.017
Stddev	.11	.03	.09	.007	.003	.16	.003	.002	.005	.006
%RSD	.2743	.0739	.2148	.3470	.1636	.3699	.1304	.1137	.2267	.2890
#1	41.53	42.15	40.58	2.085	2.015	42.31	2.028	2.061	2.008	2.012
#2	41.33	42.10	40.51	2.089	2.018	42.01	2.029	2.065	2.010	2.017
#3	41.53	42.16	40.68	2.075	2.021	42.23	2.033	2.061	2.016	2.023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.894	2.002	2.123	2.094	2.073	2.034	2.072
Stddev	.004	.006	.010	.004	.001	.004	.002
%RSD	.1933	.2998	.4776	.1899	.0679	.2082	.0883
#1	1.891	1.997	2.134	2.097	2.073	2.032	2.070
#2	1.894	2.001	2.114	2.095	2.075	2.039	2.072
#3	1.898	2.008	2.122	2.089	2.072	2.032	2.073
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 19:23:16 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1790.9	5560.6	38785.	4019.5
Stddev	1.5	9.9	140.	42.2
%RSD	.08446	.17774	.36107	1.0488
#1	1791.1	5570.0	38794.	4053.9
#2	1789.3	5561.5	38641.	4032.2
#3	1792.3	5550.3	38921.	3972.5

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 19:27:13 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0022	.0001	.0008	.0005	.0059	.0002	.0003	.0005
Stddev	.0004	.0157	.0005	.0002	.0001	.0015	.0001	.0001	.0001
%RSD	85.06	705.0	975.9	25.12	19.51	24.73	45.88	26.84	16.24
#1	.0006	-.0170	.0006	.0006	.0004	.0049	.0003	.0003	.0005
#2	.0006	.0142	-.0005	.0007	.0004	.0076	.0001	.0004	.0006
#3	.0000	-.0039	.0000	.0010	.0006	.0053	.0002	.0002	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0274	.0257	.0021	.0006	F.0014	.0938	.0002	.0002
Stddev	.0003	.0025	.0255	.0338	.0001	.0005	.0116	.0001	.0004
%RSD	32.14	8.977	98.97	1593.	13.95	38.20	12.34	63.12	228.2
#1	.0011	.0261	-.0014	-.0344	.0006	.0020	.1072	.0003	.0002
#2	.0007	.0302	.0294	.0084	.0006	.0013	.0872	.0002	.0006
#3	.0007	.0257	.0492	.0324	.0005	.0009	.0871	.0001	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	-.0006	.0001	.0005	.0006	.0015	.0002	.0005	.0001
Stddev	.0008	.0016	.0003	.0003	.0003	.0002	.0007	.0000	.0001
%RSD	47.97	245.1	380.8	60.59	51.79	10.93	450.0	3.161	90.40
#1	.0018	-.0021	.0004	.0005	.0003	.0017	.0004	.0005	.0002
#2	.0024	-.0009	.0000	.0007	.0004	.0016	.0007	.0005	.0001
#3	.0008	.0011	-.0002	.0002	.0009	.0014	-.0006	.0005	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 19:27:13 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2073.9	5819.3	40536.	4017.0
Stddev	3.3	9.9	168.	33.0
%RSD	.15766	.17070	.41466	.82176
#1	2074.1	5829.0	40410.	4054.9
#2	2077.0	5819.9	40471.	3994.7
#3	2070.5	5809.1	40727.	4001.3

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 21:04:23 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2511	40.59	2.037	2.076	2.042	40.44	2.079	2.068	2.032	2.033
Stddev	.0011	.09	.005	.003	.002	.06	.001	.003	.002	.003
%RSD	.4332	.2282	.2691	.1459	.0975	.1434	.0687	.1494	.1013	.1654
#1	.2516	40.52	2.033	2.079	2.040	40.39	2.078	2.065	2.034	2.031
#2	.2499	40.55	2.034	2.074	2.041	40.42	2.078	2.068	2.031	2.031
#3	.2518	40.70	2.043	2.074	2.044	40.50	2.080	2.071	2.031	2.037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.17	41.81	39.82	2.073	2.032	36.90	2.056	2.050	2.038	2.047
Stddev	.03	.05	.01	.005	.004	.13	.004	.003	.004	.008
%RSD	.0652	.1230	.0150	.2341	.2128	.3424	.2172	.1217	.2207	.3736
#1	40.20	41.75	39.82	2.079	2.027	37.03	2.051	2.052	2.035	2.042
#2	40.17	41.85	39.82	2.071	2.031	36.77	2.057	2.047	2.036	2.043
#3	40.15	41.82	39.83	2.070	2.036	36.91	2.060	2.049	2.043	2.055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.921	2.038	2.109	2.081	2.072	2.037	2.074
Stddev	.005	.004	.004	.001	.003	.001	.001
%RSD	.2702	.2131	.1779	.0546	.1451	.0663	.0434
#1	1.915	2.036	2.106	2.083	2.073	2.037	2.073
#2	1.921	2.034	2.109	2.081	2.074	2.038	2.074
#3	1.926	2.042	2.113	2.081	2.069	2.035	2.075
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 21:04:23 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1781.0	5495.6	38879.	4023.3
Stddev	1.2	12.5	217.	17.7
%RSD	.06742	.22693	.55933	.43922
#1	1782.3	5503.2	38640.	4011.9
#2	1780.7	5502.3	38929.	4014.4
#3	1780.0	5481.2	39066.	4043.7

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 21:08:20 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	-.0029	.0002	.0004	.0001	.0000	.0000	.0001	.0003
Stddev	.0001	.0079	.0003	.0001	.0001	.001	.0000	.0000	.0003
%RSD	10.05	273.5	138.7	37.57	48.83	1676.	102.4	58.36	95.96
#1	.0008	-.0119	.0000	.0005	.0002	-.0002	.0000	.0001	.0006
#2	.0007	.0028	.0005	.0005	.0001	-.0004	.0001	.0001	.0001
#3	.0007	.0005	.0001	.0002	.0001	.0005	.0000	.0000	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0228	.0439	-.0026	.0001	F.0013	.4453	.0000	.0002
Stddev	.0002	.0024	.0069	.0184	.0000	.0005	.0150	.0001	.0003
%RSD	33.48	10.71	15.81	704.4	13.35	36.08	3.378	701.1	195.5
#1	.0006	.0251	.0359	.0177	.0001	.0019	.4622	-.0001	.0003
#2	.0005	.0231	.0482	-.0074	.0001	.0011	.4401	.0001	-.0002
#3	.0009	.0202	.0475	-.0181	.0001	.0010	.4335	.0000	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0009	.0000	.0002	.0002	.0012	.0011	.0001	.0000
Stddev	.0006	.0019	.0003	.0001	.0000	.0002	.0007	.0001	.000
%RSD	138.4	214.2	761.3	62.85	24.31	16.58	60.92	158.0	60.28
#1	-.0001	-.0011	-.0003	.0004	.0002	.0014	.0018	-.0001	.0000
#2	.0004	.0027	.0003	.0001	.0002	.0011	.0006	.0002	-.0001
#3	.0011	.0012	.0001	.0002	.0001	.0011	.0008	.0001	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

7.1

7

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 21:08:20 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2054.9	5658.6	40394.	4088.1
Stddev	6.5	9.5	139.	9.3
%RSD	.31410	.16840	.34461	.22651
#1	2048.2	5648.4	40398.	4098.2
#2	2061.1	5667.2	40253.	4086.2
#3	2055.3	5660.3	40531.	4080.0

Zoom In Zoom Out

Sample Name: CRIA Acquired: 4/26/2017 21:43:14 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)	(Y_3600)
Avg	.0090	.2069	.0105	.2136	.0050	1.069	.0054	.0542	.0110	.0272
Stddev	.0006	.0056	.0002	.0007	.0000	.006	.0001	.0001	.0003	.0004
%RSD	6.351	2.715	2.176	.3250	.7473	.5321	1.152	.1956	2.540	1.432
#1	.0085	.2020	.0104	.2137	.0050	1.074	.0053	.0542	.0107	.0274
#2	.0096	.2130	.0103	.2143	.0050	1.063	.0053	.0544	.0111	.0267
#3	.0089	.2056	.0107	.2129	.0050	1.071	.0054	.0542	.0112	.0274

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
IS Ref	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)
Avg	.3062	10.52	5.146	.0165	.0542	9.797	.0443	.0053	.0062	.0094
Stddev	.0002	.05	.036	.0001	.0001	.086	.0004	.0004	.0002	.0005
%RSD	.0675	.4329	.6975	.5737	.2571	.8793	.8424	7.152	2.643	5.782
#1	.3064	10.51	5.143	.0164	.0543	9.705	.0440	.0053	.0064	.0095
#2	.3063	10.57	5.113	.0164	.0541	9.808	.0447	.0050	.0061	.0100
#3	.3060	10.48	5.184	.0166	.0543	9.876	.0443	.0057	.0061	.0089

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0223	.0569	.0106	.0105	.0099	.0512	.0216
Stddev	.0003	.0003	.0002	.0001	.0006	.0002	.0001
%RSD	1.525	.4399	1.506	.9001	5.710	.4250	.2495
#1	.0221	.0571	.0105	.0106	.0094	.0514	.0216
#2	.0222	.0569	.0107	.0104	.0098	.0513	.0217
#3	.0227	.0566	.0104	.0104	.0105	.0510	.0216

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1998.5	5585.1	40353.	4156.5
Stddev	4.2	7.9	108.	16.7
%RSD	.21263	.14156	.26662	.40276
#1	2001.8	5592.5	40456.	4170.7
#2	2000.1	5585.9	40362.	4160.6
#3	1993.7	5576.8	40241.	4138.0

Zoom In Zoom Out

Sample Name: ICSA Acquired: 4/26/2017 21:47:25 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0010	F512.7	-.0014	.0006	.0000	484.5	.0011	.0003	.0006
Stddev	.0000	3.4	.0007	.0001	.000	.2	.0000	.0000	.0004
%RSD	2.557	.6697	50.31	17.92	217.2	.0513	4.471	9.138	72.47
#1	.0010	516.4	-.0015	.0005	.0000	484.8	.0010	.0003	.0001
#2	.0011	509.6	-.0020	.0007	-.0001	484.4	.0011	.0003	.0010
#3	.0011	512.1	-.0006	.0005	.0000	484.3	.0011	.0003	.0006

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	-.0002	168.6	.2456	490.0	.0002	.0003	1.199	-.0001	.0025
Stddev	.0003	.1	.0098	.8	.0001	.0001	.028	.0002	.0013
%RSD	148.3	.0430	3.973	.1640	25.14	34.32	2.291	342.8	51.32
#1	-.0001	168.5	.2568	490.0	.0003	.0002	1.171	-.0003	.0020
#2	-.0005	168.6	.2410	489.2	.0002	.0003	1.201	.0000	.0040
#3	.0000	168.6	.2389	490.8	.0003	.0003	1.225	.0001	.0016

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0014	-.0033	.0180	.0024	.0004	-.0004	.0006	.0001	.0025
Stddev	.0012	.0018	.0004	.0000	.0001	.0003	.0010	.0001	.0001
%RSD	83.29	52.54	2.132	1.741	32.49	79.47	165.1	95.47	4.581
#1	.0009	-.0053	.0182	.0025	.0003	-.0002	-.0005	.0001	.0023
#2	.0027	-.0028	.0182	.0024	.0005	-.0002	.0008	.0000	.0026
#3	.0005	-.0019	.0175	.0024	.0003	-.0007	.0015	.0002	.0025

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1590.8	5049.1	35403.	3987.2
Stddev	2.4	7.0	63.	18.2
%RSD	.15151	.13796	.17935	.45740
#1	1591.6	5044.5	35383.	3982.6
#2	1588.1	5045.7	35475.	4007.3
#3	1592.7	5057.1	35353.	3971.7

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 4/26/2017 21:51:47 Type: Unk
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	F.9632	F510.2	1.133	.5246	.4934	478.4	.9534	.4766	.5071
Stddev	.0010	11.8	.001	.0032	.0031	4.7	.0006	.0004	.0008
%RSD	.0989	2.318	.1065	.6027	.6252	.9810	.0647	.0847	.1540
#1	.9622	523.2	1.134	.5281	.4969	482.3	.9535	.4762	.5064
#2	.9631	500.1	1.133	.5239	.4919	473.2	.9540	.4770	.5069
#3	.9641	507.3	1.132	.5219	.4913	479.6	.9527	.4766	.5080

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.5370	170.0	.1750	494.1	.5033	1.032	.9704	.9559	.9769
Stddev	.0005	.9	.0066	2.9	.0018	.001	.0269	.0004	.0062
%RSD	.0887	.5493	3.774	.5916	.3571	.1078	2.775	.0442	.6373
#1	.5365	171.1	.1802	497.5	.5013	1.033	.9994	.9556	.9703
#2	.5372	169.7	.1676	492.6	.5042	1.031	.9656	.9564	.9778
#3	.5375	169.4	.1773	492.3	.5045	1.031	.9462	.9557	.9827

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	1.063	1.069	.0279	.9845	1.076	1.061	1.011	.4807	.9554
Stddev	.003	.006	.0010	.0011	.006	.004	.004	.0013	.0006
%RSD	.2555	.5878	3.590	.1098	.5861	.4240	.3870	.2668	.0634
#1	1.065	1.072	.0278	.9841	1.083	1.057	1.010	.4792	.9547
#2	1.063	1.062	.0290	.9836	1.073	1.060	1.009	.4815	.9558
#3	1.060	1.073	.0270	.9857	1.072	1.066	1.016	.4813	.9557

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1549.6	5059.7	35155.	3899.4
Stddev	5.0	.9	185.	30.4
%RSD	.32128	.01731	.52524	.78046
#1	1551.9	5060.7	35284.	3864.5
#2	1553.0	5059.1	35238.	3912.7
#3	1543.9	5059.4	34943.	3920.8

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 21:56:03 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2548	40.72	2.083	2.096	1.974	40.47	2.080	2.075	2.065	2.012
Stddev	.0007	.05	.002	.002	.000	.07	.001	.001	.002	.006
%RSD	.2819	.1230	.0935	.1006	.0165	.1652	.0353	.0279	.0940	.2783
#1	.2547	40.77	2.084	2.098	1.974	40.55	2.081	2.075	2.067	2.012
#2	.2542	40.67	2.081	2.095	1.974	40.42	2.080	2.075	2.063	2.007
#3	.2556	40.73	2.085	2.094	1.974	40.45	2.080	2.076	2.064	2.018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.67	41.05	38.97	2.087	2.056	38.33	2.108	2.018	2.075	2.102
Stddev	.05	.05	.05	.007	.003	.09	.002	.006	.005	.003
%RSD	.1306	.1244	.1332	.3509	.1395	.2372	.1045	.2815	.2558	.1253
#1	38.71	41.08	39.03	2.094	2.053	38.32	2.106	2.019	2.069	2.100
#2	38.68	40.99	38.93	2.079	2.055	38.43	2.109	2.022	2.074	2.105
#3	38.61	41.07	38.95	2.087	2.059	38.25	2.111	2.011	2.080	2.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Elem	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.962	2.115	2.054	2.076	2.042	2.044	2.085
Stddev	.002	.005	.004	.008	.004	.003	.001
%RSD	.0882	.2548	.2034	.4027	.2177	.1395	.0366
#1	1.960	2.110	2.056	2.081	2.047	2.045	2.085
#2	1.963	2.114	2.049	2.066	2.040	2.042	2.085
#3	1.962	2.121	2.057	2.079	2.038	2.047	2.084
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/26/2017 21:56:03 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1773.6	5362.5	38952.	4108.2
Stddev	1.1	6.3	81.	16.3
%RSD	.06290	.11724	.20859	.39689
#1	1773.1	5367.8	38859.	4098.8
#2	1772.8	5364.3	39009.	4098.7
#3	1774.8	5355.6	38989.	4127.0

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 22:00:00 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0057	-.0002	.0002	.0001	.0029	.0001	.0003	-.0001
Stddev	.0002	.0049	.0006	.0000	.0001	.0021	.0000	.0001	.0001
%RSD	147.4	85.97	242.6	22.45	49.27	72.43	52.73	52.76	91.13
#1	.0004	-.0001	-.0009	.0002	.0002	.0016	.0001	.0004	.0000
#2	.0000	-.0080	-.0001	.0003	.0001	.0054	.0001	.0003	-.0001
#3	.0000	-.0092	.0002	.0002	.0001	.0018	.0001	.0001	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0283	.0382	.0142	.0001	F.0013	.2725	.0000	.0005
Stddev	.0004	.0090	.0289	.0224	.0000	.0003	.0055	.0003	.0005
%RSD	62.40	31.65	75.65	157.9	72.15	23.71	2.021	716.8	110.8
#1	.0002	.0373	.0136	.0398	.0001	.0016	.2661	.0003	-.0001
#2	.0010	.0282	.0701	.0044	.0000	.0012	.2756	-.0001	.0008
#3	.0006	.0194	.0310	-.0017	.0001	.0010	.2756	-.0001	.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0009	.0000	.0000	.0002	.0010	.0005	.0002	-.0001
Stddev	.0008	.0007	.0003	.0002	.0001	.0001	.0005	.0001	.0000
%RSD	274.6	81.34	9968.	4346.	28.03	9.120	96.61	53.48	24.12
#1	.0012	-.0002	.0003	-.0002	.0002	.0011	.0006	.0003	-.0001
#2	-.0005	-.0008	-.0002	.0000	.0002	.0010	.0009	.0001	-.0001
#3	.0002	-.0016	.0000	.0002	.0003	.0010	.0000	.0002	-.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/26/2017 22:00:00 Type: QC
Method: 60102007_041712(v675) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE02: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2068.6	5648.6	40572.	4143.8
Stddev	5.7	10.1	157.	8.0
%RSD	.27658	.17966	.38613	.19328
#1	2075.0	5658.0	40408.	4152.9
#2	2066.6	5649.9	40590.	4140.5
#3	2064.1	5637.8	40720.	4138.0

NOTE: The remaining raw data for this batch is not relevant to this job. As such it has been omitted.

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	X	3	V	-0.009834	0.000000	No
			Fe	-0.000001	0.000000	No
			Mg	0.000002	0.000000	No
Al 396.152 { 85}	X	1	Mo	0.035224	0.000000	No
As 189.042 {478}	X	5	Fe	-0.000130	0.000000	No
			Cr	-0.000226	0.000000	No
			Mo	-0.000017	0.000000	No
			Al	0.000004	0.000000	No
			Ca	0.000002	0.000000	No
Ba 455.403 { 74}	X	1	Fe	0.000024	0.000000	No
Be 313.042 {108}	X	2	V	0.000115	0.000000	No
			Ti	-0.000059	0.000000	No
Ca 317.933 {106}	X	None				
Cd 226.502 {449}	X	4	Fe	0.000044	0.000000	No
			Ca	0.000001	0.000000	No
			Al	-0.000001	0.000000	No
			Ti	0.000151	0.000000	No
Co 228.616 {447}	X	3	Mo	-0.001220	0.000000	No
			Ti	0.003012	0.000000	No
			Fe	0.000006	0.000000	No
Cr 267.716 {126}	X	3	Al	0.000005	0.000000	No
			Fe	-0.000001	0.000000	No
			Ca	0.000002	0.000000	No
Cu 324.754 {104}	X	10	Fe	-0.000138	0.000000	No
			Ca	0.000002	0.000000	No
			Mo	0.000528	0.000000	No
			Sn	-0.000012	0.000000	No
			V	-0.000158	0.000000	No
			Ti	-0.000251	0.000000	No
			Al	0.000004	0.000000	No
			Mg	0.000002	0.000000	No
			Co	-0.000787	0.000000	No
			Cd	0.000240	0.000000	No
Fe 259.940 {130}	X	None				
In 230.606 {446}*	X	None				
K 766.490 { 44}	X	None				
Mg 279.079 {121}	X	None				
Mn 257.610 {131}	X	2	Fe	0.000009	0.000000	No
			Mg	0.000001	0.000000	No
Mo 202.030 {467}	X	1	Fe	-0.000017	0.000000	No
Na 589.592 { 57}	X	None				
Ni 231.604 {445}	X	7	Fe	-0.000033	0.000000	No
			Co	-0.000054	0.000000	No
			Mo	0.000005	0.000000	No
			Sb	-0.000120	0.000000	No
			Al	0.000003	0.000000	No
			Be	-0.000269	0.000000	No
			Tl	0.000440	0.000000	No
Pb 220.353 {453}	X	9	Al	0.000261	0.000000	No
			Fe	0.000092	0.000000	No
			Mo	-0.001012	0.000000	No
			Cu	0.001070	0.000000	No
			Ti	0.000036	0.000000	No
			Si	0.000071	0.000000	No
			Ca	-0.000005	0.000000	No
			Cr	0.000050	0.000000	No
			Mg	0.000004	0.000000	No

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Sb 206.833 {463}	X	10	Fe	0.000009	0.000000	No
			Cr	0.012140	0.000000	No
			Mo	-0.004076	0.000000	No
			V	-0.000611	0.000000	No
			Sn	-0.010736	0.000000	No
			Ti	0.000040	0.000000	No
			Ca	0.000004	0.000000	No
			Ni	-0.000438	0.000000	No
			Mg	-0.000002	0.000000	No
			Al	0.000003	0.000000	No
Se 196.090 {472}	X	10	Fe	-0.000065	0.000000	No
			Ca	-0.000001	0.000000	No
			Mn	0.000574	0.000000	No
			Mo	0.000111	0.000000	No
			Al	-0.000024	0.000000	No
			V	0.000000	0.000000	No
			Zn	0.000000	0.000000	No
			Sr	0.000137	0.000000	No
			As	-0.000032	0.000000	No
			Be	0.000212	0.000000	No
Si 212.412 {459}	X	1	Mo	0.019120	0.000000	No
Sn 189.989 {477}	X	None				
Sr 407.771 { 83}	X	1	Ca	0.000101	0.000000	No
Ti 334.941 {101}	X	1	Ca	-0.000006	0.000000	No
Tl 190.856 {477}	X	11	Co	0.001145	0.000000	No
			Fe	-0.000013	0.000000	No
			Al	-0.000011	0.000000	No
			Ba	-0.000051	0.000000	No
			Ti	-0.002651	0.000000	No
			Sb	0.000012	0.000000	No
			Ca	0.000003	0.000000	No
			Cr	0.000230	0.000000	No
			Mg	-0.000003	0.000000	No
			Mn	0.000818	0.000000	No
			V	-0.038621	0.000000	No
V 292.402 {115}	X	5	Fe	0.000009	0.000000	No
			Cr	-0.002590	0.000000	No
			Mo	-0.005797	0.000000	No
			Ti	0.000364	0.000000	No
			Mn	-0.000693	0.000000	No
Y 224.306 {450}*	X	None				
Y 360.073 { 94}*	X	None				
Y 371.030 { 91}*	X	None				
Zn 206.200 {463}	X	5	Cr	-0.000965	0.000000	No
			Al	0.000005	0.000000	No
			Ca	0.000003	0.000000	No
			Fe	0.000046	0.000000	No
			As	0.001128	0.000000	No

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000315	0.539653	0.000000	1.000000
Al 396.152 { 85}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	-0.003427	0.160841	0.000000	1.000000
As 189.042 {478}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	-0.000614	0.206165	0.000000	1.000000
Ba 455.403 { 74}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.020327	10.140399	0.000000	1.000000
Be 313.042 {108}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000348	7.548591	0.000000	1.000000
Ca 317.933 {106}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.004951	0.243587	0.000000	1.000000
Cd 226.502 {449}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000036	4.650684	0.000000	1.000000
Co 228.616 {447}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000176	2.310117	0.000000	1.000000
Cr 267.716 {126}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000131	0.459956	0.000000	1.000000
Cu 324.754 {104}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.003742	0.703977	0.000000	1.000000
Fe 259.940 {130}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000337	0.140841	0.000000	1.000000
In 230.606 {446}*	4/26/2017 7:49:24	5/5/2010 12:30:54	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
K 766.490 { 44}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.009903	0.148871	0.000000	1.000000
Mg 279.079 {121}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	-0.000099	0.023946	0.000000	1.000000
Mn 257.610 {131}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000226	2.502947	0.000000	1.000000
Mo 202.030 {467}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000555	1.023044	0.000000	1.000000
Na 589.592 { 57}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	-0.001861	0.458196	0.000000	1.000000
Ni 231.604 {445}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	-0.000801	1.449544	0.000000	1.000000
Pb 220.353 {453}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.001488	1.348401	0.000000	1.000000
Sb 206.833 {463}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000096	0.242588	0.000000	1.000000
Se 196.090 {472}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	-0.001075	0.144822	0.000000	1.000000
Si 212.412 {459}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.006060	0.534081	0.000000	1.000000
Sn 189.989 {477}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.000395	0.502171	0.000000	1.000000
Sr 407.771 { 83}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	-0.000408	15.474285	0.000000	1.000000
Ti 334.941 {101}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.001525	1.639290	0.000000	1.000000
Tl 190.856 {477}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	-0.004427	0.604727	0.000000	1.000000
V 292.402 {115}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	-0.000218	0.678898	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 371.030 { 91}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	4/26/2017 8:10:22	4/26/2017 8:10:22	Linear	1/Conc	0.002302	2.848138	0.000000	1.000000

	Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
							Slope	Y-int	Slope factor	Offset
	Ag 328.068 {103}	0.999863	0.000083	0.000430	0.001435	OK.	1.000000	0.000000	1	0
	Al 396.152 { 85}	0.999750	0.005807	0.011078	0.036925	OK.	1.000000	0.000000	1	0
	As 189.042 {478}	0.999959	0.000149	0.000736	0.002452	OK.	1.000000	0.000000	1	0
	Ba 455.403 { 74}	0.999951	0.008088	0.000237	0.000791	OK.	1.000000	0.000000	1	0
	Be 313.042 {108}	0.999832	0.011139	0.000094	0.000313	OK.	1.000000	0.000000	1	0
	Ca 317.933 {106}	0.999633	0.010630	0.003513	0.011712	OK.	1.000000	0.000000	1	0
	Cd 226.502 {449}	0.999873	0.005981	0.000051	0.000168	OK.	1.000000	0.000000	1	0
	Co 228.616 {447}	0.999869	0.003022	0.000110	0.000366	OK.	1.000000	0.000000	1	0
	Cr 267.716 {126}	0.999868	0.000601	0.000310	0.001033	OK.	1.000000	0.000000	1	0
	Cu 324.754 {104}	0.999887	0.000851	0.000299	0.000996	OK.	1.000000	0.000000	1	0
	Fe 259.940 {130}	0.999075	0.009766	0.003059	0.010198	OK.	1.000000	0.000000	1	0
	In 230.606 {446}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	K 766.490 { 44}	0.999835	0.004357	0.025611	0.085371	OK.	1.000000	0.000000	1	0
	Mg 279.079 {121}	0.999691	0.000960	0.022482	0.074941	OK.	1.000000	0.000000	1	0
	Mn 257.610 {131}	0.999798	0.004054	0.000049	0.000164	OK.	1.000000	0.000000	1	0
	Mo 202.030 {467}	0.999855	0.001400	0.000150	0.000499	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	0.999718	0.017524	0.008315	0.027716	OK.	1.000000	0.000000	1	0
	Ni 231.604 {445}	0.999868	0.001898	0.000172	0.000573	OK.	1.000000	0.000000	1	0
	Pb 220.353 {453}	0.999944	0.001160	0.000523	0.001743	OK.	1.000000	0.000000	1	0
	Sb 206.833 {463}	0.999961	0.000171	0.001010	0.003368	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	0.999977	0.000079	0.001587	0.005291	OK.	1.000000	0.000000	1	0
	Si 212.412 {459}	0.997172	0.003304	0.000330	0.001099	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	0.999917	0.000520	0.000256	0.000852	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	0.999963	0.010751	0.000097	0.000324	OK.	1.000000	0.000000	1	0
	Ti 334.941 {101}	0.999978	0.000875	0.000132	0.000440	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	0.999984	0.000262	0.000736	0.002454	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	0.999933	0.000629	0.000272	0.000905	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Zn 206.200 {463}	0.999865	0.003770	0.000060	0.000201	OK.	1.000000	0.000000	1	0

Zoom In ▶ Zoom Out

Sample Name: Blank Acquired: 4/27/2017 7:56:15 Type: Cal
Method: 60102007_042011(v522) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0003**	**.0011**	**-.0008**	**-.0003**	**-.0005**	**.0029**	**-.0020**	**-.0009**	**-.0002**
Stddev	.0002	.0011	.0001	.0019	.0003	.0004	.0001	.0000	.0001
%RSD	64.98	95.26	10.84	593.3	55.78	13.12	3.132	2.766	51.54
#1	.0002	.0020	-.0007	-.0024	-.0002	.0026	-.0020	-.0009	-.0003
#2	.0002	.0014	-.0009	.0002	-.0008	.0033	-.0021	-.0009	-.0001
#3	.0005	-.0001	-.0009	.0012	-.0005	.0026	-.0020	-.0009	-.0002

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0149**	**.0003**	**-.0077**	**-.0002**	**.0004**	**.0007**	**.0017**	**-.0009**	**-.0018**
Stddev	.0003	.0001	.0014	.0006	.0001	.0001	.0002	.0001	.0008
%RSD	2.264	34.74	17.93	375.8	19.84	12.43	10.06	9.336	42.44
#1	.0146	.0004	-.0061	-.0003	.0004	.0006	.0019	-.0009	-.0013
#2	.0153	.0003	-.0082	.0005	.0005	.0008	.0016	-.0008	-.0027
#3	.0148	.0002	-.0087	-.0007	.0004	.0008	.0016	-.0008	-.0015

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0005**	**.0004**	**.0059**	**.0004**	**-.0013**	**.0012**	**-.0025**	**-.0009**	**.0010**
Stddev	.0002	.0001	.0001	.0000	.0004	.0001	.0004	.0002	.0001
%RSD	42.05	15.54	2.453	.6419	32.19	9.495	16.88	26.76	14.54
#1	.0006	.0004	.0061	.0004	-.0015	.0013	-.0028	-.0007	.0012
#2	.0007	.0003	.0059	.0004	-.0015	.0012	-.0027	-.0012	.0011
#3	.0003	.0005	.0058	.0004	-.0008	.0011	-.0020	-.0008	.0009

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1636.2**	**4627.6**	**33473.**	**6889.1**
Stddev	.7	.4	75.	35.0
%RSD	.04507	.00903	.22512	.50876
#1	1636.6	4627.3	33473.	6849.9
#2	1636.7	4627.6	33549.	6917.6
#3	1635.4	4628.1	33398.	6899.7

Zoom In ▶ Zoom Out

Sample Name: LowStd Acquired: 4/27/2017 8:00:22 Type: Cal
Method: 60102007_042011(v522) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.0401**	**1.682**	**.0900**	**4.020**	**4.784**	**2.776**	**2.623**	**1.409**	**.2641**
Stddev	.0002	.006	.0004	.011	.013	.009	.005	.003	.0007
%RSD	.3901	.3518	.3970	.2676	.2614	.3181	.2050	.2249	.2604
#1	.0399	1.682	.0903	4.020	4.798	2.785	2.626	1.412	.2644
#2	.0402	1.676	.0899	4.009	4.778	2.769	2.626	1.408	.2633
#3	.0400	1.688	.0896	4.030	4.775	2.773	2.617	1.406	.2646

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.4196**	**1.811**	**.7753**	**.2431**	**1.414**	**.4418**	**3.186**	**.8686**	**.5997**
Stddev	.0006	.005	.0027	.0010	.004	.0005	.008	.0020	.0024
%RSD	.1437	.2740	.3448	.4081	.2894	.1117	.2508	.2308	.4082
#1	.4202	1.810	.7783	.2438	1.419	.4423	3.179	.8698	.5970
#2	.4190	1.807	.7730	.2420	1.412	.4418	3.195	.8697	.6017
#3	.4197	1.817	.7747	.2437	1.412	.4414	3.185	.8663	.6006

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1164**	**.0642**	**.2124**	**.1973**	**6.622**	**.8399**	**.1695**	**.3649**	**1.253**
Stddev	.0003	.0003	.0001	.0008	.022	.0023	.0005	.0012	.003
%RSD	.2539	.4767	.0593	.3886	.3328	.2786	.3217	.3227	.2237
#1	.1166	.0644	.2123	.1982	6.635	.8414	.1697	.3662	1.252
#2	.1165	.0638	.2124	.1972	6.596	.8372	.1700	.3643	1.256
#3	.1161	.0644	.2125	.1966	6.634	.8412	.1689	.3641	1.250

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1567.3**	**4459.2**	**32407.**	**6707.8**
Stddev	1.8	13.0	96.	32.1
%RSD	.11650	.29170	.29590	.47858
#1	1565.3	4444.2	32328.	6691.0
#2	1568.8	4467.0	32513.	6744.9
#3	1567.8	4466.4	32378.	6687.7

Zoom In ▶ Zoom Out

Sample Name: MidStd Acquired: 4/27/2017 8:04:16 Type: Cal
Method: 60102007_042011(v522) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.1595**	**6.193**	**.3565**	**15.41**	**18.23**	**10.11**	**10.02**	**5.413**	**.9973**
Stddev	.0003	.025	.0005	.04	.10	.06	.02	.007	.0042
%RSD	.1745	.4010	.1352	.2364	.5703	.5464	.1706	.1212	.4176
#1	.1598	6.210	.3569	15.45	18.32	10.16	10.04	5.420	1.001
#2	.1592	6.165	.3565	15.40	18.12	10.05	10.01	5.408	.9985
#3	.1596	6.204	.3559	15.38	18.25	10.11	10.02	5.409	.9926

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1.601**	**6.399**	**2.894**	**.8938**	**5.364**	**1.656**	**11.74**	**3.313**	**2.359**
Stddev	.008	.036	.010	.0081	.012	.001	.03	.002	.002
%RSD	.4740	.5697	.3451	.9008	.2315	.0766	.2949	.0643	.0866
#1	1.609	6.425	2.905	.8970	5.374	1.657	11.78	3.313	2.360
#2	1.601	6.358	2.892	.8846	5.367	1.655	11.72	3.315	2.360
#3	1.594	6.416	2.885	.8997	5.350	1.657	11.72	3.310	2.356

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.4542**	**.2501**	**.9599**	**.7664**	**25.88**	**3.337**	**.6790**	**1.412**	**4.750**
Stddev	.0006	.0008	.0021	.0014	.08	.013	.0022	.005	.003
%RSD	.1305	.3168	.2139	.1859	.3223	.4027	.3186	.3275	.0647
#1	.4548	.2511	.9620	.7678	25.97	3.348	.6814	1.415	4.750
#2	.4543	.2498	.9598	.7665	25.81	3.340	.6772	1.413	4.753
#3	.4536	.2496	.9579	.7650	25.85	3.322	.6784	1.406	4.747

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1498.6**	**4355.5**	**32208.**	**6623.0**
Stddev	3.9	8.3	226.	44.9
%RSD	.26242	.18945	.70082	.67755
#1	1494.3	4346.1	31977.	6611.3
#2	1502.0	4361.5	32218.	6672.6
#3	1499.6	4358.9	32428.	6585.2

Zoom In ▶ Zoom Out

Sample Name: HighStd Acquired: 4/27/2017 8:07:53 Type: Cal
Method: 60102007_042011(v522) Mode: IR Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.3263**	**12.38**	**.7160**	**30.44**	**35.67**	**19.95**	**19.74**	**10.76**	**1.967**
Stddev	.0014	.01	.0007	.10	.08	.05	.02	.01	.004
%RSD	.4415	.0860	.0986	.3237	.2251	.2475	.0955	.1013	.2161
#1	.3263	12.39	.7154	30.48	35.69	19.95	19.72	10.75	1.972
#2	.3249	12.39	.7160	30.52	35.73	20.00	19.76	10.77	1.964
#3	.3278	12.37	.7168	30.33	35.58	19.90	19.75	10.77	1.964

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**3.262**	**12.36**	**5.820**	**1.768**	**10.40**	**3.379**	**23.43**	**6.578**	**4.813**
Stddev	.010	.03	.016	.005	.05	.004	.10	.015	.001
%RSD	.3049	.2490	.2824	.3101	.4910	.1187	.4362	.2287	.0236
#1	3.274	12.37	5.814	1.774	10.40	3.375	23.41	6.561	4.814
#2	3.258	12.38	5.839	1.767	10.34	3.379	23.54	6.590	4.814
#3	3.255	12.32	5.808	1.763	10.44	3.383	23.34	6.582	4.812

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.9159**	**.4972**	**2.143**	**1.530**	**51.39**	**6.585**	**1.392**	**2.812**	**9.337**
Stddev	.0003	.0016	.003	.001	.47	.022	.003	.002	.020
%RSD	.0281	.3218	.1476	.0679	.9065	.3353	.2164	.0721	.2114
#1	.9156	.4955	2.140	1.529	51.89	6.606	1.392	2.814	9.315
#2	.9161	.4987	2.145	1.529	50.96	6.586	1.395	2.810	9.353
#3	.9160	.4974	2.145	1.531	51.32	6.562	1.389	2.812	9.342

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1405.2**	**4207.9**	**31664.**	**6585.0**
Stddev	.7	5.3	51.	2.6
%RSD	.04772	.12585	.16160	.03919
#1	1404.8	4213.8	31614.	6587.9
#2	1406.0	4206.2	31716.	6583.4
#3	1404.9	4203.7	31663.	6583.5

Zoom In Zoom Out

Sample Name: HSTD Acquired: 4/27/2017 8:12:21 Type: QC
Method: 60102007_042011(v522) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5031**	**79.33**	**4.000**	**3.954**	**3.946**	**78.91**	**3.973**	**3.982**	**3.958**
Stddev	.0014	.20	.018	.012	.004	.03	.011	.008	.013
%RSD	.2840	.2545	.4599	.3037	.0945	.0415	.2859	.1933	.3199
#1	.5045	79.15	3.981	3.951	3.942	78.88	3.963	3.975	3.945
#2	.5016	79.29	3.999	3.944	3.949	78.90	3.971	3.980	3.970
#3	.5031	79.55	4.018	3.967	3.947	78.94	3.986	3.990	3.959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.019**	**77.91**	**79.65**	**78.98**	**3.940**	**4.015**	**79.27**	**3.982**	**4.035**
Stddev	.011	.13	.01	.21	.015	.005	.11	.011	.010
%RSD	.2643	.1667	.0175	.2713	.3781	.1202	.1359	.2873	.2538
#1	4.018	77.80	79.64	78.81	3.923	4.014	79.15	3.970	4.023
#2	4.031	77.87	79.67	78.90	3.944	4.010	79.36	3.985	4.043
#3	4.010	78.06	79.66	79.22	3.952	4.020	79.30	3.992	4.038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.003**	**3.977**	**4.211**	**3.992**	**3.896**	**3.978**	**4.040**	**3.993**	**3.976**
Stddev	.013	.006	.009	.004	.053	.012	.009	.013	.019
%RSD	.3154	.1499	.2105	.1000	1.350	.3084	.2106	.3349	.4727
#1	3.989	3.971	4.202	3.994	3.889	3.973	4.032	3.992	3.958
#2	4.010	3.981	4.210	3.988	3.847	3.993	4.039	4.007	3.976
#3	4.011	3.981	4.220	3.995	3.952	3.970	4.049	3.980	3.995
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: HSTD Acquired: 4/27/2017 8:12:21 Type: QC
Method: 60102007_042011(v522) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1415.1**	**4227.4**	**31842.**	**6630.4**
Stddev	1.5	3.3	105.	33.7
%RSD	.10457	.07741	.33060	.50779
#1	1414.3	4226.9	31903.	6648.1
#2	1414.1	4230.9	31720.	6651.5
#3	1416.8	4224.5	31903.	6591.6

Zoom In Zoom Out

Sample Name: ICV Acquired: 4/27/2017 8:19:58 Type: QC
Method: 60102007_042011(v522) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2585**	**39.19**	**2.010**	**1.978**	**2.023**	**40.45**	**2.013**	**1.997**	**2.012**
Stddev	.0007	.13	.003	.005	.004	.09	.004	.002	.001
%RSD	.2776	.3294	.1642	.2652	.1846	.2204	.1972	.1031	.0435
#1	.2591	39.28	2.013	1.983	2.027	40.41	2.018	1.999	2.012
#2	.2577	39.04	2.009	1.973	2.019	40.40	2.010	1.995	2.011
#3	.2586	39.25	2.007	1.977	2.023	40.56	2.012	1.997	2.013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.973**	**39.75**	**41.12**	**40.89**	**2.043**	**2.026**	**39.94**	**2.014**	**1.981**
Stddev	.002	.13	.05	.20	.002	.001	.02	.004	.007
%RSD	.0743	.3249	.1103	.4875	.1121	.0254	.0391	.1937	.3611
#1	1.975	39.79	41.09	40.92	2.045	2.027	39.93	2.019	1.987
#2	1.972	39.61	41.11	40.69	2.041	2.026	39.93	2.012	1.983
#3	1.972	39.85	41.17	41.08	2.042	2.026	39.95	2.012	1.973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.000**	**1.999**	**.1167**	**2.037**	**1.973**	**2.025**	**2.048**	**1.954**	**2.024**
Stddev	.007	.002	.0006	.003	.003	.003	.005	.002	.008
%RSD	.3430	.0801	.4738	.1235	.1690	.1418	.2327	.0917	.3895
#1	2.008	2.000	.1171	2.040	1.976	2.027	2.044	1.955	2.033
#2	1.997	1.997	.1160	2.035	1.971	2.022	2.053	1.954	2.018
#3	1.995	1.999	.1169	2.037	1.970	2.027	2.047	1.952	2.021
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: ICV Acquired: 4/27/2017 8:19:58 Type: QC
Method: 60102007_042011(v522) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1506.2**	**4364.6**	**32286.**	**6667.3**
Stddev	2.8	6.9	69.	57.8
%RSD	.18348	.15782	.21229	.86649
#1	1507.6	4359.4	32266.	6670.9
#2	1503.0	4372.4	32363.	6723.2
#3	1508.0	4362.1	32230.	6607.8

Zoom In Zoom Out

Sample Name: ICB Acquired: 4/27/2017 8:36:10 Type: QC
Method: 60102007_042011(v522) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0126**	**-.0012**	**-.0002**	**.0000**	**.0017**	**.0001**	**.0001**	**-.0002**
Stddev	.0001	.0022	.0005	.0001	.0000	.0003	.0000	.0001	.0001
%RSD	481.7	17.23	40.51	77.75	166.9	16.59	45.11	77.27	31.93
#1	-.0001	.0142	-.0017	-.0001	.0001	.0015	.0001	.0001	-.0003
#2	.0000	.0101	-.0010	-.0003	.0000	.0015	.0001	.0001	-.0002
#3	.0001	.0134	-.0008	-.0001	.0000	.0020	.0001	.0002	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009**	**.0012**	**.0138**	**.0017**	**.0000**	**F .0016**	**.0034**	**.0001**	**.0004**
Stddev	.0002	.0008	.0128	.0055	.0000	.0001	.0026	.0002	.0003
%RSD	26.06	69.02	92.52	316.5	135.3	9.463	75.55	170.5	76.34
#1	.0007	.0017	-.0006	-.0035	.0001	.0017	.0041	.0002	.0004
#2	.0009	.0002	.0239	.0075	.0000	.0015	.0057	.0002	.0001
#3	.0012	.0018	.0182	.0013	.0000	.0014	.0006	-.0001	.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0004**	**-.0005**	**.0014**	**.0004**	**.0001**	**.0002**	**-.0004**	**-.0002**	**.0001**
Stddev	.0005	.0013	.0001	.0005	.0000	.0001	.0023	.0002	.0000
%RSD	111.1	240.6	7.530	127.2	9.830	79.60	572.6	103.7	37.61
#1	.0001	.0009	.0016	.0005	.0001	.0001	.0022	-.0001	.0001
#2	-.0007	-.0009	.0014	-.0001	.0001	.0001	-.0022	-.0004	.0001
#3	-.0007	-.0016	.0014	.0008	.0001	.0003	-.0012	-.0001	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: ICB Acquired: 4/27/2017 8:36:10 Type: QC
Method: 60102007_042011(v522) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1602.2**	**4475.9**	**32681.**	**6789.7**
Stddev	2.0	3.0	41.	3.3
%RSD	.12224	.06605	.12628	.04805
#1	1603.4	4472.5	32697.	6792.4
#2	1603.2	4477.7	32634.	6790.7
#3	1599.9	4477.5	32712.	6786.1

Zoom In Zoom Out

Sample Name: CRIA Acquired: 4/27/2017 8:44:14 Type: QC
Method: 60102007_042011(v522) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0084**	**.2199**	**.0097**	**.2050**	**.0052**	**1.061**	**.0053**	**.0521**	**.0105**
Stddev	.0004	.0079	.0004	.0008	.0000	.001	.0000	.0001	.0004
%RSD	4.400	3.571	4.123	.3791	.4368	.0873	.6299	.2527	3.615
#1	.0080	.2278	.0093	.2056	.0052	1.060	.0053	.0521	.0106
#2	.0085	.2198	.0098	.2053	.0052	1.060	.0053	.0523	.0108
#3	.0088	.2121	.0101	.2041	.0052	1.062	.0053	.0520	.0100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0261**	**.3171**	**10.33**	**5.146**	**.0163**	**.0531**	**10.40**	**.0427**	**.0047**
Stddev	.0004	.0013	.04	.055	.0001	.0000	.01	.0001	.0002
%RSD	1.435	.3977	.3933	1.060	.3670	.0888	.0801	.1687	4.367
#1	.0257	.3157	10.32	5.116	.0164	.0531	10.40	.0427	.0046
#2	.0264	.3182	10.38	5.209	.0164	.0532	10.39	.0426	.0045
#3	.0261	.3174	10.30	5.113	.0163	.0531	10.40	.0428	.0049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0053**	**.0109**	**.0238**	**.0536**	**.0104**	**.0106**	**.0098**	**.0501**	**.0218**
Stddev	.0003	.0008	.0003	.0005	.0001	.0001	.0012	.0005	.0001
%RSD	5.267	7.312	1.191	1.020	.8013	.9834	12.57	.9645	.4379
#1	.0056	.0107	.0241	.0536	.0105	.0105	.0102	.0506	.0219
#2	.0052	.0101	.0235	.0530	.0104	.0107	.0107	.0497	.0217
#3	.0051	.0117	.0239	.0541	.0104	.0106	.0084	.0499	.0217
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CRIA Acquired: 4/27/2017 8:44:14 Type: QC
Method: 60102007_042011(v522) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1602.0**	**4471.3**	**32830.**	**6869.6**
Stddev	3.1	6.1	134.	61.1
%RSD	.19414	.13658	.40797	.88991
#1	1602.2	4464.6	32692.	6923.1
#2	1598.9	4472.8	32839.	6803.0
#3	1605.1	4476.6	32960.	6882.7

Zoom In Zoom Out

Sample Name: ICSA Acquired: 4/27/2017 8:50:46 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**487.8**	**-.0015**	**.0004**	**.0000**	**475.9**	**.0005**	**.0008**	**.0005**
Stddev	.0004	7.2	.0011	.0001	.000	.6	.0000	.0001	.0001
%RSD	459.6	1.476	72.21	30.29	6.490	.1296	8.235	10.65	28.78
#1	.0000	489.5	-.0024	.0005	.0000	475.4	.0005	.0007	.0006
#2	.0002	479.8	-.0003	.0003	.0000	475.7	.0005	.0009	.0006
#3	-.0005	493.9	-.0017	.0004	.0000	476.6	.0004	.0008	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0004**	**172.4**	**.0725**	**493.8**	**.0005**	**.0010**	**.1658**	**-.0002**	**.0001**
Stddev	.0002	.9	.0272	2.9	.0000	.0004	.0032	.0001	.0018
%RSD	62.84	.5037	37.50	.5939	5.626	42.28	1.958	63.64	1480.
#1	-.0007	172.4	.0861	493.6	.0005	.0011	.1692	-.0002	.0000
#2	-.0002	171.6	.0901	491.0	.0005	.0005	.1656	-.0001	.0020
#3	-.0003	173.3	.0412	496.8	.0005	.0013	.1627	-.0003	-.0016
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0020**	**.0000**	**.0168**	F **.0051**	**-.0003**	**-.0004**	**.0000**	**-.0003**	**.0019**
Stddev	.0013	.0026	.0007	.0015	.0001	.0003	.0030	.0001	.0002
%RSD	65.14	8356.	4.366	29.26	22.48	93.92	28790.	19.19	12.05
#1	-.0033	-.0006	.0162	.0061	-.0003	-.0005	.0026	-.0004	.0017
#2	-.0007	-.0021	.0167	.0058	-.0003	-.0006	-.0033	-.0003	.0021
#3	-.0019	.0029	.0176	.0034	-.0004	.0000	.0007	-.0003	.0019
Check ?	Chk Pass	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.0010					
Low Limit				-.0010					

Zoom In Zoom Out

Sample Name: ICSA Acquired: 4/27/2017 8:50:46 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1368.6**	**4077.7**	**30705.**	**6545.7**
Stddev	2.9	1.8	44.	40.7
%RSD	.21551	.04528	.14334	.62142
#1	1366.8	4076.7	30669.	6574.9
#2	1366.9	4076.5	30754.	6563.1
#3	1372.0	4079.8	30692.	6499.2

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 4/27/2017 8:55:58 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9598**	**486.4**	**1.122**	**.4900**	**.4902**	**466.9**	**.9515**	**.4794**	**.4950**
Stddev	.0023	2.0	.005	.0005	.0011	1.4	.0005	.0001	.0012
%RSD	.2429	.4216	.4320	.1058	.2308	.2963	.0529	.0191	.2389
#1	.9611	488.7	1.122	.4906	.4894	467.2	.9512	.4795	.4955
#2	.9611	485.7	1.127	.4898	.4915	465.4	.9520	.4793	.4958
#3	.9571	484.7	1.117	.4896	.4898	468.1	.9511	.4794	.4936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5379**	**170.8**	**.0689**	**492.1**	**.5002**	**1.032**	**.1885**	**.9777**	**.9809**
Stddev	.0031	.5	.0311	1.7	.0011	.002	.0090	.0018	.0016
%RSD	.5739	.3017	45.12	.3407	.2179	.1467	4.768	.1872	.1587
#1	.5414	170.2	.0495	490.4	.4991	1.030	.1815	.9767	.9822
#2	.5362	171.0	.0525	492.1	.5012	1.033	.1855	.9798	.9814
#3	.5359	171.1	.1048	493.8	.5002	1.033	.1986	.9766	.9792
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.070**	**1.057**	**.0490**	**.9928**	**1.031**	**1.042**	**1.017**	**.4822**	**.9553**
Stddev	.002	.006	.0002	.0003	.003	.003	.003	.0006	.0022
%RSD	.1399	.5521	.3078	.0340	.2960	.2857	.2520	.1287	.2299
#1	1.071	1.063	.0492	.9926	1.027	1.045	1.018	.4828	.9533
#2	1.071	1.052	.0489	.9927	1.033	1.041	1.019	.4824	.9577
#3	1.068	1.056	.0490	.9932	1.033	1.040	1.014	.4816	.9548
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 4/27/2017 8:55:58 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1339.1**	**4038.9**	**30400.**	**6462.0**
Stddev	1.8	2.8	29.	9.1
%RSD	.13485	.07033	.09681	.14158
#1	1337.2	4035.9	30431.	6451.4
#2	1339.5	4039.2	30398.	6466.6
#3	1340.7	4041.6	30372.	6467.9

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 9:03:47 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2440	38.86	2.046	1.946	2.007	40.11	2.051	2.009	2.013
Stddev	.0009	.17	.006	.006	.007	.13	.003	.001	.009
%RSD	.3846	.4447	.2985	.3154	.3331	.3150	.1424	.0634	.4201
#1	.2448	38.79	2.052	1.950	2.008	40.16	2.053	2.009	2.022
#2	.2430	38.73	2.040	1.939	2.000	39.97	2.052	2.010	2.008
#3	.2443	39.05	2.045	1.949	2.013	40.21	2.047	2.007	2.008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.942	39.92	39.84	38.79	2.063	1.976	39.55	2.057	2.001
Stddev	.005	.15	.10	.28	.011	.002	.12	.003	.003
%RSD	.2540	.3758	.2595	.7191	.5462	.1092	.3024	.1657	.1513
#1	1.944	39.90	39.81	38.65	2.076	1.977	39.56	2.060	2.004
#2	1.936	39.79	39.76	38.60	2.055	1.973	39.43	2.057	2.000
#3	1.944	40.09	39.96	39.11	2.058	1.976	39.67	2.053	1.998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.034	2.027	1.915	1.991	2.014	2.052	2.007	2.032	2.087
Stddev	.006	.002	.003	.004	.007	.012	.005	.013	.008
%RSD	.3174	.1040	.1333	.1739	.3526	.5944	.2335	.6252	.3682
#1	2.036	2.028	1.917	1.995	2.014	2.064	2.001	2.047	2.093
#2	2.026	2.028	1.912	1.988	2.007	2.039	2.010	2.023	2.090
#3	2.038	2.024	1.915	1.990	2.022	2.053	2.008	2.027	2.079
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 9:03:47 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1500.7	4308.4	32237.	6699.2
Stddev	2.8	2.5	141.	14.3
%RSD	.18566	.05734	.43702	.21352
#1	1503.8	4310.2	32099.	6713.2
#2	1500.2	4309.5	32381.	6699.8
#3	1498.2	4305.6	32231.	6684.6

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 9:11:14 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0131	-.0003	.0001	.0002	.0090	.0001	.0000	.0001
Stddev	.0002	.0035	.0002	.0001	.0000	.0019	.0000	.0001	.0001
%RSD	58.42	26.78	78.84	60.43	11.75	21.34	49.99	243.4	78.74
#1	.0001	.0114	-.0002	.0002	.0002	.0068	.0000	.0001	.0002
#2	.0004	.0172	-.0005	.0001	.0002	.0104	.0001	-.0001	.0000
#3	.0002	.0109	-.0001	.0001	.0002	.0098	.0001	.0001	.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	.0081	.0201	-.0030	.0002	.0007	.0129	.0004	-.0002
Stddev	.0001	.0033	.0072	.0079	.0000	.0001	.0088	.0002	.0001
%RSD	7.372	41.05	35.68	263.2	18.05	12.79	68.34	49.69	53.42
#1	.0019	.0118	.0256	.0039	.0001	.0008	.0118	.0005	-.0002
#2	.0017	.0072	.0229	-.0013	.0002	.0007	.0047	.0004	-.0002
#3	.0017	.0053	.0120	-.0117	.0002	.0007	.0223	.0002	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0016	.0020	.0006	.0002	.0003	-.0004	-.0003	.0016
Stddev	.0011	.0002	.0002	.0004	.0001	.0000	.0005	.0001	.0000
%RSD	345.1	10.94	8.659	58.05	33.89	11.81	110.7	19.67	1.267
#1	-.0004	.0017	.0022	.0011	.0003	.0002	-.0010	-.0003	.0016
#2	.0015	.0014	.0020	.0004	.0001	.0003	-.0003	-.0003	.0016
#3	-.0002	.0017	.0018	.0004	.0002	.0003	.0000	-.0004	.0016
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 9:11:14 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1606.4	4447.7	32400.	6854.7
Stddev	3.6	2.4	41.	3.4
%RSD	.22171	.05480	.12509	.04981
#1	1608.8	4449.7	32433.	6855.1
#2	1602.3	4445.0	32413.	6857.9
#3	1608.1	4448.5	32355.	6851.1

Zoom In Zoom Out

Sample Name: MP32051-MB1 Acquired: 4/27/2017 9:15:40 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0084**	**-.0027**	**-.0002**	**.0000**	**.0072**	**.0000**	**.0000**	**.0001**
Stddev	.0000	.0015	.0003	.0001	.0000	.0010	.000	.000	.0003
%RSD	38.30	17.72	9.643	63.74	24.76	13.44	113.8	820.2	369.1
#1	-.0001	.0096	-.0030	-.0003	.0000	.0083	.0000	.0000	.0001
#2	-.0001	.0090	-.0026	-.0002	.0000	.0065	.0000	.0001	-.0003
#3	-.0001	.0067	-.0025	-.0001	.0001	.0068	-.0001	-.0001	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015**	**.0013**	**.0640**	**.0060**	**.0000**	**.0006**	**.0095**	**.0000**	**-.0003**
Stddev	.0001	.0035	.0058	.0100	.0000	.0002	.0050	.0001	.0002
%RSD	5.141	265.4	9.002	165.7	16.18	29.99	52.43	876.8	64.91
#1	.0016	.0052	.0675	.0073	.0000	.0004	.0053	.0002	-.0001
#2	.0016	-.0016	.0573	.0153	.0000	.0007	.0082	-.0001	-.0003
#3	.0015	.0004	.0671	-.0046	.0000	.0006	.0149	-.0001	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008**	**.0007**	**.0007**	**.0003**	**.0001**	**.0002**	**-.0009**	**-.0005**	**.0004**
Stddev	.0015	.0004	.0004	.0001	.0001	.0000	.0015	.0004	.0000
%RSD	181.8	56.82	55.94	37.15	74.40	13.08	166.3	84.96	7.427
#1	-.0006	.0010	.0011	.0004	.0000	.0003	.0002	.0000	.0004
#2	.0024	.0010	.0005	.0002	.0002	.0002	-.0026	-.0008	.0004
#3	.0007	.0003	.0004	.0003	.0001	.0002	-.0003	-.0007	.0004
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP32051-MB1 Acquired: 4/27/2017 9:15:40 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1602.5**	**4450.9**	**32670.**	**6957.6**
Stddev	1.1	4.2	29.	22.1
%RSD	.06777	.09429	.08962	.31696
#1	1602.3	4448.7	32668.	6946.9
#2	1603.7	4448.3	32700.	6983.0
#3	1601.6	4455.8	32642.	6943.0

Zoom In Zoom Out

Sample Name: MP32051-B1 Acquired: 4/27/2017 9:20:10 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0457**	**27.21**	**2.042**	**2.004**	**.0516**	**26.30**	**.0517**	**.5068**	**.2072**
Stddev	.0008	.11	.004	.006	.0003	.09	.0001	.0009	.0011
%RSD	1.745	.4043	.1919	.2800	.6016	.3381	.2586	.1715	.5090
#1	.0460	27.16	2.038	2.007	.0515	26.26	.0516	.5061	.2074
#2	.0464	27.14	2.041	1.997	.0514	26.24	.0519	.5065	.2060
#3	.0448	27.34	2.046	2.007	.0519	26.40	.0518	.5078	.2081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2513**	**26.70**	**26.01**	**24.63**	**.5319**	**.5349**	**25.58**	**.5301**	**.4925**
Stddev	.0004	.12	.06	.06	.0013	.0014	.07	.0005	.0015
%RSD	.1578	.4347	.2154	.2455	.2433	.2642	.2540	.0891	.2990
#1	.2509	26.67	26.02	24.63	.5326	.5338	25.58	.5297	.4914
#2	.2517	26.61	25.94	24.56	.5304	.5345	25.52	.5306	.4919
#3	.2513	26.83	26.05	24.68	.5327	.5365	25.65	.5300	.4942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5188**	**1.980**	**.0111**	**.5247**	**.5245**	**.5308**	**1.959**	**.5041**	**.5218**
Stddev	.0022	.009	.0003	.0004	.0015	.0008	.003	.0004	.0009
%RSD	.4320	.4487	3.138	.0720	.2906	.1422	.1474	.0847	.1655
#1	.5167	1.973	.0114	.5244	.5246	.5317	1.956	.5044	.5220
#2	.5185	1.978	.0107	.5246	.5229	.5304	1.962	.5044	.5225
#3	.5212	1.990	.0110	.5252	.5259	.5304	1.960	.5036	.5208
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP32051-B1 Acquired: 4/27/2017 9:20:10 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1549.8**	**4347.8**	**32320.**	**6823.8**
Stddev	2.7	3.4	114.	13.5
%RSD	.17203	.07777	.35392	.19727
#1	1551.8	4351.7	32213.	6837.9
#2	1550.9	4346.1	32441.	6822.5
#3	1546.8	4345.5	32308.	6811.1

Zoom In Zoom Out

Sample Name: FA43320-1 Acquired: 4/27/2017 9:24:22 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0009**	**.2295**	**.0003**	**.0070**	**-.0004**	**585.3**	**.0000**	**.0003**	**.0000**
Stddev	.0021	.0346	.0012	.0008	.0002	2.1	.0002	.0001	.001
%RSD	228.7	15.10	364.8	11.55	35.43	.3587	340.6	42.37	79670.
#1	.0032	.2406	-.0009	.0079	-.0003	587.7	.0002	.0004	-.0006
#2	.0006	.1906	.0014	.0065	-.0005	584.2	.0000	.0002	-.0009
#3	-.0010	.2571	.0004	.0065	-.0005	583.9	-.0001	.0002	.0015

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0052**	**.1629**	**12.74**	**92.80**	**.0103**	**.0080**	**40.44**	**.0017**	**.0007**
Stddev	.0021	.0141	.06	.40	.0001	.0007	.15	.0004	.0016
%RSD	40.16	8.651	.4416	.4305	1.036	8.917	.3696	21.73	225.1
#1	.0038	.1790	12.76	93.13	.0103	.0080	40.59	.0021	.0017
#2	.0076	.1575	12.68	92.92	.0103	.0087	40.29	.0015	.0015
#3	.0042	.1524	12.78	92.36	.0101	.0072	40.43	.0015	-.0011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0040**	**.0297**	**3.384**	**.0009**	**6.815**	**.0090**	**.0026**	**.0014**	**.0364**
Stddev	.0029	.0077	.011	.0015	.020	.0014	.0011	.0005	.0005
%RSD	71.95	25.89	.3160	164.4	.2974	16.05	41.71	32.80	1.303
#1	-.0009	.0315	3.378	.0004	6.838	.0083	.0015	.0010	.0367
#2	-.0047	.0363	3.379	.0027	6.803	.0106	.0027	.0013	.0358
#3	-.0066	.0212	3.397	-.0003	6.803	.0080	.0036	.0019	.0366

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1595.6**	**4378.6**	**32819.**	**6854.0**
Stddev	2.8	11.4	95.	7.9
%RSD	.17759	.26130	.28968	.11553
#1	1598.9	4386.2	32810.	6846.7
#2	1593.7	4384.3	32728.	6853.1
#3	1594.3	4365.5	32918.	6862.4

Zoom In Zoom Out

Sample Name: MP32051-D1 Acquired: 4/27/2017 9:28:48 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0010**	**.2838**	**-.0010**	**.0060**	**-.0004**	**588.4**	**-.0001**	**-.0001**	**-.0023**
Stddev	.0007	.0327	.0041	.0014	.0003	1.4	.0001	.0002	.0010
%RSD	62.68	11.53	415.5	23.45	94.09	.2402	160.3	244.3	44.57
#1	.0013	.3160	-.0024	.0051	.0000	589.5	-.0002	-.0001	-.0014
#2	.0016	.2849	-.0041	.0053	-.0007	589.0	.0000	-.0002	-.0020
#3	.0003	.2506	.0036	.0076	-.0004	586.8	.0000	.0001	-.0034

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0080**	**.1104**	**12.52**	**93.11**	**.0098**	**.0072**	**40.64**	**.0015**	**.0002**
Stddev	.0010	.0125	.07	.83	.0002	.0007	.18	.0003	.0023
%RSD	12.14	11.32	.5614	.8963	1.678	9.496	.4390	21.25	1254.
#1	.0088	.1053	12.59	92.94	.0096	.0080	40.81	.0012	-.0024
#2	.0082	.1012	12.52	94.01	.0098	.0067	40.66	.0016	.0020
#3	.0069	.1246	12.45	92.37	.0099	.0070	40.46	.0018	.0010

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0023**	**.0350**	**3.375**	**.0025**	**6.876**	**.0078**	**.0043**	**.0019**	**.0243**
Stddev	.0031	.0038	.010	.0033	.017	.0001	.0014	.0010	.0004
%RSD	136.1	10.88	.2949	133.1	.2445	1.156	31.98	52.11	1.808
#1	-.0006	.0339	3.364	.0054	6.891	.0079	.0037	.0026	.0239
#2	-.0059	.0319	3.381	.0031	6.881	.0077	.0034	.0008	.0247
#3	-.0004	.0393	3.380	-.0011	6.858	.0077	.0059	.0024	.0244

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1585.7**	**4338.0**	**32425.**	**6780.6**
Stddev	2.0	3.0	51.	42.1
%RSD	.12904	.06929	.15769	.62139
#1	1584.5	4336.7	32394.	6758.7
#2	1584.6	4335.9	32484.	6753.9
#3	1588.1	4341.4	32396.	6829.2

Zoom In Zoom Out

Sample Name: MP32051-SD1 Acquired: 4/27/2017 9:33:15 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 25.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0013**	**.2358**	**-.0354**	**-.0029**	**-.0022**	**622.0**	**.0006**	**-.0009**	**-.0055**
Stddev	.0034	.0143	.0114	.0088	.0015	2.0	.0011	.0013	.0036
%RSD	261.3	6.084	32.13	306.5	69.62	.3208	201.4	154.3	66.78
#1	-.0052	.2225	-.0409	.0032	-.0008	624.0	.0007	.0006	-.0079
#2	.0009	.2510	-.0223	.0012	-.0038	622.0	.0016	-.0011	-.0072
#3	.0004	.2339	-.0430	-.0130	-.0018	620.0	-.0006	-.0020	-.0013

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0445**	**.0928**	**13.59**	**98.54**	**.0102**	**.0028**	**42.34**	**.0040**	**-.0117**
Stddev	.0085	.0291	.49	.52	.0003	.0034	.19	.0013	.0249
%RSD	19.14	31.32	3.584	.5270	3.091	122.3	.4590	32.68	213.8
#1	.0444	.0960	13.03	99.13	.0100	.0001	42.55	.0053	.0054
#2	.0361	.1201	13.93	98.34	.0100	.0017	42.30	.0027	-.0001
#3	.0531	.0622	13.80	98.15	.0106	.0067	42.16	.0040	-.0403

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0032**	**.0395**	**3.518**	**.0089**	**7.208**	**.0244**	**-.0373**	**-.0075**	**.0949**
Stddev	.0432	.0690	.005	.0055	.024	.0009	.0173	.0013	.0006
%RSD	1370.	174.8	.1456	61.67	.3286	3.604	46.31	17.23	.6659
#1	-.0169	.0302	3.519	.0147	7.233	.0245	-.0326	-.0060	.0953
#2	.0453	.1126	3.513	.0080	7.204	.0252	-.0229	-.0084	.0953
#3	-.0378	-.0244	3.523	.0039	7.187	.0234	-.0565	-.0081	.0942

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1599.8**	**4381.7**	**32444.**	**6793.8**
Stddev	.2	13.8	61.	17.9
%RSD	.01125	.31566	.18771	.26360
#1	1599.9	4393.4	32375.	6774.8
#2	1599.8	4366.4	32489.	6796.1
#3	1599.6	4385.2	32468.	6810.4

Zoom In Zoom Out

Sample Name: MP32051-S1 Acquired: 4/27/2017 9:42:09 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0469**	**28.55**	**2.170**	**2.089**	**.0526**	**644.1**	**.0538**	**.5261**	**.2096**
Stddev	.0012	.11	.002	.004	.0000	.7	.0002	.0004	.0007
%RSD	2.541	.3783	.0851	.2158	.0731	.1108	.3083	.0713	.3126
#1	.0483	28.61	2.171	2.090	.0526	643.3	.0536	.5257	.2102
#2	.0461	28.43	2.168	2.084	.0526	644.3	.0540	.5261	.2097
#3	.0464	28.62	2.172	2.093	.0526	644.6	.0538	.5265	.2089

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2628**	**27.83**	**40.64**	**122.2**	**.5632**	**.5684**	**69.43**	**.5546**	**.5051**
Stddev	.0023	.03	.27	.7	.0015	.0011	.16	.0008	.0074
%RSD	.8880	.0958	.6661	.5324	.2654	.1926	.2289	.1436	1.467
#1	.2603	27.82	40.77	121.5	.5641	.5672	69.29	.5537	.5103
#2	.2630	27.82	40.33	122.3	.5615	.5693	69.42	.5550	.4967
#3	.2649	27.86	40.82	122.8	.5640	.5687	69.60	.5551	.5085

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.5467**	**2.168**	**3.599**	**.5415**	**7.752**	**.5536**	**2.015**	**.5248**	**.5630**
Stddev	.0015	.015	.009	.0032	.014	.0004	.013	.0007	.0047
%RSD	.2795	.6801	.2395	.5888	.1854	.0699	.6423	.1326	.8339
#1	.5459	2.183	3.590	.5380	7.741	.5540	2.024	.5250	.5578
#2	.5485	2.167	3.600	.5443	7.747	.5532	2.000	.5254	.5670
#3	.5458	2.154	3.607	.5422	7.768	.5537	2.021	.5240	.5640

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1557.0**	**4281.9**	**32377.**	**6761.7**
Stddev	1.8	6.6	48.	25.6
%RSD	.11599	.15331	.14757	.37889
#1	1557.5	4289.4	32323.	6785.3
#2	1558.4	4278.2	32411.	6765.3
#3	1555.0	4277.9	32398.	6734.4

Zoom In Zoom Out

Sample Name: MP32051-S2 Acquired: 4/27/2017 9:46:27 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0484	28.68	2.191	2.102	.0534	642.5	.0540	.5296	.2143
Stddev	.0009	.04	.003	.005	.0003	.8	.0002	.0008	.0008
%RSD	1.839	.1282	.1349	.2558	.4806	.1252	.4093	.1554	.3878
#1	.0484	28.72	2.188	2.107	.0532	641.9	.0538	.5295	.2143
#2	.0493	28.65	2.194	2.097	.0534	643.4	.0538	.5289	.2151
#3	.0475	28.66	2.191	2.101	.0537	642.3	.0542	.5305	.2135

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2679	28.03	40.78	122.1	.5674	.5568	69.54	.5580	.5082
Stddev	.0015	.04	.04	.5	.0018	.0020	.16	.0011	.0027
%RSD	.5641	.1296	.1012	.4370	.3091	.3659	.2326	.2042	.5392
#1	.2680	28.07	40.78	122.6	.5694	.5586	69.48	.5571	.5110
#2	.2694	28.00	40.83	122.2	.5662	.5546	69.41	.5593	.5056
#3	.2664	28.02	40.74	121.6	.5665	.5573	69.72	.5575	.5079

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.5563	2.184	3.610	.5404	7.760	.5548	2.046	.5312	.5724
Stddev	.0075	.018	.003	.0011	.019	.0014	.018	.0028	.0023
%RSD	1.342	.8292	.0916	.1995	.2474	.2497	.8630	.5331	.4098
#1	.5642	2.172	3.611	.5414	7.777	.5535	2.025	.5294	.5700
#2	.5553	2.174	3.606	.5404	7.740	.5545	2.057	.5345	.5747
#3	.5493	2.204	3.612	.5393	7.765	.5562	2.055	.5297	.5723

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1561.3	4296.0	32402.	6770.3
Stddev	1.0	2.9	44.	29.2
%RSD	.06288	.06723	.13530	.43099
#1	1560.7	4295.2	32448.	6795.3
#2	1560.8	4293.5	32361.	6738.2
#3	1562.5	4299.1	32397.	6777.2

Zoom In Zoom Out

Sample Name: MP32051-PS1 Acquired: 4/27/2017 9:55:59 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0458	2.953	.1138	.2738	.0532	608.4	.0547	.0534	.0528
Stddev	.0011	.043	.0028	.0016	.0009	2.1	.0003	.0004	.0013
%RSD	2.481	1.446	2.419	.5730	1.631	.3500	.5259	.7202	2.527
#1	.0456	2.905	.1158	.2752	.0534	610.7	.0549	.0538	.0543
#2	.0470	2.967	.1107	.2739	.0540	607.9	.0547	.0532	.0522
#3	.0448	2.987	.1149	.2721	.0523	606.5	.0544	.0531	.0518

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.1132	3.340	23.55	99.32	.0665	.1179	52.30	.1109	.0498
Stddev	.0011	.020	.03	.30	.0004	.0006	.05	.0014	.0025
%RSD	.9291	.5860	.1362	.3023	.5440	.4992	.0883	1.236	5.026
#1	.1126	3.352	23.54	99.63	.0669	.1184	52.30	.1106	.0501
#2	.1126	3.352	23.53	99.28	.0661	.1172	52.34	.1125	.0471
#3	.1145	3.318	23.59	99.03	.0664	.1181	52.25	.1098	.0521

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1179	.1368	3.531	.0529	7.122	.1167	.1026	.0572	.3058
Stddev	.0017	.0028	.004	.0016	.007	.0015	.0053	.0010	.0015
%RSD	1.402	2.082	.1140	2.996	.1004	1.321	5.197	1.734	.4847
#1	.1166	.1398	3.535	.0520	7.128	.1181	.1067	.0571	.3075
#2	.1198	.1363	3.527	.0518	7.125	.1151	.1044	.0582	.3048
#3	.1174	.1342	3.531	.0547	7.114	.1170	.0966	.0563	.3051

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1578.4	4302.3	32406.	6796.0
Stddev	3.5	4.9	39.	21.6
%RSD	.21941	.11503	.11885	.31764
#1	1581.2	4303.8	32363.	6792.8
#2	1574.5	4296.8	32420.	6776.2
#3	1579.4	4306.4	32435.	6819.0

Zoom In Zoom Out

Sample Name: FA43321-1 Acquired: 4/27/2017 10:00:21 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0006	-.0195	-.0057	.0001	-.0003	.1165	.0000	.0001	-.0003
Stddev	.0011	.0208	.0054	.0007	.0003	.0038	.000	.0001	.0012
%RSD	195.5	106.4	93.74	562.3	89.93	3.251	857.2	157.8	459.7
#1	.0008	-.0267	-.0004	.0009	-.0003	.1207	.0000	.0000	.0004
#2	.0015	-.0358	-.0056	-.0003	-.0006	.1134	.0000	.0001	.0005
#3	-.0007	.0039	-.0112	-.0002	.0000	.1155	-.0001	.0002	-.0017

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0098	-.0061	.2399	-.0041	.0024	-.0012	.0612	.0011	-.0017
Stddev	.0011	.0095	.1304	.0460	.0000	.0002	.0360	.0009	.0020
%RSD	11.70	155.9	54.37	1119.	1.869	19.42	58.75	77.43	122.6
#1	.0093	.0000	.3905	-.0388	.0024	-.0010	.0395	.0004	-.0037
#2	.0090	-.0013	.1661	.0481	.0025	-.0011	.1027	.0021	-.0017
#3	.0111	-.0170	.1631	-.0216	.0024	-.0015	.0414	.0009	.0004

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0011	.0018	.0099	.0023	.0016	-.0005	-.0075	-.0022	.0377
Stddev	.0059	.0115	.0013	.0016	.0001	.0006	.0050	.0011	.0004
%RSD	548.0	655.2	12.69	72.41	7.389	123.5	67.24	49.22	.9943
#1	-.0077	.0106	.0085	.0031	.0016	-.0008	-.0072	-.0013	.0382
#2	.0036	-.0113	.0106	.0004	.0015	.0002	-.0127	-.0034	.0375
#3	.0009	.0059	.0107	.0033	.0018	-.0010	-.0026	-.0020	.0375

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1596.5	4387.6	32425.	6910.1
Stddev	1.6	3.4	161.	20.6
%RSD	.10314	.07698	.49723	.29803
#1	1594.6	4386.3	32506.	6931.9
#2	1597.2	4391.5	32240.	6891.0
#3	1597.6	4385.1	32530.	6907.2

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 10:04:51 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2416	38.08	2.060	1.912	1.991	39.83	2.058	2.010	1.987
Stddev	.0003	.15	.003	.005	.003	.05	.003	.001	.004
%RSD	.1049	.4014	.1465	.2693	.1481	.1354	.1525	.0643	.1803
#1	.2415	38.18	2.057	1.914	1.991	39.77	2.058	2.010	1.989
#2	.2419	37.91	2.060	1.906	1.989	39.85	2.055	2.009	1.988
#3	.2414	38.17	2.063	1.915	1.994	39.87	2.061	2.011	1.983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.916	39.13	39.76	37.14	2.069	1.982	39.38	2.078	1.986
Stddev	.004	.11	.10	.17	.001	.003	.10	.004	.000
%RSD	.2279	.2798	.2546	.4469	.0689	.1390	.2440	.1721	.0068
#1	1.918	39.20	39.85	37.31	2.071	1.980	39.47	2.077	1.986
#2	1.918	39.01	39.65	36.97	2.068	1.981	39.28	2.075	1.986
#3	1.911	39.19	39.77	37.14	2.068	1.985	39.40	2.082	1.986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.059	2.038	1.938	1.975	2.015	2.051	2.010	2.040	2.100
Stddev	.002	.005	.003	.002	.007	.007	.007	.004	.006
%RSD	.0730	.2401	.1681	.0921	.3604	.3196	.3274	.2175	.2992
#1	2.059	2.033	1.937	1.977	2.019	2.056	2.016	2.044	2.100
#2	2.058	2.038	1.936	1.975	2.007	2.053	2.010	2.041	2.095
#3	2.061	2.043	1.942	1.973	2.019	2.044	2.003	2.035	2.107
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 10:04:51 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1513.3	4278.2	32443.	6890.0
Stddev	1.7	5.3	47.	17.4
%RSD	.11365	.12447	.14372	.25229
#1	1511.8	4281.5	32402.	6874.3
#2	1512.9	4281.0	32434.	6908.7
#3	1515.2	4272.0	32494.	6887.1

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 10:09:02 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0150	-.0015	.0002	.0002	.0129	.0001	.0002	.0001
Stddev	.0002	.0068	.0003	.0003	.0000	.0004	.0001	.0000	.0001
%RSD	64.41	45.38	16.60	113.3	12.88	2.973	84.17	22.40	79.16
#1	.0005	.0199	-.0013	.0005	.0002	.0129	.0001	.0001	.0001
#2	.0003	.0072	-.0015	.0002	.0002	.0133	.0002	.0002	.0000
#3	.0001	.0178	-.0018	.0000	.0002	.0125	.0000	.0002	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0022	.0099	.0470	.0049	.0002	F .0022	.0141	.0002	-.0004
Stddev	.0003	.0006	.0241	.0129	.0000	.0004	.0083	.0001	.0002
%RSD	12.52	6.412	51.15	263.7	2.190	16.23	59.25	53.33	50.39
#1	.0020	.0105	.0214	-.0055	.0002	.0025	.0216	.0002	-.0002
#2	.0021	.0098	.0506	.0009	.0002	.0022	.0156	.0003	-.0006
#3	.0026	.0093	.0691	.0193	.0002	.0018	.0051	.0001	-.0004
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit	.0020					.0010			
Low Limit	-.0020					-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0011	.0026	.0006	.0003	.0007	-.0001	-.0003	.0017
Stddev	.001	.0023	.0003	.0005	.0001	.0001	.0009	.0001	.0000
%RSD	3261.	197.3	13.13	89.06	21.06	11.13	1810.	23.22	1.514
#1	.0000	-.0013	.0030	.0011	.0003	.0008	.0009	-.0002	.0017
#2	.0009	.0031	.0024	.0006	.0002	.0006	-.0002	-.0002	.0017
#3	-.0010	.0016	.0024	.0000	.0003	.0008	-.0009	-.0003	.0016
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 10:09:02 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1590.8	4371.3	32241.	6839.4
Stddev	5.1	10.7	156.	38.0
%RSD	.32037	.24436	.48488	.55627
#1	1594.1	4377.7	32276.	6796.8
#2	1593.4	4377.2	32377.	6851.6
#3	1584.9	4359.0	32070.	6869.9

Zoom In Zoom Out

Sample Name: FA43321-2 Acquired: 4/27/2017 10:13:33 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0000	.0132	-.0091	.0689	.0001	52.77	-.0001	.0000	-.0020
Stddev	.002	.0203	.0019	.0007	.0001	.20	.0003	.000	.0010
%RSD	6283.	153.3	20.38	1.083	156.5	.3789	305.4	7048.	49.90
#1	-.0013	.0236	-.0096	.0697	.0001	52.93	-.0002	-.0003	-.0021
#2	-.0006	-.0101	-.0106	.0682	.0001	52.54	-.0002	.0001	-.0028
#3	.0018	.0262	-.0070	.0690	-.0001	52.84	.0002	.0002	-.0009

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0104	.0002	1.226	7.805	.0034	.0036	11.54	.0008	-.0010
Stddev	.0014	.0108	.140	.098	.0001	.0002	.07	.0007	.0029
%RSD	13.48	5817.	11.44	1.250	1.863	4.566	.6466	87.14	278.9
#1	.0098	.0125	1.225	7.915	.0033	.0036	11.59	.0007	.0019
#2	.0119	-.0042	1.367	7.729	.0034	.0034	11.45	.0016	-.0011
#3	.0093	-.0077	1.086	7.772	.0033	.0037	11.57	.0002	-.0039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0014	.0050	2.960	.0018	.6938	.0032	-.0019	.0026	.0349
Stddev	.0044	.0086	.010	.0014	.0013	.0000	.0035	.0003	.0001
%RSD	306.6	172.2	.3294	76.51	.1894	1.382	185.6	10.94	.2260
#1	.0016	.0022	2.949	.0007	.6923	.0033	.0019	.0027	.0350
#2	-.0065	-.0019	2.968	.0034	.6944	.0032	-.0026	.0023	.0349
#3	.0006	.0147	2.964	.0013	.6947	.0033	-.0049	.0029	.0349

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1589.2	4341.9	32096.	6862.9
Stddev	4.7	5.5	61.	47.4
%RSD	.29789	.12719	.19095	.69010
#1	1583.9	4348.1	32158.	6811.9
#2	1590.5	4340.0	32095.	6905.5
#3	1593.1	4337.5	32035.	6871.2

Zoom In Zoom Out

Sample Name: FA43285-10 Acquired: 4/27/2017 10:18:02 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0024**	**.2101**	**-.0050**	**.0114**	**-.0003**	**618.6**	**-.0001**	**.0000**	**-.0016**
Stddev	.0008	.0045	.0070	.0014	.0001	.3	.0001	.0009	.0003
%RSD	31.82	2.127	137.7	12.09	31.80	.0411	178.7	2879.	21.97
#1	.0033	.2067	-.0065	.0098	-.0003	618.3	-.0001	-.0003	-.0016
#2	.0023	.2152	.0025	.0123	-.0004	618.8	.0001	.0011	-.0020
#3	.0017	.2085	-.0112	.0121	-.0003	618.6	-.0001	-.0007	-.0013

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0118**	**.1342**	**14.64**	**219.1**	**.9062**	**.0114**	**329.6**	**.0024**	**.0006**
Stddev	.0023	.0063	.30	.3	.0005	.0007	.2	.0008	.0018
%RSD	19.23	4.672	2.026	.1560	.0542	6.277	.0518	33.40	282.4
#1	.0123	.1280	14.56	218.8	.9059	.0117	329.8	.0015	.0016
#2	.0093	.1339	14.97	219.0	.9059	.0106	329.6	.0030	.0018
#3	.0137	.1406	14.39	219.5	.9067	.0120	329.5	.0026	-.0015

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0007**	**.0114**	**3.721**	**.0005**	**10.50**	**.0080**	**-.0001**	**-.0029**	**.0330**
Stddev	.0013	.0010	.004	.0010	.01	.0007	.0082	.0007	.0008
%RSD	177.8	8.904	.1056	200.6	.0954	8.351	8058.	24.38	2.285
#1	.0014	.0112	3.717	.0014	10.50	.0076	-.0061	-.0029	.0329
#2	-.0008	.0126	3.721	.0006	10.49	.0088	.0093	-.0035	.0324
#3	.0015	.0106	3.725	-.0005	10.51	.0077	-.0035	-.0021	.0338

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1516.8**	**4138.6**	**31414.**	**6586.2**
Stddev	.5	5.3	97.	19.5
%RSD	.03005	.12876	.30911	.29589
#1	1517.0	4142.9	31305.	6602.5
#2	1516.3	4140.3	31490.	6564.6
#3	1517.1	4132.7	31448.	6591.5

Zoom In Zoom Out

Sample Name: FA43285-11 Acquired: 4/27/2017 10:22:28 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0008**	**2.479**	**.0023**	**.0222**	**-.0001**	**682.1**	**.0000**	**.0015**	**.0062**
Stddev	.0014	.047	.0016	.0006	.0003	3.1	.000	.0005	.0009
%RSD	184.1	1.906	69.17	2.780	331.8	.4474	2588.	31.76	14.51
#1	.0024	2.467	.0038	.0214	-.0004	680.4	-.0002	.0009	.0069
#2	-.0003	2.531	.0006	.0226	.0002	680.3	-.0002	.0017	.0065
#3	.0002	2.438	.0025	.0225	-.0001	685.6	.0003	.0018	.0052

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0136**	**2.876**	**30.26**	**448.7**	**.0443**	**.0278**	F **2075.**	**.0043**	**-.0004**
Stddev	.0010	.019	.13	3.3	.0002	.0007	36.	.0006	.0008
%RSD	7.225	.6459	.4225	.7464	.4886	2.689	1.731	15.03	200.1
#1	.0126	2.860	30.20	446.5	.0445	.0280	2075.	.0043	.0000
#2	.0135	2.871	30.16	446.9	.0441	.0283	2039.	.0050	.0001
#3	.0146	2.896	30.40	452.5	.0442	.0269	2110.	.0037	-.0014

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0018**	**.0511**	**7.671**	**.0017**	**12.90**	**.0407**	**.0004**	**.0030**	**.0356**
Stddev	.0030	.0074	.028	.0018	.05	.0009	.0006	.0011	.0004
%RSD	170.1	14.49	.3611	108.5	.3504	2.196	130.2	37.10	1.085
#1	-.0051	.0580	7.702	.0027	12.85	.0411	.0006	.0039	.0360
#2	-.0010	.0519	7.663	.0028	12.90	.0397	.0009	.0035	.0357
#3	.0008	.0433	7.649	-.0004	12.94	.0414	-.0002	.0017	.0352

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1453.1**	**4064.8**	**31372.**	**6583.1**
Stddev	2.4	11.2	74.	63.9
%RSD	.16350	.27447	.23657	.97037
#1	1452.2	4052.3	31403.	6598.4
#2	1455.8	4068.4	31287.	6638.0
#3	1451.3	4073.7	31426.	6513.0

Zoom In Zoom Out

Sample Name: FA43285-12 Acquired: 4/27/2017 10:27:03 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0020**	**1.174**	**-.0027**	**.0220**	**-.0004**	**1131.**	**.0000**	**.0004**	**.0002**
Stddev	.0005	.025	.0012	.0014	.0001	5.	.0003	.0010	.0012
%RSD	25.28	2.155	44.32	6.399	19.54	.4857	14690.	252.8	812.1
#1	.0014	1.156	-.0016	.0205	-.0004	1134.	.0002	-.0007	-.0002
#2	.0024	1.203	-.0026	.0233	-.0004	1134.	-.0003	.0012	.0015
#3	.0020	1.163	-.0040	.0222	-.0003	1125.	.0001	.0007	-.0009

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0123**	**.9537**	**34.68**	**374.8**	**.0246**	**.0150**	F **3455.**	**.0083**	**-.0016**
Stddev	.0003	.0046	.23	1.4	.0000	.0008	25.	.0002	.0024
%RSD	2.494	.4847	.6730	.3638	.0689	5.564	.7151	2.793	145.3
#1	.0120	.9590	34.62	375.8	.0246	.0159	3470.	.0082	-.0040
#2	.0123	.9505	34.47	373.2	.0246	.0142	3468.	.0086	.0007
#3	.0126	.9518	34.93	375.3	.0246	.0149	3426.	.0082	-.0015

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0034**	**.0068**	**4.603**	**-.0001**	F **24.96**	**.0238**	**.0076**	**-.0014**	**.0257**
Stddev	.0014	.0008	.016	.0017	.21	.0030	.0079	.0007	.0001
%RSD	39.97	12.06	.3409	1817.	.8384	12.41	104.3	48.73	.1951
#1	-.0019	.0065	4.587	.0002	24.82	.0217	-.0013	-.0007	.0257
#2	-.0046	.0078	4.605	-.0019	24.87	.0226	.0140	-.0016	.0257
#3	-.0037	.0062	4.618	.0014	25.20	.0272	.0101	-.0020	.0258

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1398.9**	**3958.5**	**30745.**	**6524.0**
Stddev	1.8	12.9	85.	17.5
%RSD	.12776	.32681	.27784	.26763
#1	1400.7	3973.0	30657.	6511.1
#2	1398.8	3954.1	30752.	6543.8
#3	1397.1	3948.3	30827.	6517.0

Zoom In Zoom Out

Sample Name: FA43285-13 Acquired: 4/27/2017 10:31:54 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0026**	**.4828**	**-.0067**	**.0457**	**-.0003**	**1223.**	**.0004**	**.0124**	**.0092**
Stddev	.0012	.0531	.0055	.0010	.0000	9.	.0001	.0005	.0021
%RSD	45.57	10.99	81.70	2.156	13.60	.7732	21.25	4.067	23.43
#1	.0014	.5441	-.0075	.0465	-.0004	1223.	.0004	.0126	.0100
#2	.0038	.4532	-.0009	.0461	-.0004	1233.	.0005	.0119	.0108
#3	.0027	.4512	-.0118	.0446	-.0003	1214.	.0004	.0129	.0067

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0156**	**1.799**	**36.33**	**505.4**	**1.746**	**.0093**	F **4278.**	**.1878**	**.0026**
Stddev	.0008	.011	.14	2.5	.003	.0008	40.	.0010	.0053
%RSD	5.216	.5841	.3923	.4884	.1907	8.332	.9412	.5533	201.3
#1	.0157	1.790	36.21	502.6	1.750	.0101	4299.	.1878	-.0033
#2	.0148	1.796	36.29	507.2	1.743	.0090	4303.	.1868	.0068
#3	.0165	1.810	36.49	506.5	1.745	.0086	4231.	.1889	.0044

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0002**	**.0168**	**4.624**	**.0008**	**19.78**	**.0093**	**.0003**	**-.0028**	**.0614**
Stddev	.0013	.0096	.010	.0017	.13	.0009	.0043	.0019	.0004
%RSD	519.7	57.46	.2167	198.2	.6453	9.980	1700.	67.01	.6715
#1	.0000	.0210	4.622	-.0011	19.63	.0096	-.0021	-.0035	.0613
#2	.0009	.0057	4.615	.0017	19.85	.0100	.0053	-.0007	.0610
#3	-.0016	.0235	4.634	.0019	19.86	.0083	-.0025	-.0044	.0618

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1356.7**	**3878.4**	**30138.**	**6467.8**
Stddev	5.3	6.3	30.	37.0
%RSD	.39036	.16151	.10003	.57208
#1	1361.3	3885.5	30173.	6500.4
#2	1350.9	3874.0	30123.	6427.6
#3	1357.8	3875.6	30119.	6475.5

Zoom In Zoom Out

Sample Name: FA43285-14 Acquired: 4/27/2017 10:36:44 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0035**	**.3793**	**-.0039**	**.0119**	**-.0005**	**593.6**	**.0002**	**.0004**	**.0007**
Stddev	.0005	.0326	.0037	.0004	.0004	.8	.0003	.0005	.0009
%RSD	14.05	8.599	94.09	3.019	83.61	.1405	152.4	110.2	137.4
#1	.0033	.3428	-.0042	.0118	.0000	594.3	.0001	-.0001	.0016
#2	.0031	.4055	-.0001	.0115	-.0006	592.7	.0006	.0006	-.0002
#3	.0040	.3895	-.0075	.0122	-.0009	593.7	-.0001	.0009	.0007

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0141**	**.2775**	**10.91**	**809.1**	**.3699**	**.0125**	**F 1948.**	**.0050**	**-.0031**
Stddev	.0008	.0135	.07	1.9	.0007	.0006	8.	.0006	.0058
%RSD	5.372	4.852	.6529	.2348	.1801	4.604	.4181	12.19	187.1
#1	.0141	.2839	10.87	807.9	.3696	.0131	1951.	.0055	-.0097
#2	.0148	.2620	10.87	811.3	.3707	.0124	1939.	.0053	.0005
#3	.0133	.2865	10.99	808.1	.3695	.0120	1954.	.0043	.0000

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0046**	**.0054**	**3.717**	**.0012**	**11.79**	**.0066**	**.0064**	**-.0010**	**.0327**
Stddev	.0060	.0193	.014	.0019	.02	.0004	.0005	.0017	.0001
%RSD	130.8	355.6	.3764	155.0	.1286	5.754	7.920	161.3	.3495
#1	-.0073	-.0150	3.716	.0010	11.81	.0065	.0068	-.0004	.0326
#2	-.0088	.0234	3.703	-.0005	11.80	.0070	.0066	.0002	.0328
#3	.0023	.0079	3.731	.0032	11.78	.0063	.0059	-.0029	.0327

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1448.5**	**4033.8**	**31239.**	**6594.5**
Stddev	2.2	7.4	166.	19.4
%RSD	.15250	.18246	.53263	.29449
#1	1446.4	4034.9	31091.	6572.1
#2	1450.8	4040.6	31205.	6606.5
#3	1448.1	4026.0	31419.	6604.9

Zoom In Zoom Out

Sample Name: FA43285-15 Acquired: 4/27/2017 10:41:19 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0011**	**19.36**	**.0121**	**.1098**	**.0008**	**678.2**	**.0000**	**.0077**	**.0301**
Stddev	.0017	.12	.0038	.0012	.0002	3.5	.000	.0005	.0016
%RSD	155.1	.6158	31.08	1.131	20.12	.5169	834.4	6.301	5.289
#1	.0024	19.49	.0088	.1092	.0008	682.3	.0000	.0083	.0314
#2	.0016	19.31	.0114	.1113	.0008	676.7	-.0002	.0073	.0283
#3	-.0008	19.27	.0162	.1090	.0006	675.8	.0002	.0077	.0306

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0287**	**19.31**	**22.70**	**257.9**	**.2522**	**.0199**	**F 720.6**	**.0263**	**-.0019**
Stddev	.0013	.14	.28	2.3	.0011	.0010	3.0	.0006	.0013
%RSD	4.623	.7209	1.217	.9072	.4277	4.852	.4148	2.371	67.55
#1	.0302	19.45	23.02	260.5	.2532	.0188	724.0	.0259	-.0005
#2	.0276	19.29	22.60	257.3	.2524	.0206	719.4	.0271	-.0022
#3	.0284	19.18	22.50	255.9	.2511	.0204	718.4	.0260	-.0030

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0019**	**.0229**	**24.59**	**.0023**	**9.322**	**.1740**	**.0008**	**.0371**	**.0875**
Stddev	.0038	.0064	.03	.0007	.055	.0016	.0024	.0011	.0003
%RSD	203.3	27.78	.1111	29.33	.5940	.9247	298.9	3.081	.3491
#1	-.0060	.0191	24.62	.0015	9.382	.1755	-.0019	.0367	.0871
#2	-.0014	.0302	24.57	.0028	9.312	.1723	.0027	.0384	.0876
#3	.0017	.0193	24.58	.0025	9.272	.1743	.0016	.0363	.0876

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1506.1**	**4156.5**	**31849.**	**6716.1**
Stddev	2.5	1.0	83.	30.3
%RSD	.16879	.02390	.25908	.45187
#1	1505.1	4157.4	31776.	6688.1
#2	1508.9	4155.5	31832.	6748.3
#3	1504.1	4156.6	31938.	6711.8

Zoom In Zoom Out

Sample Name: FA43285-16 Acquired: 4/27/2017 10:45:43 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0019**	**.1785**	**-.0085**	**.0793**	**-.0002**	**62.11**	**.0001**	**-.0005**	**-.0022**
Stddev	.0009	.0178	.0043	.0002	.0002	.12	.0001	.0004	.0002
%RSD	46.60	9.957	50.26	.2968	83.56	.1923	81.58	73.31	9.946
#1	.0013	.1849	-.0038	.0792	.0000	62.22	.0003	-.0008	-.0022
#2	.0016	.1585	-.0097	.0792	-.0003	61.98	.0001	-.0007	-.0025
#3	.0030	.1923	-.0121	.0796	-.0003	62.11	.0000	-.0001	-.0020

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0113**	**.0030**	**1.183**	**9.750**	**.0036**	**.0011**	**12.03**	**.0009**	**.0034**
Stddev	.0012	.0038	.018	.051	.0001	.0002	.03	.0006	.0020
%RSD	10.40	125.7	1.558	.5205	4.044	17.91	.2726	68.27	57.96
#1	.0104	.0040	1.196	9.710	.0037	.0010	12.00	.0015	.0014
#2	.0127	-.0012	1.190	9.807	.0035	.0009	12.07	.0004	.0053
#3	.0110	.0062	1.161	9.733	.0038	.0013	12.02	.0007	.0033

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0005**	**.0050**	**2.861**	**.0019**	**.8335**	**.0029**	**-.0081**	**.0016**	**.0395**
Stddev	.0015	.0047	.009	.0006	.0013	.0001	.0025	.0007	.0006
%RSD	275.0	95.04	.3054	33.68	.1575	5.062	31.24	45.82	1.482
#1	.0012	-.0002	2.851	.0023	.8324	.0027	-.0102	.0021	.0397
#2	.0016	.0062	2.866	.0021	.8332	.0029	-.0088	.0019	.0399
#3	-.0011	.0090	2.865	.0012	.8350	.0030	-.0053	.0008	.0388

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1595.8**	**4326.7**	**32320.**	**6862.9**
Stddev	3.8	6.3	83.	7.5
%RSD	.24069	.14578	.25657	.10872
#1	1596.7	4332.9	32226.	6854.3
#2	1591.6	4320.3	32353.	6867.7
#3	1599.2	4327.0	32382.	6866.8

Zoom In Zoom Out

Sample Name: FA43317-1 Acquired: 4/27/2017 10:50:12 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0003**	**48.24**	**-.0002**	**.0178**	**.0007**	**99.97**	**.0000**	**-.0003**	**.1092**
Stddev	.0001	.10	.0012	.0003	.0000	.24	.000	.0000	.0007
%RSD	28.55	.2154	750.5	1.689	3.900	.2446	80.43	12.23	.6013
#1	.0002	48.27	.0007	.0180	.0007	99.98	.0000	-.0003	.1088
#2	.0004	48.12	-.0015	.0175	.0007	99.72	.0000	-.0003	.1100
#3	.0004	48.32	.0004	.0179	.0007	100.2	.0000	-.0004	.1088

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0021**	**11.24**	**4.927**	**13.49**	**.0868**	**.0051**	**28.40**	**.0113**	**-.0021**
Stddev	.0003	.03	.023	.07	.0002	.0001	.08	.0003	.0008
%RSD	12.73	.3095	.4759	.5119	.2033	1.458	.2760	2.205	36.90
#1	.0024	11.26	4.915	13.54	.0867	.0052	28.42	.0114	-.0012
#2	.0022	11.20	4.912	13.41	.0867	.0051	28.31	.0115	-.0023
#3	.0018	11.25	4.954	13.52	.0870	.0052	28.46	.0111	-.0027

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0000**	**.0055**	**22.76**	**.0009**	**.3024**	**.2761**	**-.0024**	**.0822**	**.0519**
Stddev	.0012	.0008	.01	.0004	.0005	.0005	.0012	.0004	.0001
%RSD	9289.	15.34	.0456	41.36	.1644	.1836	52.39	.4308	.2836
#1	.0014	.0061	22.78	.0010	.3026	.2757	-.0037	.0818	.0518
#2	-.0007	.0046	22.76	.0005	.3018	.2766	-.0014	.0821	.0520
#3	-.0007	.0059	22.76	.0012	.3028	.2759	-.0019	.0825	.0518

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1532.8**	**4289.5**	**32644.**	**7028.6**
Stddev	2.7	5.7	58.	12.2
%RSD	.17621	.13393	.17722	.17336
#1	1530.1	4284.4	32685.	7028.4
#2	1535.5	4295.8	32668.	7040.9
#3	1532.9	4288.4	32578.	7016.5

Zoom In Zoom Out

Sample Name: FA43317-2 Acquired: 4/27/2017 10:54:32 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0000	.4079	-.0003	.0072	.0000	49.34	.0000	.0001	.0032
Stddev	.0001	.0055	.0007	.0001	.000	.18	.000	.0001	.0002
%RSD	276.4	1.351	245.2	1.916	1179.	.3602	61.96	69.02	6.204
#1	.0000	.4016	-.0011	.0071	.0000	49.54	-.0001	.0002	.0033
#2	.0000	.4101	.0003	.0073	.0000	49.28	-.0001	.0002	.0030
#3	.0002	.4119	.0000	.0073	.0000	49.20	.0000	.0000	.0033

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0026	1.731	.8962	4.614	.0109	.0068	13.57	.0009	-.0005
Stddev	.0003	.011	.0312	.040	.0001	.0001	.02	.0002	.0005
%RSD	9.596	.6567	3.481	.8574	.5591	1.259	.1148	27.06	116.3
#1	.0029	1.743	.8602	4.641	.0110	.0069	13.58	.0012	.0000
#2	.0025	1.720	.9132	4.568	.0109	.0068	13.55	.0008	-.0003
#3	.0025	1.730	.9151	4.632	.0109	.0067	13.58	.0007	-.0011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0005	.0037	.7774	.0005	.1277	.0046	-.0025	.0119	.0013
Stddev	.0011	.0014	.0022	.0002	.0003	.0002	.0011	.0002	.0001
%RSD	234.5	38.07	.2892	33.90	.2357	3.838	44.43	1.644	7.211
#1	.0008	.0021	.7749	.0005	.1274	.0048	-.0020	.0117	.0014
#2	.0014	.0044	.7778	.0006	.1280	.0046	-.0037	.0121	.0012
#3	-.0008	.0046	.7794	.0003	.1278	.0044	-.0017	.0119	.0013

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1572.7	4267.4	32253.	6872.8
Stddev	4.5	1.3	77.	38.8
%RSD	.28368	.02951	.23783	.56486
#1	1567.9	4267.0	32297.	6828.8
#2	1576.7	4266.3	32298.	6902.4
#3	1573.3	4268.8	32165.	6887.1

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 10:58:58 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2418	38.24	2.096	1.909	2.013	40.44	2.091	2.026	2.004
Stddev	.0010	.09	.004	.006	.007	.08	.001	.001	.004
%RSD	.3941	.2303	.1764	.3066	.3555	.1914	.0407	.0503	.1870
#1	.2407	38.16	2.092	1.905	2.005	40.36	2.090	2.026	2.006
#2	.2426	38.33	2.097	1.916	2.018	40.52	2.091	2.027	2.006
#3	.2420	38.23	2.099	1.907	2.015	40.44	2.091	2.025	2.000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.913	39.48	40.43	37.28	2.107	2.000	39.56	2.122	2.011
Stddev	.006	.10	.11	.07	.005	.006	.13	.002	.005
%RSD	.2904	.2425	.2842	.1972	.2260	.3164	.3379	.1038	.2431
#1	1.909	39.41	40.33	37.21	2.103	1.993	39.42	2.120	2.013
#2	1.911	39.59	40.56	37.27	2.112	2.002	39.68	2.123	2.015
#3	1.919	39.44	40.40	37.35	2.105	2.005	39.58	2.124	2.005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.089	2.064	1.965	1.990	2.044	2.080	2.043	2.071	2.158
Stddev	.005	.002	.005	.002	.010	.005	.005	.006	.001
%RSD	.2206	.0726	.2490	.0807	.4892	.2189	.2297	.3047	.0467
#1	2.084	2.063	1.959	1.992	2.033	2.076	2.043	2.066	2.158
#2	2.090	2.062	1.968	1.991	2.053	2.085	2.038	2.078	2.157
#3	2.093	2.065	1.967	1.989	2.047	2.080	2.048	2.070	2.159
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 10:58:58 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1508.1	4244.4	32266.	6807.4
Stddev	1.0	9.1	13.	19.9
%RSD	.06329	.21470	.03880	.29228
#1	1507.8	4253.3	32263.	6793.5
#2	1509.2	4244.7	32256.	6798.5
#3	1507.4	4235.1	32280.	6830.2

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 11:03:09 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0164	F -.0020	.0001	.0001	.0099	.0001	.0001
Stddev	.0001	.0101	.0011	.0002	.0000	.0029	.0001	.0000
%RSD	37.13	61.41	55.22	223.1	19.82	29.48	87.09	32.48
#1	.0005	.0277	-.0013	.0004	.0001	.0109	.0001	.0001
#2	.0002	.0134	-.0033	-.0001	.0001	.0122	.0000	.0001
#3	.0003	.0082	-.0014	.0000	.0001	.0066	.0001	.0002
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.0020					
Low Limit			-.0020					

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	F .0025	.0130	.0531	-.0015	.0001	F .0022	.0530
Stddev	.0001	.0004	.0025	.0144	.0098	.0000	.0004	.0012
%RSD	89.25	18.03	19.27	27.14	640.3	11.74	17.02	2.284
#1	-.0003	.0025	.0151	.0448	-.0074	.0001	.0025	.0525
#2	-.0001	.0029	.0138	.0448	-.0070	.0002	.0022	.0521
#3	.0000	.0020	.0102	.0698	.0098	.0001	.0018	.0544
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		.0020					.0010	
Low Limit		-.0020					-.0010	

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0006	-.0001	-.0001	.0030	.0006	.0001	.0007
Stddev	.0001	.0002	.0002	.0023	.0002	.0005	.0000	.0002
%RSD	38.75	28.28	209.2	2861.	5.346	78.23	17.05	21.50
#1	.0003	-.0006	-.0003	-.0017	.0032	.0003	.0001	.0009
#2	.0001	-.0007	-.0001	-.0011	.0030	.0011	.0001	.0007
#3	.0003	-.0004	.0001	.0025	.0028	.0004	.0001	.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 11:03:09 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm
Avg	**-.0003**	**-.0003**	**.0017**
Stddev	.0015	.0002	.0001
%RSD	528.9	68.21	3.487
#1	-.0021	-.0003	.0018
#2	.0006	-.0001	.0017
#3	.0005	-.0005	.0017
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1602.0**	**4357.5**	**32344.**	**6909.3**
Stddev	2.5	1.8	65.	23.2
%RSD	.15654	.04139	.20103	.33574
#1	1604.9	4359.5	32360.	6935.4
#2	1600.5	4356.0	32399.	6901.3
#3	1600.6	4357.1	32272.	6891.1

Zoom In Zoom Out

Sample Name: FA43317-3 Acquired: 4/27/2017 11:07:39 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**.2870**	**-.0012**	**.0033**	**.0000**	**50.47**	**.0000**	**.0000**	**.0012**
Stddev	.0002	.0029	.0008	.0000	.000	.06	.000	.0000	.0001
%RSD	94.53	1.015	71.63	.8659	23.34	.1214	170.1	92.58	12.95
#1	-.0004	.2871	-.0015	.0032	.0000	50.41	.0000	.0001	.0013
#2	-.0001	.2841	-.0002	.0032	.0000	50.53	.0000	.0000	.0010
#3	-.0001	.2899	-.0018	.0033	.0000	50.47	-.0001	.0001	.0011

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0027**	**1.477**	**.2746**	**5.132**	**.0155**	**.0024**	**2.575**	**.0024**	**.0000**
Stddev	.0004	.007	.0192	.045	.0001	.0000	.003	.0001	.0007
%RSD	14.93	.4689	6.981	.8748	.5402	1.335	.1220	5.157	2804.
#1	.0028	1.472	.2811	5.103	.0156	.0024	2.575	.0025	-.0007
#2	.0030	1.485	.2897	5.184	.0154	.0024	2.579	.0023	.0002
#3	.0022	1.475	.2531	5.109	.0156	.0024	2.573	.0025	.0006

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0009**	**.0012**	**.7421**	**.0003**	**.1073**	**.0050**	**-.0012**	**.0034**	**.0003**
Stddev	.0011	.0009	.0040	.0003	.0001	.0001	.0013	.0003	.0001
%RSD	123.2	73.93	.5432	79.98	.0811	2.462	115.2	8.077	20.86
#1	.0015	.0002	.7383	.0003	.1074	.0050	-.0017	.0032	.0003
#2	.0014	.0020	.7417	.0006	.1072	.0052	-.0021	.0033	.0002
#3	-.0004	.0015	.7463	.0001	.1073	.0049	.0004	.0037	.0004

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1582.3**	**4271.3**	**32218.**	**6864.7**
Stddev	1.7	15.6	66.	28.3
%RSD	.10451	.36408	.20427	.41179
#1	1580.4	4286.5	32272.	6877.2
#2	1583.1	4272.0	32238.	6832.3
#3	1583.3	4255.4	32145.	6884.6

Zoom In Zoom Out

Sample Name: FA43317-4 Acquired: 4/27/2017 11:12:06 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**.8179**	**-.0009**	**.0135**	**.0000**	**82.23**	**-.0001**	**.0000**	**.0013**
Stddev	.0001	.0065	.0006	.0001	.000	.15	.0000	.0000	.0002
%RSD	48.86	.7938	71.49	.9234	218.5	.1796	58.92	123.9	11.94
#1	-.0001	.8217	-.0016	.0136	.0000	82.34	-.0001	.0000	.0014
#2	-.0002	.8216	-.0004	.0136	.0000	82.29	.0000	.0000	.0014
#3	-.0002	.8104	-.0006	.0134	.0000	82.06	-.0001	.0001	.0011

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0023**	**1.751**	**2.674**	**12.15**	**.0112**	**.0072**	**27.16**	**.0005**	**-.0003**
Stddev	.0001	.007	.039	.11	.0001	.0002	.01	.0000	.0006
%RSD	2.352	.3784	1.449	.9324	.8639	2.700	.0539	6.573	170.1
#1	.0023	1.745	2.651	12.11	.0112	.0074	27.18	.0005	-.0004
#2	.0023	1.758	2.653	12.28	.0111	.0071	27.15	.0005	.0003
#3	.0022	1.749	2.719	12.06	.0113	.0070	27.15	.0005	-.0009

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0005**	**.0018**	**.7713**	**.0006**	**.4505**	**.0019**	**-.0013**	**.0027**	**.0010**
Stddev	.0005	.0012	.0014	.0002	.0009	.0001	.0020	.0001	.0000
%RSD	86.92	65.78	.1844	38.51	.1945	7.708	158.1	5.321	4.071
#1	.0009	.0021	.7721	.0007	.4515	.0018	-.0003	.0026	.0010
#2	.0006	.0005	.7697	.0008	.4503	.0019	-.0036	.0029	.0010
#3	.0000	.0029	.7721	.0004	.4498	.0021	.0001	.0027	.0010

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1558.1**	**4225.2**	**32038.**	**6883.9**
Stddev	2.5	7.5	250.	35.4
%RSD	.15779	.17745	.77986	.51377
#1	1555.7	4218.5	32199.	6881.2
#2	1560.6	4233.3	32165.	6849.9
#3	1557.9	4223.8	31750.	6920.5

Zoom In Zoom Out

Sample Name: FA43252-5 Acquired: 4/27/2017 11:21:03 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0006**	**31.35**	**.0235**	**.1232**	**.0019**	**2665.**	**.0014**	**.0107**	**.1075**
Stddev	.0015	.22	.0099	.0021	.0004	16.	.0005	.0013	.0035
%RSD	256.5	.7027	42.04	1.666	21.33	.6046	39.14	11.93	3.256
#1	.0017	31.59	.0287	.1239	.0018	2647.	.0008	.0096	.1043
#2	-.0012	31.16	.0296	.1248	.0015	2677.	.0016	.0121	.1069
#3	.0013	31.31	.0121	.1209	.0023	2671.	.0018	.0104	.1112

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0357**	**46.79**	**6.313**	**30.70**	**.8294**	**.0026**	**33.82**	**.0231**	**.0380**
Stddev	.0024	.05	.112	.17	.0011	.0014	.06	.0017	.0016
%RSD	6.642	.1092	1.768	.5577	.1354	55.73	.1788	7.391	4.272
#1	.0346	46.81	6.407	30.89	.8290	.0010	33.89	.0250	.0369
#2	.0384	46.73	6.341	30.55	.8286	.0038	33.79	.0223	.0399
#3	.0341	46.83	6.189	30.67	.8307	.0028	33.78	.0219	.0373

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0023**	**.0317**	**4.380**	**.0255**	**16.51**	**.5503**	**-.0098**	**.0813**	**.1180**
Stddev	.0100	.0216	.010	.0042	.03	.0017	.0192	.0012	.0009
%RSD	434.7	68.25	.2214	16.36	.1725	.3005	197.2	1.443	.7750
#1	.0038	.0409	4.369	.0211	16.54	.5504	-.0140	.0811	.1182
#2	.0032	.0070	4.383	.0294	16.49	.5485	.0113	.0826	.1188
#3	-.0138	.0472	4.387	.0260	16.49	.5518	-.0265	.0802	.1170

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1524.7**	**4215.9**	**32142.**	**6884.5**
Stddev	2.8	4.1	31.	10.2
%RSD	.18057	.09630	.09515	.14767
#1	1522.4	4215.9	32108.	6872.9
#2	1527.7	4219.9	32155.	6889.3
#3	1523.9	4211.8	32165.	6891.4

Zoom In Zoom Out

Sample Name: MP32050-D1 Acquired: 4/27/2017 11:25:37 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0009	35.64	.0382	.1161	.0024	2107.	.0013	.0104	.1097
Stddev	.0043	.03	.0052	.0012	.0007	20.	.0006	.0009	.0027
%RSD	481.6	.0737	13.58	1.029	31.17	.9450	44.30	8.959	2.439
#1	.0029	35.67	.0436	.1149	.0021	2109.	.0018	.0105	.1088
#2	-.0041	35.65	.0379	.1173	.0032	2126.	.0007	.0112	.1127
#3	.0039	35.62	.0333	.1162	.0018	2086.	.0013	.0094	.1076

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0335	48.76	7.220	31.60	.8311	.0022	24.19	.0250	.0305
Stddev	.0023	.06	.097	.14	.0045	.0003	.05	.0023	.0090
%RSD	6.779	.1230	1.338	.4306	.5367	14.68	.2167	9.077	29.39
#1	.0312	48.81	7.240	31.51	.8354	.0023	24.25	.0229	.0360
#2	.0358	48.78	7.115	31.75	.8314	.0019	24.15	.0247	.0353
#3	.0335	48.69	7.306	31.53	.8265	.0025	24.18	.0274	.0201

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	-.0067	.0188	3.940	.0262	13.48	.6603	.0141	.0942	.1308
Stddev	.0133	.0014	.005	.0024	.02	.0072	.0034	.0012	.0004
%RSD	198.1	7.472	.1338	9.010	.1274	1.096	24.15	1.262	.3319
#1	.0017	.0189	3.934	.0284	13.48	.6536	.0120	.0950	.1304
#2	-.0221	.0202	3.944	.0265	13.49	.6680	.0180	.0929	.1312
#3	.0002	.0174	3.942	.0237	13.46	.6593	.0122	.0948	.1307

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1543.3	4251.4	32361.	6911.2
Stddev	.1	7.9	150.	24.7
%RSD	.00640	.18546	.46461	.35789
#1	1543.3	4260.5	32288.	6918.0
#2	1543.2	4246.4	32262.	6883.8
#3	1543.4	4247.3	32534.	6931.9

Zoom In Zoom Out

Sample Name: MP32050-S1 Acquired: 4/27/2017 11:30:10 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0494	79.86	2.221	2.190	.0565	2542.	.0563	.5399	.3436
Stddev	.0071	.30	.011	.006	.0005	11.	.0002	.0020	.0036
%RSD	14.41	.3812	.4757	.2672	.8606	.4425	.4359	.3702	1.059
#1	.0531	80.03	2.211	2.195	.0562	2544.	.0561	.5376	.3398
#2	.0412	80.04	2.220	2.184	.0570	2553.	.0565	.5411	.3470
#3	.0540	79.51	2.232	2.191	.0562	2530.	.0564	.5411	.3441

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2942	78.98	35.48	59.27	1.341	.5154	59.68	.5940	.5480
Stddev	.0014	.36	.24	.70	.004	.0004	.21	.0016	.0048
%RSD	.4747	.4582	.6630	1.177	.2809	.0842	.3483	.2619	.8683
#1	.2951	79.02	35.65	59.12	1.345	.5158	59.90	.5924	.5431
#2	.2926	79.31	35.59	60.03	1.338	.5150	59.64	.5940	.5526
#3	.2948	78.60	35.21	58.66	1.338	.5156	59.49	.5955	.5484

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1629	2.192	4.463	.5396	17.97	1.111	2.071	.6291	.6959
Stddev	.0109	.029	.007	.0014	.05	.002	.017	.0048	.0017
%RSD	6.680	1.314	.1677	.2525	.2572	.1382	.8006	.7589	.2512
#1	.1748	2.208	4.464	.5382	18.00	1.112	2.064	.6331	.6959
#2	.1606	2.159	4.470	.5410	17.98	1.111	2.060	.6304	.6976
#3	.1534	2.209	4.455	.5397	17.91	1.109	2.090	.6238	.6941

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1520.5	4221.7	32142.	6891.6
Stddev	2.8	5.9	149.	46.0
%RSD	.18525	.14028	.46260	.66813
#1	1522.5	4226.5	32005.	6910.8
#2	1521.8	4215.1	32300.	6839.1
#3	1517.3	4223.5	32122.	6925.0

Zoom In Zoom Out

Sample Name: MP32050-S2 Acquired: 4/27/2017 11:34:39 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0472	60.50	2.219	2.160	.0549	2613.	.0555	.5346	.3044
Stddev	.0039	.28	.011	.012	.0007	12.	.0002	.0012	.0045
%RSD	8.240	.4684	.5139	.5695	1.312	.4685	.3535	.2256	1.474
#1	.0509	60.81	2.206	2.169	.0557	2612.	.0553	.5350	.3063
#2	.0476	60.42	2.221	2.165	.0544	2626.	.0556	.5356	.2993
#3	.0431	60.26	2.229	2.146	.0546	2602.	.0557	.5333	.3077

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.2936	65.92	33.72	54.28	1.368	.5322	59.49	.5837	.5503
Stddev	.0044	.29	.10	.35	.003	.0004	.25	.0013	.0152
%RSD	1.487	.4340	.3012	.6532	.2128	.0712	.4177	.2208	2.765
#1	.2977	66.18	33.83	54.69	1.371	.5326	59.62	.5839	.5678
#2	.2941	65.62	33.63	54.10	1.369	.5322	59.64	.5849	.5415
#3	.2890	65.97	33.72	54.05	1.365	.5318	59.20	.5823	.5414

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1960	2.178	3.415	.5519	15.02	.9437	2.052	.5975	.6868
Stddev	.0117	.011	.013	.0045	.03	.0028	.015	.0031	.0015
%RSD	5.976	.4930	.3794	.8184	.1849	.2918	.7376	.5176	.2141
#1	.1961	2.181	3.427	.5550	15.05	.9436	2.044	.6008	.6858
#2	.2077	2.187	3.416	.5539	15.01	.9465	2.042	.5969	.6861
#3	.1842	2.166	3.401	.5467	14.99	.9409	2.069	.5948	.6885

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1524.3	4207.8	31867.	6807.5
Stddev	1.3	6.7	105.	43.4
%RSD	.08406	.15892	.33017	.63684
#1	1525.7	4206.8	31893.	6757.6
#2	1523.1	4201.7	31957.	6835.0
#3	1524.2	4214.9	31751.	6830.1

Zoom In Zoom Out

Sample Name: MP32050-PS1 Acquired: 4/27/2017 11:39:10 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 10.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0525	33.54	.1495	.3938	.0570	2646.	.0579	.0643	.1559
Stddev	.0044	.31	.0035	.0016	.0003	12.	.0008	.0007	.0021
%RSD	8.426	.9151	2.367	.3958	.5362	.4375	1.422	1.142	1.318
#1	.0484	33.88	.1484	.3944	.0574	2652.	.0572	.0635	.1583
#2	.0572	33.29	.1466	.3920	.0568	2633.	.0576	.0649	.1547
#3	.0519	33.44	.1534	.3949	.0569	2654.	.0588	.0644	.1548

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.1365	49.27	17.02	35.27	.8749	.1178	44.11	.1373	.0896
Stddev	.0016	.01	.22	.35	.0018	.0007	.06	.0017	.0078
%RSD	1.204	.0286	1.320	1.006	.2061	.5652	.1412	1.226	8.714
#1	.1347	49.26	17.26	35.18	.8742	.1185	44.08	.1364	.0984
#2	.1380	49.25	16.99	34.96	.8769	.1172	44.07	.1392	.0867
#3	.1367	49.28	16.81	35.66	.8735	.1176	44.18	.1363	.0836

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.1197	.1378	4.316	.0795	16.21	.6505	.1125	.1352	.4165
Stddev	.0145	.0155	.004	.0020	.03	.0053	.0050	.0009	.0014
%RSD	12.09	11.28	.0894	2.526	.2069	.8188	4.454	.6920	.3286
#1	.1182	.1346	4.317	.0818	16.24	.6536	.1126	.1360	.4180
#2	.1349	.1547	4.312	.0782	16.18	.6535	.1174	.1342	.4159
#3	.1061	.1241	4.319	.0785	16.19	.6443	.1074	.1353	.4155

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1524.9	4220.9	32285.	6812.2
Stddev	1.9	8.5	89.	19.3
%RSD	.12482	.20141	.27474	.28351
#1	1526.9	4219.4	32306.	6818.6
#2	1524.6	4230.1	32188.	6827.5
#3	1523.1	4213.3	32361.	6790.5

Zoom In Zoom Out

Sample Name: MP32050-SD1 Acquired: 4/27/2017 11:43:42 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 50.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**31.21**	**-.0330**	**.1152**	**-.0028**	**2698.**	**.0026**	**.0090**	**.1046**
Stddev	.0060	.43	.0185	.0024	.0016	4.	.0022	.0033	.0090
%RSD	1374.	1.362	55.95	2.095	55.82	.1636	86.31	36.86	8.599
#1	.0037	31.68	-.0173	.1146	-.0012	2701.	.0014	.0097	.0945
#2	-.0073	30.85	-.0533	.1132	-.0043	2693.	.0052	.0118	.1119
#3	.0023	31.09	-.0284	.1179	-.0028	2701.	.0012	.0054	.1074

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1256**	**46.55**	**7.397**	**30.64**	**.8325**	**-.0053**	**33.94**	**.0291**	**.0385**
Stddev	.0093	.17	.719	.93	.0012	.0066	.32	.0130	.0177
%RSD	7.423	.3615	9.725	3.049	.1443	125.6	.9375	44.52	45.82
#1	.1155	46.58	7.249	30.98	.8339	-.0107	34.14	.0328	.0587
#2	.1338	46.37	6.763	31.35	.8316	.0021	33.58	.0398	.0256
#3	.1274	46.70	8.179	29.58	.8320	-.0073	34.12	.0147	.0313

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0240**	**-.0197**	**5.549**	**.0227**	**16.17**	**.6962**	**-.0840**	**.0477**	**.3179**
Stddev	.0449	.0648	.074	.0044	.02	.0924	.0234	.0131	.0028
%RSD	187.2	328.5	1.338	19.28	.1224	13.27	27.80	27.39	.8836
#1	.0269	-.0913	5.597	.0199	16.19	.6438	-.0963	.0331	.3202
#2	-.0581	.0350	5.587	.0204	16.17	.8029	-.0987	.0517	.3187
#3	-.0407	-.0029	5.464	.0277	16.15	.6419	-.0571	.0583	.3148

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1582.2**	**4284.8**	**32120.**	**6839.6**
Stddev	1.4	2.0	30.	16.8
%RSD	.08836	.04607	.09393	.24549
#1	1582.0	4285.6	32149.	6822.6
#2	1581.0	4286.3	32124.	6856.1
#3	1583.7	4282.6	32089.	6840.1

Zoom In Zoom Out

Sample Name: FA43270-1 Acquired: 4/27/2017 11:48:10 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 20.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0018**	**224.9**	**.0949**	**2.538**	**.0800**	**215.1**	**.0005**	**.0822**	**.1785**
Stddev	.0036	.6	.0153	.014	.0009	.7	.0001	.0014	.0062
%RSD	200.9	.2535	16.15	.5630	1.140	.3047	20.70	1.671	3.455
#1	.0016	225.0	.0960	2.547	.0791	214.5	.0004	.0809	.1724
#2	-.0056	225.5	.0790	2.522	.0809	215.8	.0006	.0836	.1848
#3	-.0014	224.3	.1096	2.546	.0799	215.2	.0006	.0821	.1784

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1652**	**366.8**	**48.42**	**40.63**	**6.290**	**.0077**	**1.540**	**.1960**	**.2417**
Stddev	.0025	.8	.27	.42	.006	.0004	.102	.0041	.0107
%RSD	1.509	.2259	.5531	1.045	.0941	4.615	6.647	2.075	4.445
#1	.1654	366.3	48.72	40.16	6.297	.0081	1.658	.1913	.2294
#2	.1626	367.7	48.33	40.99	6.285	.0075	1.474	.1989	.2466
#3	.1676	366.3	48.21	40.74	6.290	.0076	1.489	.1978	.2492

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0216**	**-.0078**	**4.526**	**.0585**	**.8497**	**4.107**	**-.0292**	**.3934**	**1.334**
Stddev	.0256	.0220	.020	.0062	.0033	.013	.0173	.0030	.004
%RSD	118.4	282.0	.4308	10.59	.3895	.3090	59.17	.7566	.2629
#1	-.0448	-.0308	4.510	.0542	.8460	4.120	-.0482	.3969	1.337
#2	.0058	.0131	4.520	.0656	.8510	4.094	-.0251	.3917	1.335
#3	-.0258	-.0058	4.548	.0556	.8522	4.106	-.0144	.3917	1.331

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1586.8**	**4965.3**	**37043.**	**7896.4**
Stddev	2.5	8.5	94.	18.7
%RSD	.15890	.17098	.25286	.23644
#1	1586.8	4974.1	36937.	7917.3
#2	1589.4	4964.5	37114.	7890.2
#3	1584.3	4957.2	37079.	7881.6

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 11:52:33 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2444**	**38.51**	**2.128**	**1.921**	**2.032**	**40.80**	**2.122**	**2.056**	**2.038**
Stddev	.0015	.11	.004	.004	.006	.09	.003	.002	.006
%RSD	.6097	.2894	.1944	.2151	.2743	.2114	.1162	.1059	.2979
#1	.2434	38.63	2.132	1.925	2.038	40.90	2.120	2.054	2.038
#2	.2461	38.50	2.128	1.917	2.027	40.74	2.121	2.056	2.044
#3	.2437	38.41	2.124	1.920	2.030	40.76	2.125	2.058	2.032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.945**	**39.84**	**40.79**	**37.52**	**2.133**	**2.027**	**40.08**	**2.156**	**2.044**
Stddev	.008	.11	.08	.13	.011	.006	.12	.001	.008
%RSD	.4212	.2832	.2002	.3506	.5033	.2935	.2881	.0467	.3753
#1	1.950	39.97	40.88	37.67	2.136	2.021	40.21	2.155	2.036
#2	1.936	39.76	40.73	37.43	2.143	2.027	39.98	2.155	2.043
#3	1.950	39.79	40.76	37.47	2.122	2.033	40.06	2.157	2.051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.124**	**2.093**	**1.997**	**2.019**	**2.072**	**2.125**	**2.061**	**2.105**	**2.186**
Stddev	.005	.002	.003	.002	.004	.004	.013	.008	.004
%RSD	.2398	.1120	.1501	.1120	.2117	.2029	.6426	.3909	.1610
#1	2.119	2.092	1.995	2.021	2.076	2.128	2.052	2.110	2.187
#2	2.126	2.090	1.997	2.017	2.067	2.120	2.054	2.109	2.182
#3	2.128	2.095	2.001	2.018	2.071	2.127	2.076	2.095	2.189
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 11:52:33 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1483.6**	**4171.2**	**31687.**	**6766.4**
Stddev	4.0	3.9	116.	23.4
%RSD	.26701	.09352	.36621	.34530
#1	1487.9	4175.7	31682.	6741.3
#2	1482.7	4169.0	31574.	6787.6
#3	1480.1	4169.0	31805.	6770.3

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 11:56:44 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0017**	**-.0014**	**.0000**	**.0000**	**.0024**	**.0001**	**.0000**	**-.0001**
Stddev	.0001	.0043	.0005	.000	.000	.0012	.0000	.000	.0001
%RSD	52.79	250.4	34.37	254.0	6705.	52.20	59.44	440.7	117.9
#1	.0002	-.0030	-.0020	.0000	.0000	.0011	.0001	.0001	.0000
#2	.0002	.0054	-.0010	.0000	.0000	.0035	.0000	-.0001	-.0002
#3	.0001	.0028	-.0013	-.0002	.0000	.0026	.0001	-.0002	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **.0024**	**.0091**	**.0384**	**.0092**	**.0000**	F **.0022**	**.0226**	**.0004**	**-.0007**
Stddev	.0002	.0016	.0101	.0114	.0000	.0006	.0037	.0001	.0005
%RSD	8.143	18.08	26.16	124.3	224.1	27.13	16.51	26.51	76.51
#1	.0023	.0090	.0489	.0040	.0000	.0027	.0204	.0004	-.0003
#2	.0023	.0075	.0289	.0012	.0000	.0023	.0205	.0005	-.0004
#3	.0026	.0108	.0375	.0222	.0000	.0016	.0269	.0003	-.0012
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit	.0020					.0010			
Low Limit	-.0020					-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0007**	**.0020**	**.0020**	**.0007**	**.0000**	**.0006**	**.0006**	**-.0006**	**.0000**
Stddev	.0008	.0008	.0002	.0001	.0000	.0001	.0002	.0001	.0001
%RSD	109.8	42.71	10.99	16.53	261.7	16.80	38.60	11.47	289.9
#1	-.0007	.0029	.0018	.0007	.0001	.0005	.0004	-.0005	-.0001
#2	-.0014	.0012	.0019	.0008	.0000	.0007	.0008	-.0006	.0001
#3	.0001	.0019	.0022	.0006	.0000	.0005	.0005	-.0006	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 11:56:44 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1581.8**	**4305.1**	**31779.**	**6886.5**
Stddev	.4	11.3	45.	22.7
%RSD	.02696	.26274	.14175	.32966
#1	1582.2	4299.6	31819.	6860.8
#2	1581.7	4318.1	31786.	6903.9
#3	1581.4	4297.7	31730.	6894.7

Zoom In Zoom Out

Sample Name: FA43270-2 Acquired: 4/27/2017 12:01:14 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 200.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0069**	**195.5**	**-.0795**	**2.079**	**.0248**	**111.0**	**.0128**	**.1681**	**.1916**
Stddev	.0748	1.4	.1127	.034	.0029	.4	.0016	.0163	.0566
%RSD	1081.	.7340	141.8	1.638	11.85	.3739	12.23	9.710	29.52
#1	.0776	196.0	-.1382	2.040	.0221	110.7	.0112	.1702	.1307
#2	.0145	193.9	-.1508	2.105	.0279	110.8	.0143	.1509	.2016
#3	-.0714	196.6	.0505	2.091	.0245	111.5	.0130	.1834	.2425

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**10.30**	**438.6**	**71.53**	**87.58**	**7.907**	**.0816**	**5.607**	**.3188**	**335.5**
Stddev	.12	2.0	6.13	3.00	.003	.0150	1.081	.0447	.2
%RSD	1.213	.4565	8.565	3.431	.0411	18.44	19.28	14.03	.0609
#1	10.33	441.0	64.49	91.04	7.910	.0699	4.423	.3534	335.7
#2	10.16	437.4	75.64	85.71	7.904	.0762	6.541	.2683	335.4
#3	10.40	437.6	74.47	85.98	7.908	.0986	5.857	.3347	335.3

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**1.898**	**.1299**	**6.595**	**.5454**	**.8720**	**4.608**	**-.1298**	**.4202**	**4.120**
Stddev	.127	.0894	.109	.0287	.0059	.012	.1078	.0598	.015
%RSD	6.685	68.78	1.655	5.257	.6744	.2679	83.12	14.23	.3655
#1	1.907	.0599	6.717	.5779	.8717	4.604	-.1928	.4031	4.114
#2	1.766	.0993	6.506	.5235	.8780	4.621	-.1913	.4867	4.109
#3	2.020	.2306	6.561	.5349	.8662	4.597	-.0052	.3708	4.137

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1590.3**	**4350.0**	**32301.**	**6954.1**
Stddev	1.8	6.4	141.	28.8
%RSD	.11527	.14612	.43727	.41376
#1	1590.1	4356.8	32229.	6924.6
#2	1588.5	4344.1	32464.	6982.1
#3	1592.2	4349.2	32210.	6955.4

Zoom In Zoom Out

Sample Name: FA43676-3A Acquired: 4/27/2017 12:05:43 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0016**	**.0327**	**-.0038**	**.1490**	**-.0002**	**21.80**	**.5338**	**.0687**	**.0077**
Stddev	.0016	.0202	.0058	.0014	.0001	.08	.0005	.0006	.0003
%RSD	103.5	61.77	152.1	.9225	31.52	.3594	.0995	.9408	4.347
#1	-.0003	.0295	.0011	.1484	-.0001	21.89	.5335	.0694	.0073
#2	.0024	.0143	-.0023	.1480	-.0002	21.79	.5334	.0681	.0078
#3	.0026	.0543	-.0103	.1505	-.0002	21.73	.5344	.0687	.0079

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0126**	**37.37**	**.5851**	**.8010**	**.5596**	**.0007**	**156.9**	**.2066**	**-.0024**
Stddev	.0004	.09	.0957	.0588	.0025	.0006	.3	.0005	.0002
%RSD	3.039	.2460	16.37	7.344	.4445	87.08	.2093	.2335	8.134
#1	.0128	37.46	.6034	.8468	.5611	.0008	157.3	.2067	-.0024
#2	.0121	37.28	.4815	.7347	.5567	.0012	156.7	.2061	-.0026
#3	.0128	37.38	.6703	.8217	.5608	.0000	156.7	.2070	-.0022

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0007**	**-.0012**	**.6304**	**.0041**	**.1509**	**.0017**	**-.0020**	**-.0021**	F **34.03**
Stddev	.0005	.0060	.0007	.0006	.0004	.0005	.0098	.0006	.03
%RSD	62.53	500.9	.1168	14.23	.2484	31.81	484.7	29.69	.0849
#1	-.0010	.0047	.6311	.0045	.1511	.0013	-.0036	-.0019	34.00
#2	-.0010	-.0010	.6297	.0043	.1505	.0015	-.0109	-.0016	34.03
#3	-.0002	-.0073	.6305	.0034	.1512	.0023	.0084	-.0028	34.05

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1587.0**	**4305.6**	**32370.**	**6836.9**
Stddev	2.0	8.6	23.	6.2
%RSD	.12419	.19974	.07186	.09007
#1	1586.9	4303.4	32392.	6837.8
#2	1589.0	4315.1	32373.	6842.6
#3	1585.1	4298.4	32345.	6830.4

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 12:10:06 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2447**	**38.55**	**2.127**	**1.927**	**2.030**	**40.82**	**2.120**	**2.057**	**2.026**
Stddev	.0005	.05	.006	.001	.006	.13	.001	.002	.004
%RSD	.2121	.1272	.2667	.0749	.2932	.3079	.0446	.1043	.1802
#1	.2445	38.61	2.133	1.928	2.036	40.97	2.119	2.060	2.024
#2	.2452	38.53	2.128	1.925	2.025	40.73	2.121	2.056	2.025
#3	.2442	38.52	2.122	1.927	2.028	40.78	2.120	2.056	2.031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.948**	**39.82**	**40.76**	**37.54**	**2.121**	**2.028**	**40.13**	**2.155**	**2.041**
Stddev	.002	.08	.10	.17	.002	.003	.10	.002	.004
%RSD	.1191	.1970	.2561	.4590	.1118	.1296	.2375	.0676	.1730
#1	1.946	39.90	40.86	37.71	2.123	2.025	40.22	2.156	2.038
#2	1.948	39.75	40.66	37.53	2.122	2.028	40.03	2.155	2.045
#3	1.950	39.82	40.76	37.37	2.119	2.030	40.15	2.153	2.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.127**	**2.090**	**1.994**	**2.017**	**2.064**	**2.114**	**2.056**	**2.094**	**2.181**
Stddev	.004	.004	.002	.005	.005	.007	.001	.003	.005
%RSD	.1846	.1905	.0769	.2337	.2537	.3115	.0480	.1246	.2161
#1	2.126	2.095	1.995	2.016	2.068	2.113	2.056	2.096	2.178
#2	2.125	2.087	1.992	2.022	2.058	2.108	2.058	2.091	2.186
#3	2.132	2.089	1.993	2.012	2.066	2.121	2.056	2.096	2.178
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 12:10:06 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1484.4**	**4174.1**	**31914.**	**6747.4**
Stddev	1.0	6.8	101.	29.6
%RSD	.06990	.16401	.31640	.43892
#1	1483.3	4166.2	31988.	6720.4
#2	1485.3	4178.3	31955.	6742.8
#3	1484.7	4177.7	31799.	6779.1

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 12:14:16 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0000**	**.0004**	**-.0011**	**.0001**	**.0001**	**.0024**	**.0001**	**.0002**	**-.0006**
Stddev	.0001	.0068	.0007	.0000	.0000	.0026	.0001	.0001	.0003
%RSD	572.9	1576.	64.58	96.85	19.94	106.5	61.80	55.14	54.84
#1	-.0001	.0064	-.0014	.0001	.0001	.0050	.0000	.0001	-.0003
#2	.0000	.0019	-.0003	.0001	.0001	.0022	.0002	.0002	-.0009
#3	.0002	-.0070	-.0017	.0000	.0001	.0000	.0001	.0001	-.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **.0024**	**.0098**	**.0389**	**-.0078**	**.0001**	F **.0023**	**.0185**	**.0004**	**-.0006**
Stddev	.0001	.0021	.0232	.0056	.0000	.0004	.0062	.0001	.0008
%RSD	5.886	21.30	59.60	71.38	77.57	18.70	33.28	18.65	143.5
#1	.0022	.0120	.0581	-.0014	.0000	.0028	.0255	.0005	-.0004
#2	.0024	.0094	.0131	-.0114	.0001	.0024	.0163	.0003	-.0014
#3	.0025	.0079	.0454	-.0106	.0001	.0019	.0138	.0003	.0002
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit	.0020					.0010			
Low Limit	-.0020					-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0011**	**.0019**	**.0007**	**.0001**	**.0007**	**-.0003**	**-.0004**	**.0001**
Stddev	.0011	.0026	.0000	.0005	.0000	.0001	.0027	.0004	.0001
%RSD	618.2	237.8	1.504	62.18	27.69	10.85	786.7	107.4	127.5
#1	.0004	-.0017	.0019	.0002	.0002	.0007	.0007	-.0002	.0002
#2	.0005	.0034	.0019	.0011	.0001	.0008	.0017	-.0001	.0000
#3	-.0014	.0015	.0019	.0008	.0001	.0007	-.0034	-.0009	.0000
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 12:14:16 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1589.1**	**4314.1**	**31946.**	**6865.1**
Stddev	2.4	9.4	93.	45.6
%RSD	.14791	.21688	.29097	.66460
#1	1587.5	4309.0	31866.	6826.4
#2	1591.8	4324.9	31925.	6853.5
#3	1588.0	4308.5	32048.	6915.4

Zoom In Zoom Out

Sample Name: ICV Acquired: 4/27/2017 13:07:10 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2602	39.62	2.019	1.998	2.039	40.75	2.018	2.009	2.014
Stddev	.0014	.14	.002	.011	.006	.07	.002	.000	.002
%RSD	.5383	.3532	.0863	.5275	.2896	.1675	.0785	.0201	.1081
#1	.2618	39.71	2.020	2.006	2.041	40.73	2.020	2.009	2.016
#2	.2597	39.46	2.021	1.986	2.032	40.69	2.017	2.009	2.012
#3	.2592	39.69	2.018	2.003	2.044	40.83	2.017	2.010	2.013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.990	40.25	41.46	41.66	2.041	2.033	40.23	2.018	1.978
Stddev	.008	.15	.11	.08	.006	.000	.13	.001	.005
%RSD	.4159	.3719	.2582	.1875	.2920	.0094	.3199	.0700	.2499
#1	1.994	40.28	41.54	41.60	2.047	2.033	40.29	2.019	1.976
#2	1.995	40.09	41.34	41.63	2.035	2.033	40.08	2.017	1.974
#3	1.980	40.38	41.51	41.75	2.042	2.033	40.31	2.019	1.983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.009	2.003	.1172	2.053	2.012	2.026	2.052	1.953	2.022
Stddev	.002	.004	.0005	.001	.007	.005	.002	.003	.003
%RSD	.1214	.1809	.4199	.0532	.3360	.2379	.0795	.1684	.1633
#1	2.007	2.004	.1175	2.053	2.019	2.024	2.053	1.957	2.025
#2	2.009	2.006	.1166	2.054	2.005	2.031	2.053	1.950	2.019
#3	2.012	1.999	.1174	2.052	2.013	2.022	2.050	1.952	2.021
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: ICV Acquired: 4/27/2017 13:07:10 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1474.2	4125.1	31343.	6719.7
Stddev	.9	1.5	68.	36.7
%RSD	.06128	.03664	.21637	.54645
#1	1473.8	4123.7	31279.	6750.1
#2	1475.2	4124.9	31338.	6730.0
#3	1473.6	4126.7	31414.	6678.9

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 13:15:22 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2437	39.56	2.002	1.986	2.018	40.14	2.022	2.002	2.006
Stddev	.0005	.12	.007	.006	.005	.08	.002	.002	.003
%RSD	.2123	.3083	.3765	.2949	.2550	.1880	.1094	.0830	.1711
#1	.2440	39.58	1.999	1.991	2.020	40.16	2.019	2.001	2.007
#2	.2440	39.67	1.996	1.989	2.022	40.20	2.022	2.001	2.002
#3	.2431	39.43	2.010	1.980	2.012	40.05	2.023	2.004	2.008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.958	40.44	39.76	39.90	2.029	1.967	39.82	2.017	1.976
Stddev	.004	.09	.09	.18	.002	.004	.11	.002	.007
%RSD	.1899	.2306	.2285	.4510	.0813	.1970	.2769	.1169	.3613
#1	1.962	40.45	39.74	40.00	2.030	1.966	39.83	2.015	1.971
#2	1.956	40.54	39.86	40.00	2.030	1.964	39.93	2.015	1.984
#3	1.955	40.35	39.68	39.69	2.027	1.971	39.71	2.019	1.973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.998	2.002	1.889	1.995	2.036	2.023	1.984	2.004	2.031
Stddev	.005	.004	.006	.003	.003	.007	.007	.003	.004
%RSD	.2333	.2180	.3052	.1443	.1548	.3518	.3319	.1596	.1781
#1	1.997	2.003	1.892	1.992	2.036	2.030	1.980	2.007	2.027
#2	1.994	1.998	1.882	1.998	2.039	2.016	1.980	2.004	2.034
#3	2.003	2.007	1.892	1.995	2.033	2.024	1.991	2.001	2.033
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 13:15:22 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1479.3	4143.3	31675.	6740.3
Stddev	4.9	11.5	76.	30.4
%RSD	.32898	.27687	.23888	.45040
#1	1478.0	4137.9	31591.	6739.9
#2	1484.6	4156.4	31697.	6710.1
#3	1475.1	4135.4	31737.	6770.8

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 13:22:30 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0088**	**-.0007**	**.0000**	**.0002**	**.0065**	**.0001**	**.0001**	**-.0001**
Stddev	.0004	.0027	.0007	.000	.0001	.0005	.0001	.0000	.0002
%RSD	250.8	30.31	107.1	1641.	22.55	7.210	60.44	50.00	167.0
#1	-.0002	.0118	-.0001	.0001	.0003	.0070	.0002	.0001	.0000
#2	-.0005	.0079	-.0015	.0000	.0002	.0061	.0001	.0000	-.0001
#3	.0002	.0067	-.0004	-.0002	.0002	.0065	.0001	.0001	-.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0087**	**.0175**	**-.0104**	**.0002**	F **.0017**	**.0037**	**.0002**	**-.0002**
Stddev	.0002	.0027	.0241	.0098	.0000	.0002	.0035	.0002	.0006
%RSD	46.16	30.56	138.2	95.03	19.52	10.66	96.70	101.8	285.7
#1	.0003	.0105	.0161	-.0208	.0002	.0019	.0076	.0004	.0003
#2	.0002	.0099	.0423	-.0091	.0002	.0016	.0028	.0002	-.0009
#3	.0006	.0056	-.0060	-.0012	.0001	.0016	.0006	.0000	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0005**	**.0007**	**.0005**	**.0003**	**.0004**	**.0005**	**.0002**	**.0001**
Stddev	.0002	.0005	.0004	.0001	.0000	.0001	.0005	.0002	.0001
%RSD	104.0	117.0	58.10	23.71	11.20	24.78	87.18	81.12	56.00
#1	.0000	.0003	.0011	.0007	.0003	.0005	.0001	.0000	.0001
#2	.0004	.0000	.0007	.0005	.0003	.0004	.0010	.0003	.0002
#3	.0002	.0010	.0003	.0005	.0002	.0004	.0005	.0003	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 13:22:30 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1583.5**	**4272.8**	**31676.**	**6820.2**
Stddev	1.2	12.9	94.	53.7
%RSD	.07759	.30187	.29683	.78708
#1	1584.5	4282.1	31581.	6762.5
#2	1582.1	4278.2	31769.	6868.7
#3	1583.8	4258.1	31680.	6829.4

Zoom In Zoom Out

Sample Name: MP32057-MB1 Acquired: 4/27/2017 13:27:56 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0003**	**-.0010**	**-.0011**	**-.0002**	**.0001**	**.0052**	**.0000**	**.0000**	**.0002**
Stddev	.0003	.0050	.0002	.0002	.0001	.0003	.000	.0000	.0004
%RSD	82.52	512.5	19.37	132.0	101.6	5.907	344.7	3488.	246.6
#1	-.0007	-.0018	-.0011	.0000	.0000	.0048	-.0001	.0000	.0006
#2	-.0003	-.0055	-.0010	-.0001	.0000	.0052	.0000	.0000	-.0002
#3	-.0001	.0044	-.0014	-.0005	.0001	.0055	.0000	.0000	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0018**	**.0161**	**-.0036**	**.0001**	**.0010**	**.0001**	**-.0001**	**-.0005**
Stddev	.0002	.0014	.0256	.0117	.0000	.0001	.0083	.0001	.0007
%RSD	121.0	75.45	158.9	325.0	88.98	11.88	8035.	57.29	164.4
#1	.0002	.0022	.0452	-.0163	.0000	.0010	-.0092	-.0001	-.0010
#2	.0004	.0030	.0063	.0068	.0000	.0011	.0027	-.0002	.0004
#3	.0000	.0003	-.0031	-.0014	.0001	.0009	.0068	-.0001	-.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0015**	**.0017**	**-.0004**	**.0002**	**.0000**	**.0003**	**.0003**	**.0001**	**.0005**
Stddev	.0003	.0007	.0001	.0002	.0001	.0001	.0023	.0000	.0000
%RSD	18.57	43.16	22.95	89.76	165.2	18.57	744.2	21.09	10.25
#1	.0014	.0010	-.0004	.0004	.0001	.0003	-.0023	.0001	.0005
#2	.0013	.0024	-.0004	.0001	.0000	.0003	.0015	.0001	.0005
#3	.0018	.0017	-.0003	.0001	.0000	.0002	.0017	.0001	.0004
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP32057-MB1 Acquired: 4/27/2017 13:27:56 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1579.9**	**4285.4**	**32007.**	**6963.9**
Stddev	5.6	2.5	91.	34.7
%RSD	.35171	.05754	.28316	.49879
#1	1573.5	4283.6	31932.	6925.8
#2	1583.3	4288.2	32108.	6972.0
#3	1582.9	4284.3	31982.	6993.8

Zoom In Zoom Out

Sample Name: MP32057-B1 Acquired: 4/27/2017 13:32:27 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0459**	**28.02**	**2.013**	**2.074**	**.0526**	**26.57**	**.0514**	**.5090**	**.2098**
Stddev	.0002	.12	.004	.006	.0001	.06	.0002	.0011	.0006
%RSD	.4697	.4378	.1768	.2755	.2736	.2433	.3374	.2135	.2739
#1	.0459	28.13	2.014	2.078	.0527	26.64	.0512	.5086	.2100
#2	.0458	27.89	2.009	2.067	.0524	26.54	.0516	.5081	.2092
#3	.0462	28.03	2.016	2.076	.0527	26.52	.0513	.5102	.2103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2554**	**27.41**	**26.27**	**25.74**	**.5287**	**.5318**	**26.00**	**.5219**	**.4921**
Stddev	.0010	.09	.07	.09	.0002	.0006	.04	.0004	.0024
%RSD	.3965	.3415	.2654	.3482	.0411	.1169	.1706	.0695	.4837
#1	.2551	27.52	26.32	25.84	.5290	.5313	26.04	.5223	.4921
#2	.2546	27.36	26.19	25.69	.5286	.5325	25.95	.5216	.4897
#3	.2565	27.36	26.29	25.68	.5286	.5318	26.02	.5219	.4944
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.5130**	**1.973**	**.0093**	**.5248**	**.5295**	**.5269**	**1.954**	**.5034**	**.5105**
Stddev	.0017	.005	.0002	.0017	.0017	.0008	.004	.0017	.0013
%RSD	.3284	.2369	2.623	.3234	.3182	.1446	.2246	.3304	.2511
#1	.5131	1.970	.0093	.5261	.5305	.5261	1.958	.5020	.5116
#2	.5113	1.971	.0096	.5254	.5276	.5272	1.949	.5031	.5091
#3	.5146	1.979	.0091	.5229	.5305	.5275	1.955	.5052	.5107
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP32057-B1 Acquired: 4/27/2017 13:32:27 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1532.1**	**4205.4**	**31884.**	**6885.7**
Stddev	3.2	2.7	139.	12.7
%RSD	.20980	.06337	.43609	.18516
#1	1532.7	4207.2	31879.	6874.8
#2	1535.0	4206.6	32025.	6882.6
#3	1528.6	4202.3	31747.	6899.7

Zoom In Zoom Out

Sample Name: FA43358-1 Acquired: 4/27/2017 13:36:41 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**.0164**	**.0101**	**.2235**	**.0000**	**128.1**	**.0000**	**-.0001**	**.0006**
Stddev	.0003	.0080	.0009	.0004	.000	.4	.000	.0001	.0003
%RSD	84.21	48.59	8.610	.1822	33.30	.3013	98.63	198.0	45.65
#1	-.0001	.0255	.0100	.2239	-.0001	128.2	.0000	-.0002	.0003
#2	-.0004	.0104	.0111	.2234	.0000	128.5	.0000	.0001	.0008
#3	-.0007	.0134	.0093	.2231	-.0001	127.7	-.0001	-.0001	.0007

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**-.0003**	**2.715**	**4.257**	**65.63**	**.0888**	**.0159**	**42.43**	**.0020**	**-.0011**
Stddev	.0001	.013	.027	.26	.0007	.0001	.08	.0001	.0003
%RSD	38.47	.4651	.6243	.3985	.7435	.5784	.1892	4.271	31.60
#1	-.0002	2.727	4.252	65.86	.0886	.0158	42.45	.0020	-.0011
#2	-.0002	2.717	4.285	65.70	.0895	.0159	42.49	.0021	-.0014
#3	-.0004	2.702	4.232	65.35	.0882	.0159	42.34	.0019	-.0007

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0003**	**.0039**	**5.203**	**.0003**	**.6518**	**.0010**	**.0004**	**.0000**	**.0046**
Stddev	.0011	.0004	.004	.0004	.0012	.0001	.0011	.000	.0000
%RSD	330.6	10.79	.0691	126.1	.1889	5.092	307.9	4053.	.7496
#1	.0016	.0038	5.204	.0006	.6532	.0011	.0007	.0000	.0046
#2	-.0003	.0044	5.198	-.0002	.6514	.0010	.0013	-.0002	.0046
#3	-.0003	.0036	5.205	.0006	.6508	.0010	-.0009	.0002	.0046

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1517.4**	**4110.4**	**31551.**	**6771.0**
Stddev	2.1	3.5	145.	66.0
%RSD	.14162	.08467	.45839	.97426
#1	1519.8	4111.4	31389.	6772.7
#2	1515.6	4106.5	31667.	6704.2
#3	1516.8	4113.2	31596.	6836.1

Zoom In Zoom Out

Sample Name: MP32057-D1 Acquired: 4/27/2017 13:41:08 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**.0214**	**.0093**	**.2250**	**-.0001**	**129.3**	**-.0001**	**.0000**	**.0005**
Stddev	.0002	.0056	.0003	.0005	.0000	.1	.0000	.000	.0004
%RSD	143.3	26.22	2.871	.2375	22.95	.0517	27.08	226.5	71.16
#1	-.0003	.0235	.0093	.2245	-.0001	129.3	-.0001	-.0001	.0009
#2	-.0001	.0256	.0096	.2250	-.0001	129.4	-.0001	.0000	.0002
#3	.0000	.0150	.0091	.2255	-.0001	129.2	-.0001	.0000	.0005

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**-.0002**	**2.733**	**4.289**	**66.10**	**.0893**	**.0156**	**42.75**	**.0022**	**-.0008**
Stddev	.0000	.013	.012	.33	.0002	.0003	.04	.0001	.0007
%RSD	16.93	.4785	.2767	.5059	.1809	1.697	.0881	2.518	87.96
#1	-.0002	2.742	4.288	66.30	.0892	.0155	42.76	.0023	-.0002
#2	-.0002	2.739	4.301	66.29	.0895	.0155	42.71	.0022	-.0006
#3	-.0002	2.718	4.277	65.72	.0892	.0159	42.78	.0022	-.0015

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0004**	**.0027**	**5.247**	**.0004**	**.6586**	**.0011**	**.0010**	**.0000**	**.0047**
Stddev	.0002	.0006	.009	.0003	.0013	.0000	.0003	.000	.0001
%RSD	61.57	21.15	.1767	66.72	.2023	2.876	27.46	707.1	1.709
#1	.0006	.0025	5.247	.0007	.6597	.0011	.0013	.0000	.0046
#2	.0005	.0034	5.238	.0005	.6571	.0011	.0011	.0001	.0047
#3	.0001	.0023	5.257	.0001	.6590	.0011	.0007	-.0001	.0048

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1517.0**	**4098.6**	**31530.**	**6750.8**
Stddev	9.2	10.1	83.	48.2
%RSD	.60447	.24728	.26235	.71461
#1	1506.5	4093.1	31451.	6730.7
#2	1523.5	4110.3	31616.	6715.9
#3	1521.0	4092.4	31523.	6805.8

Zoom In Zoom Out

Sample Name: MP32057-SD1 Acquired: 4/27/2017 13:45:36 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0018**	**.0015**	**.0114**	**.2231**	**-.0001**	**131.3**	**-.0001**	**-.0006**	**.0011**
Stddev	.0034	.0205	.0025	.0014	.0001	.3	.0001	.0006	.0014
%RSD	189.1	1399.	21.55	.6109	85.67	.2351	77.23	99.88	121.4
#1	-.0046	-.0204	.0090	.2216	.0000	131.6	-.0002	-.0005	.0025
#2	.0020	.0046	.0113	.2236	-.0001	131.0	.0000	.0000	.0011
#3	-.0028	.0202	.0140	.2242	-.0001	131.3	-.0001	-.0011	-.0002

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0012**	**2.777**	**4.253**	**66.16**	**.0913**	**.0148**	**42.63**	**.0026**	**-.0011**
Stddev	.0011	.012	.054	.12	.0002	.0004	.07	.0007	.0021
%RSD	92.70	.4323	1.278	.1848	.1939	2.538	.1642	28.46	194.3
#1	.0007	2.784	4.282	66.25	.0912	.0145	42.66	.0017	-.0033
#2	.0004	2.763	4.287	66.02	.0911	.0147	42.68	.0029	.0008
#3	.0024	2.782	4.190	66.20	.0915	.0153	42.55	.0031	-.0007

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0045**	**.0039**	**5.180**	**-.0006**	**.6613**	**.0048**	**.0033**	**-.0007**	**.0300**
Stddev	.0010	.0060	.005	.0023	.0020	.0008	.0080	.0014	.0003
%RSD	22.19	153.8	.0981	369.7	.3009	16.07	243.3	204.7	.9075
#1	.0037	.0106	5.183	.0016	.6615	.0040	.0079	-.0019	.0302
#2	.0043	-.0010	5.174	-.0006	.6631	.0049	.0079	-.0011	.0297
#3	.0056	.0022	5.182	-.0029	.6591	.0055	-.0059	.0009	.0301

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1584.1**	**4260.6**	**31994.**	**6928.6**
Stddev	1.8	5.6	57.	46.9
%RSD	.11485	.13147	.17847	.67737
#1	1584.0	4259.4	32003.	6890.7
#2	1585.9	4266.7	31934.	6981.1
#3	1582.3	4255.7	32047.	6914.0

Zoom In Zoom Out

Sample Name: MP32057-PS1 Acquired: 4/27/2017 13:50:03 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0475**	**2.622**	**.1180**	**.4832**	**.0526**	**131.8**	**.0515**	**.0507**	**.0524**
Stddev	.0002	.002	.0013	.0001	.0002	.3	.0001	.0003	.0002
%RSD	.4721	.0707	1.076	.0108	.4602	.2064	.1599	.6025	.3184
#1	.0476	2.620	.1166	.4832	.0524	131.5	.0515	.0505	.0522
#2	.0477	2.623	.1183	.4832	.0527	131.9	.0514	.0505	.0524
#3	.0473	2.623	.1191	.4831	.0528	132.0	.0515	.0510	.0525

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1039**	**5.814**	**14.66**	**69.04**	**.1409**	**.1236**	**52.08**	**.1044**	**.0472**
Stddev	.0007	.009	.03	.05	.0002	.0001	.06	.0003	.0009
%RSD	.6805	.1548	.2157	.0795	.1738	.0799	.1198	.2854	1.952
#1	.1036	5.805	14.65	69.09	.1408	.1237	52.02	.1045	.0469
#2	.1047	5.823	14.70	68.98	.1411	.1235	52.14	.1040	.0464
#3	.1034	5.813	14.64	69.05	.1406	.1236	52.09	.1046	.0482

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1109**	**.1013**	**5.189**	**.0504**	**.6948**	**.1062**	**.0985**	**.0513**	**.2645**
Stddev	.0005	.0022	.001	.0004	.0014	.0002	.0010	.0001	.0005
%RSD	.4884	2.169	.0188	.7036	.1960	.2111	1.058	.2275	.1799
#1	.1111	.1028	5.190	.0506	.6941	.1060	.0982	.0514	.2641
#2	.1103	.0988	5.190	.0506	.6964	.1065	.0996	.0512	.2644
#3	.1113	.1023	5.188	.0500	.6939	.1062	.0976	.0514	.2650

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1501.7**	**4077.1**	**31539.**	**6764.2**
Stddev	.5	4.7	126.	23.6
%RSD	.03126	.11515	.39819	.34886
#1	1501.8	4072.7	31446.	6739.7
#2	1502.1	4076.4	31488.	6766.2
#3	1501.2	4082.0	31682.	6786.8

Zoom In Zoom Out

Sample Name: MP32057-S1 Acquired: 4/27/2017 13:54:22 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0452**	**26.88**	**1.996**	**2.184**	**.0505**	**147.2**	**.0490**	**.4823**	**.1986**
Stddev	.0003	.10	.002	.006	.0001	.4	.0002	.0001	.0007
%RSD	.6523	.3574	.1142	.2568	.2943	.2844	.3291	.0305	.3483
#1	.0452	26.92	1.997	2.178	.0504	147.6	.0489	.4824	.1994
#2	.0455	26.96	1.993	2.187	.0506	146.9	.0492	.4822	.1980
#3	.0450	26.77	1.997	2.188	.0504	146.9	.0489	.4821	.1983

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2514**	**28.35**	**29.70**	**86.13**	**.5920**	**.5251**	**65.31**	**.4997**	**.4731**
Stddev	.0010	.12	.06	.51	.0012	.0004	.05	.0012	.0001
%RSD	.3836	.4223	.1952	.5948	.2043	.0742	.0832	.2376	.0146
#1	.2510	28.39	29.76	86.23	.5909	.5247	65.26	.5010	.4731
#2	.2525	28.44	29.70	86.59	.5933	.5251	65.37	.4994	.4731
#3	.2507	28.21	29.65	85.58	.5919	.5255	65.30	.4987	.4730

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.5056**	**1.940**	**5.094**	**.4998**	**1.133**	**.5090**	**1.900**	**.4868**	**.4873**
Stddev	.0026	.009	.003	.0009	.002	.0019	.008	.0016	.0016
%RSD	.5217	.4919	.0665	.1864	.1399	.3703	.4429	.3256	.3320
#1	.5086	1.939	5.097	.4995	1.133	.5086	1.893	.4853	.4884
#2	.5043	1.931	5.091	.4989	1.135	.5111	1.897	.4884	.4880
#3	.5038	1.950	5.093	.5008	1.132	.5074	1.909	.4867	.4854

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1473.6**	**4079.4**	**31172.**	**6821.3**
Stddev	3.0	7.2	158.	21.2
%RSD	.20230	.17559	.50720	.31063
#1	1476.9	4078.2	31205.	6812.2
#2	1471.0	4072.8	30999.	6806.2
#3	1473.1	4087.0	31310.	6845.5

Zoom In Zoom Out

Sample Name: MP32057-S2 Acquired: 4/27/2017 13:58:38 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0471**	**28.19**	**2.069**	**2.279**	**.0527**	**151.8**	**.0508**	**.5008**	**.2074**
Stddev	.0007	.05	.003	.003	.0001	1.2	.0002	.0007	.0012
%RSD	1.570	.1869	.1659	.1477	.2552	.8224	.3883	.1468	.5764
#1	.0479	28.24	2.068	2.280	.0527	152.6	.0506	.5003	.2060
#2	.0464	28.13	2.066	2.276	.0526	152.4	.0508	.5005	.2081
#3	.0470	28.20	2.072	2.282	.0529	150.3	.0510	.5017	.2080

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2620**	**29.64**	**30.99**	**90.48**	**.6148**	**.5442**	**67.94**	**.5178**	**.4923**
Stddev	.0012	.01	.03	.64	.0011	.0018	.15	.0006	.0012
%RSD	.4429	.0453	.1057	.7111	.1724	.3280	.2143	.1086	.2527
#1	.2610	29.66	30.98	91.21	.6138	.5424	67.79	.5176	.4924
#2	.2633	29.63	31.03	90.24	.6159	.5442	67.95	.5175	.4934
#3	.2617	29.63	30.97	89.99	.6147	.5459	68.08	.5185	.4910

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.5249**	**2.010**	**5.302**	**.5176**	**1.177**	**.5278**	**1.979**	**.5046**	**.5035**
Stddev	.0005	.007	.015	.0017	.002	.0020	.005	.0017	.0011
%RSD	.1037	.3438	.2901	.3289	.1336	.3838	.2633	.3408	.2162
#1	.5254	2.002	5.293	.5156	1.176	.5255	1.973	.5026	.5030
#2	.5243	2.016	5.293	.5189	1.177	.5289	1.984	.5059	.5027
#3	.5250	2.011	5.320	.5182	1.179	.5291	1.979	.5052	.5047

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1465.8**	**4069.4**	**31158.**	**6821.6**
Stddev	3.5	7.2	150.	62.8
%RSD	.24144	.17645	.47988	.92009
#1	1464.9	4069.9	31289.	6753.6
#2	1462.8	4076.4	30995.	6833.8
#3	1469.7	4062.0	31189.	6877.3

Zoom In Zoom Out

Sample Name: FA43285-4 Acquired: 4/27/2017 14:02:59 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0002**	**3.614**	**.0215**	**.0743**	**-.0002**	F **3598.**	**-.0003**	**.0037**	**-.0018**
Stddev	.0015	.069	.0015	.0014	.0001	35.	.0002	.0004	.0004
%RSD	631.1	1.904	6.921	1.853	56.85	.9598	52.97	9.689	20.36
#1	.0004	3.674	.0209	.0727	-.0001	3588.	-.0002	.0033	-.0021
#2	-.0014	3.629	.0205	.0749	-.0003	3636.	-.0005	.0040	-.0019
#3	.0017	3.539	.0232	.0753	-.0003	3569.	-.0002	.0037	-.0014

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**-.0004**	**2.083**	**180.1**	**671.7**	**.2687**	**.3410**	F **6461.**	**.0035**	**-.0136**
Stddev	.0022	.013	.4	1.9	.0014	.0003	149.	.0005	.0030
%RSD	584.4	.6206	.2423	.2887	.5255	.0931	2.300	14.41	21.90
#1	-.0008	2.097	179.9	671.0	.2691	.3407	6348.	.0030	-.0147
#2	-.0023	2.079	179.8	673.9	.2699	.3413	6629.	.0040	-.0158
#3	.0020	2.072	180.6	670.3	.2672	.3409	6406.	.0035	-.0102

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0006**	**.1597**	**17.16**	**-.0017**	F **58.03**	**.0694**	**.0025**	**.0442**	**.0316**
Stddev	.0018	.0018	.01	.0010	.40	.0088	.0034	.0010	.0003
%RSD	286.1	1.150	.0347	61.07	.6923	12.66	131.7	2.241	1.078
#1	.0005	.1611	17.16	-.0012	58.19	.0794	.0059	.0438	.0312
#2	.0003	.1604	17.15	-.0010	58.32	.0629	.0026	.0434	.0319
#3	-.0027	.1576	17.15	-.0028	57.57	.0659	-.0008	.0453	.0316

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1071.7**	**3169.3**	**25560.**	**5942.4**
Stddev	1.2	3.8	9.	24.0
%RSD	.11180	.12088	.03598	.40337
#1	1073.0	3164.9	25571.	5948.0
#2	1071.5	3171.8	25554.	5916.1
#3	1070.6	3171.2	25556.	5963.1

Zoom In Zoom Out

Sample Name: FA43334-3 Acquired: 4/27/2017 14:07:52 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**.0131**	**.0008**	**.0190**	**-.0001**	**1.637**	**.0000**	**.0024**	**-.0002**
Stddev	.0003	.0086	.0007	.0001	.0001	.005	.000	.0001	.0001
%RSD	142.1	65.73	85.20	.4946	105.6	.2913	86.05	3.811	67.98
#1	-.0003	.0067	.0007	.0191	-.0001	1.640	.0000	.0024	.0000
#2	.0001	.0229	.0016	.0190	-.0001	1.632	-.0001	.0024	-.0002
#3	-.0004	.0097	.0002	.0189	.0000	1.640	.0000	.0022	-.0002

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0004**	**4.396**	**.1980**	**.6280**	**.1701**	**.0001**	**5.512**	**.0002**	**-.0012**
Stddev	.0001	.012	.0033	.0136	.0004	.0002	.012	.0001	.0008
%RSD	36.51	.2669	1.689	2.164	.2645	140.4	.2211	32.73	62.71
#1	.0005	4.409	.1955	.6237	.1704	.0002	5.511	.0002	-.0004
#2	.0004	4.391	.1969	.6170	.1696	.0002	5.501	.0002	-.0013
#3	.0002	4.387	.2018	.6432	.1702	-.0001	5.525	.0003	-.0019

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0006**	**.0012**	**1.464**	**.0002**	**.0084**	**.0003**	**.0022**	**.0001**	**.0074**
Stddev	.0012	.0011	.002	.0004	.0001	.0001	.0006	.0002	.0001
%RSD	206.5	84.46	.1660	201.3	1.014	22.44	28.80	169.8	1.364
#1	-.0002	.0015	1.461	-.0001	.0083	.0003	.0017	.0001	.0074
#2	-.0020	.0022	1.465	.0006	.0085	.0002	.0019	-.0001	.0075
#3	.0004	.0001	1.466	.0001	.0085	.0004	.0029	.0004	.0073

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1600.0**	**4294.3**	**32040.**	**6978.4**
Stddev	3.5	4.9	52.	14.2
%RSD	.21605	.11452	.16115	.20301
#1	1598.2	4295.5	31987.	6994.7
#2	1604.0	4288.9	32044.	6969.3
#3	1597.9	4298.5	32090.	6971.2

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 14:12:20 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2421**	**39.25**	**2.008**	**1.958**	**2.016**	**40.11**	**2.023**	**1.996**	**2.009**
Stddev	.0008	.09	.003	.005	.004	.02	.002	.001	.002
%RSD	.3392	.2177	.1461	.2433	.2013	.0534	.1186	.0519	.1205
#1	.2428	39.16	2.005	1.953	2.013	40.12	2.023	1.996	2.011
#2	.2412	39.33	2.010	1.960	2.020	40.13	2.026	1.997	2.009
#3	.2422	39.26	2.008	1.962	2.014	40.09	2.021	1.995	2.007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.955**	**40.21**	**39.86**	**39.27**	**2.034**	**1.966**	**38.21**	**2.028**	**1.965**
Stddev	.007	.09	.09	.17	.001	.002	.06	.002	.008
%RSD	.3817	.2286	.2132	.4237	.0709	.1014	.1698	.1169	.4280
#1	1.963	40.14	39.77	39.24	2.035	1.964	38.14	2.030	1.969
#2	1.949	40.32	39.93	39.44	2.033	1.967	38.26	2.030	1.971
#3	1.954	40.19	39.88	39.12	2.033	1.968	38.25	2.026	1.955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.008**	**2.004**	**1.893**	**1.989**	**2.039**	**2.043**	**1.986**	**2.010**	**2.041**
Stddev	.004	.004	.001	.001	.004	.007	.003	.002	.004
%RSD	.1839	.2110	.0652	.0336	.1884	.3597	.1558	.1066	.2000
#1	2.005	1.999	1.893	1.989	2.037	2.051	1.989	2.013	2.042
#2	2.013	2.004	1.895	1.989	2.044	2.040	1.983	2.009	2.044
#3	2.007	2.008	1.892	1.990	2.037	2.037	1.985	2.009	2.036
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 14:12:20 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1480.8**	**4118.0**	**31446.**	**6776.0**
Stddev	4.1	7.0	80.	11.0
%RSD	.27606	.17039	.25510	.16277
#1	1478.6	4118.8	31394.	6772.4
#2	1478.2	4110.6	31538.	6767.3
#3	1485.5	4124.5	31406.	6788.4

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 14:16:32 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0085**	**-.0001**	**.0002**	**.0003**	**.0073**	**.0002**	**.0001**	**.0004**
Stddev	.0003	.0041	.0006	.0002	.0000	.0023	.0000	.0001	.0002
%RSD	179.4	48.02	434.5	112.9	14.17	31.42	25.37	86.28	61.81
#1	-.0004	.0128	.0005	.0004	.0004	.0098	.0002	.0000	.0001
#2	.0001	.0083	-.0007	.0000	.0003	.0069	.0001	.0003	.0006
#3	-.0002	.0046	-.0003	.0001	.0003	.0052	.0001	.0001	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0135**	**.0370**	**.0072**	**.0003**	F **.0026**	**.1847**	**.0002**	**.0000**
Stddev	.0001	.0027	.0070	.0089	.0000	.0006	.0145	.0001	.0005
%RSD	57.55	20.02	19.00	123.9	1.443	22.02	7.853	20.77	2510.
#1	.0004	.0162	.0425	-.0006	.0003	.0033	.2001	.0002	.0002
#2	.0001	.0134	.0394	.0053	.0002	.0023	.1826	.0002	-.0005
#3	.0002	.0108	.0291	.0168	.0003	.0022	.1714	.0003	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	F **.0022**	**.0003**	**.0002**	**.0004**	**.0008**	**.0011**	**.0002**	**.0002**
Stddev	.0005	.0011	.0003	.0001	.0001	.0001	.0016	.0002	.0001
%RSD	484.9	50.51	95.51	75.19	27.05	13.19	149.5	73.93	51.84
#1	-.0004	.0009	.0000	.0003	.0005	.0008	.0001	.0004	.0003
#2	.0003	.0027	.0006	.0000	.0004	.0008	.0002	.0001	.0001
#3	.0005	.0030	.0004	.0002	.0003	.0007	.0030	.0002	.0001
Check ?	Chk Pass	Chk Fail	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		.0020							
Low Limit		-.0020							

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 14:16:32 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1582.4**	**4264.5**	**31867.**	**6898.3**
Stddev	2.7	6.9	34.	20.9
%RSD	.16912	.16137	.10730	.30248
#1	1579.9	4262.2	31839.	6921.3
#2	1582.0	4259.1	31905.	6880.5
#3	1585.2	4272.3	31857.	6893.1

Zoom In Zoom Out

Sample Name: FA43334-5 Acquired: 4/27/2017 14:21:03 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0005**	**.0332**	**.0056**	**.1185**	**.0001**	**17.90**	**-.0002**	**.0045**	**.0001**
Stddev	.0003	.0056	.0002	.0004	.0000	.07	.0000	.0000	.0003
%RSD	50.51	16.92	4.444	.3364	49.10	.4139	18.71	.8683	200.2
#1	-.0007	.0385	.0056	.1181	.0001	17.84	-.0002	.0045	.0001
#2	-.0002	.0337	.0059	.1188	.0001	17.88	-.0002	.0045	-.0001
#3	-.0006	.0273	.0054	.1187	.0001	17.98	-.0002	.0045	.0005

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0007**	**26.89**	**.6495**	**6.453**	**.9075**	**.0013**	**18.21**	**.0023**	**-.0039**
Stddev	.0002	.14	.0057	.038	.0018	.0002	.03	.0001	.0007
%RSD	22.71	.5085	.8774	.5832	.1949	17.80	.1726	5.940	17.16
#1	.0006	26.84	.6436	6.436	.9057	.0013	18.20	.0022	-.0044
#2	.0008	26.78	.6499	6.426	.9092	.0015	18.18	.0024	-.0041
#3	.0005	27.04	.6550	6.496	.9076	.0011	18.24	.0022	-.0031

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0002**	**-.0008**	**7.292**	**.0004**	**.0843**	**.0016**	**.0007**	**.0004**	**.0052**
Stddev	.0011	.0010	.020	.0002	.0004	.0001	.0003	.0002	.0000
%RSD	558.6	130.6	.2770	44.24	.5005	6.130	41.32	52.17	.4150
#1	-.0009	.0001	7.283	.0005	.0844	.0015	.0005	.0002	.0052
#2	.0011	-.0005	7.278	.0002	.0839	.0015	.0011	.0005	.0053
#3	-.0008	-.0020	7.315	.0006	.0847	.0017	.0006	.0006	.0052

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1572.4**	**4220.3**	**31937.**	**6981.4**
Stddev	2.2	5.5	26.	52.8
%RSD	.14230	.13058	.08230	.75566
#1	1574.9	4224.8	31968.	7005.3
#2	1570.6	4222.0	31923.	7017.9
#3	1571.6	4214.2	31921.	6920.9

Zoom In Zoom Out

Sample Name: FA43334-6 Acquired: 4/27/2017 14:25:29 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**4.487**	**-.0009**	**.0763**	**.0003**	**3.737**	**.0002**	**.0075**	**.0077**
Stddev	.0001	.003	.0004	.0001	.0000	.017	.0000	.0001	.0002
%RSD	75.83	.0562	37.88	.1963	8.144	.4644	20.64	1.047	2.561
#1	-.0003	4.484	-.0006	.0762	.0004	3.731	.0002	.0074	.0077
#2	-.0001	4.488	-.0013	.0765	.0003	3.757	.0002	.0075	.0078
#3	-.0001	4.489	-.0009	.0763	.0003	3.724	.0001	.0075	.0075

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0026**	**2.466**	**1.208**	**2.750**	**.2127**	**.0004**	**38.50**	**.0253**	**-.0003**
Stddev	.0002	.007	.004	.025	.0003	.0001	.12	.0001	.0005
%RSD	9.620	.2965	.3541	.9212	.1536	31.91	.2998	.2567	172.5
#1	.0028	2.458	1.210	2.726	.2130	.0003	38.37	.0252	-.0007
#2	.0023	2.472	1.203	2.776	.2126	.0005	38.58	.0254	.0003
#3	.0026	2.467	1.210	2.749	.2124	.0004	38.56	.0253	-.0005

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0001**	**.0015**	**12.64**	**.0002**	**.0288**	**.1229**	**-.0004**	**.0078**	**.0292**
Stddev	.0009	.0009	.01	.0005	.0005	.0069	.0011	.0001	.0001
%RSD	633.2	56.70	.1115	255.7	1.602	5.633	257.9	1.632	.4326
#1	.0002	.0017	12.63	.0007	.0284	.1221	.0009	.0078	.0291
#2	-.0008	.0024	12.66	-.0002	.0287	.1302	-.0011	.0077	.0294
#3	.0010	.0006	12.63	.0001	.0293	.1165	-.0011	.0079	.0291

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1586.9**	**4268.4**	**32136.**	**6941.3**
Stddev	1.3	3.1	77.	20.1
%RSD	.08094	.07355	.23924	.28973
#1	1588.2	4271.4	32133.	6957.7
#2	1585.7	4265.1	32214.	6918.8
#3	1586.7	4268.7	32061.	6947.2

Zoom In Zoom Out

Sample Name: FA43334-3F Acquired: 4/27/2017 14:29:54 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**.0092**	**.0024**	**.0896**	**.0000**	**8.052**	**-.0002**	**.0119**	**.0002**
Stddev	.0003	.0026	.0003	.0002	.000	.032	.0001	.0001	.0002
%RSD	71.35	28.41	11.09	.1738	110.9	.3984	32.07	.7292	96.08
#1	-.0007	.0104	.0025	.0896	-.0001	8.026	-.0003	.0119	.0005
#2	-.0002	.0062	.0021	.0894	-.0001	8.041	-.0002	.0118	.0002
#3	-.0002	.0111	.0026	.0898	.0000	8.088	-.0002	.0120	.0000

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0001**	**20.20**	**.3471**	**3.096**	**.8452**	**.0006**	**25.13**	**.0009**	**-.0035**
Stddev	.0005	.02	.0156	.046	.0020	.0002	.02	.0002	.0007
%RSD	417.2	.0785	4.508	1.499	.2406	31.73	.0933	16.63	19.69
#1	.0006	20.21	.3483	3.078	.8475	.0008	25.11	.0009	-.0027
#2	-.0003	20.18	.3309	3.062	.8435	.0004	25.14	.0010	-.0041
#3	.0001	20.21	.3621	3.149	.8446	.0005	25.15	.0007	-.0036

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0005**	**.0001**	**7.106**	**.0004**	**.0399**	**.0007**	**.0005**	**.0001**	**.0081**
Stddev	.0006	.0011	.029	.0002	.0001	.0001	.0021	.0002	.0001
%RSD	114.9	971.3	.4131	60.55	.2030	17.62	403.8	161.8	1.354
#1	-.0001	-.0002	7.076	.0005	.0400	.0008	-.0010	.0000	.0080
#2	.0007	.0013	7.106	.0001	.0399	.0006	.0029	.0000	.0081
#3	.0009	-.0008	7.135	.0005	.0399	.0006	-.0004	.0003	.0082

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1588.1**	**4276.8**	**32438.**	**6969.6**
Stddev	2.3	10.9	31.	52.5
%RSD	.14790	.25462	.09435	.75269
#1	1590.2	4287.5	32446.	7027.5
#2	1585.5	4277.0	32463.	6955.8
#3	1588.5	4265.8	32404.	6925.4

Zoom In Zoom Out

Sample Name: FA43334-5F Acquired: 4/27/2017 14:34:20 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0003**	**.0072**	**.0066**	**.1282**	**.0000**	**18.99**	**-.0003**	**.0048**	**.0003**
Stddev	.0003	.0042	.0008	.0009	.000	.05	.0001	.0001	.0005
%RSD	98.92	58.98	11.82	.7315	63.42	.2706	34.72	2.119	206.6
#1	-.0001	.0119	.0060	.1287	.0000	19.01	-.0003	.0048	-.0002
#2	-.0002	.0062	.0075	.1271	.0000	18.93	-.0004	.0049	.0002
#3	-.0006	.0036	.0064	.1288	-.0001	19.03	-.0002	.0047	.0008

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0003**	**29.72**	**.6556**	**6.688**	**.8419**	**.0006**	**19.16**	**.0029**	**-.0043**
Stddev	.0002	.08	.0245	.016	.0005	.0002	.07	.0001	.0005
%RSD	57.92	.2551	3.730	.2342	.0599	24.51	.3738	2.184	12.26
#1	.0001	29.77	.6820	6.695	.8424	.0006	19.19	.0030	-.0049
#2	.0003	29.63	.6336	6.671	.8414	.0008	19.08	.0028	-.0040
#3	.0005	29.75	.6512	6.700	.8420	.0005	19.21	.0030	-.0039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0002**	**-.0012**	**7.352**	**.0004**	**.0884**	**.0008**	**-.0002**	**.0004**	**.0058**
Stddev	.0007	.0014	.003	.0002	.0005	.0002	.0009	.0001	.0001
%RSD	397.6	116.3	.0354	35.80	.6207	19.12	438.7	28.09	1.636
#1	.0005	-.0010	7.349	.0005	.0886	.0010	-.0007	.0004	.0057
#2	-.0006	-.0027	7.351	.0003	.0878	.0007	.0008	.0004	.0059
#3	.0007	.0001	7.354	.0005	.0888	.0008	-.0007	.0003	.0058

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1566.8**	**4245.0**	**32073.**	**6967.3**
Stddev	3.8	5.8	56.	23.2
%RSD	.24520	.13689	.17406	.33355
#1	1562.5	4238.6	32009.	6961.9
#2	1568.2	4249.9	32097.	6947.2
#3	1569.8	4246.6	32113.	6992.7

Zoom In Zoom Out

Sample Name: FA43334-6F Acquired: 4/27/2017 14:38:46 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**1.732**	**-.0017**	**.0663**	**.0002**	**3.874**	**.0002**	**.0075**	**.0032**
Stddev	.0002	.022	.0010	.0002	.0001	.008	.0000	.0001	.0003
%RSD	39.07	1.280	60.73	.2765	24.53	.1950	15.60	1.659	8.598
#1	-.0003	1.719	-.0010	.0665	.0002	3.879	.0001	.0074	.0034
#2	-.0004	1.720	-.0011	.0661	.0003	3.878	.0002	.0073	.0033
#3	-.0006	1.758	-.0028	.0662	.0002	3.865	.0002	.0076	.0029

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0033**	**1.192**	**.6510**	**2.691**	**.2167**	**.0002**	**40.52**	**.0251**	**-.0001**
Stddev	.0001	.005	.0181	.041	.0002	.0004	.12	.0003	.0004
%RSD	1.876	.4253	2.775	1.530	.1033	215.6	.2855	1.306	244.7
#1	.0033	1.197	.6579	2.717	.2165	-.0002	40.62	.0248	-.0004
#2	.0033	1.189	.6646	2.713	.2167	.0001	40.39	.0251	.0002
#3	.0034	1.188	.6305	2.643	.2170	.0006	40.55	.0254	-.0002

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0003**	**.0015**	**10.72**	**.0003**	**.0282**	**.0425**	**-.0006**	**.0033**	**.0291**
Stddev	.0008	.0011	.02	.0001	.0001	.0044	.0012	.0001	.0001
%RSD	247.6	72.33	.2025	37.31	.4794	10.37	211.5	4.179	.3176
#1	-.0006	.0010	10.74	.0003	.0282	.0386	.0002	.0033	.0290
#2	.0009	.0027	10.70	.0003	.0282	.0416	-.0020	.0032	.0290
#3	.0005	.0007	10.73	.0002	.0284	.0473	.0001	.0034	.0292

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1587.4**	**4275.9**	**32118.**	**6957.1**
Stddev	3.3	4.7	114.	41.1
%RSD	.20803	.11039	.35397	.59137
#1	1584.8	4275.7	32199.	6910.2
#2	1591.1	4280.7	32168.	6974.3
#3	1586.1	4271.3	31988.	6986.9

Zoom In Zoom Out

Sample Name: FA43359-1 Acquired: 4/27/2017 14:43:12 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0005**	**2.761**	**.0035**	**.1035**	**.0001**	**77.61**	**.0000**	**.0020**	**.0044**
Stddev	.0001	.026	.0006	.0004	.0000	.25	.0000	.0001	.0003
%RSD	19.18	.9582	16.43	.3751	11.03	.3168	471.1	4.959	7.778
#1	-.0006	2.754	.0032	.1039	.0001	77.58	.0000	.0019	.0041
#2	-.0005	2.739	.0042	.1036	.0000	77.37	.0000	.0020	.0047
#3	-.0004	2.790	.0031	.1031	.0001	77.86	.0000	.0020	.0043

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0105**	**5.199**	**9.425**	**19.37**	**.1325**	**.0050**	**5.607**	**.0068**	**.0054**
Stddev	.0003	.017	.022	.16	.0002	.0001	.009	.0001	.0005
%RSD	2.936	.3250	.2379	.8191	.1825	2.042	.1696	1.299	9.750
#1	.0107	5.180	9.441	19.30	.1328	.0051	5.615	.0067	.0060
#2	.0102	5.204	9.399	19.25	.1323	.0050	5.609	.0069	.0049
#3	.0106	5.213	9.435	19.55	.1325	.0049	5.596	.0067	.0053

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0013**	**.0038**	**5.062**	**.0005**	**1.164**	**.0767**	**-.0016**	**.0059**	**.1927**
Stddev	.0004	.0008	.019	.0002	.002	.0015	.0002	.0002	.0010
%RSD	30.91	21.44	.3842	29.55	.1596	1.959	15.68	2.668	.5092
#1	.0014	.0041	5.080	.0003	1.164	.0782	-.0014	.0058	.1917
#2	.0017	.0045	5.063	.0006	1.165	.0769	-.0018	.0058	.1936
#3	.0009	.0029	5.042	.0006	1.161	.0752	-.0014	.0060	.1929

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1555.9**	**4225.5**	**32040.**	**6942.9**
Stddev	1.0	7.7	33.	38.1
%RSD	.06366	.18181	.10409	.54820
#1	1554.9	4233.3	32005.	6934.0
#2	1556.9	4225.2	32071.	6984.6
#3	1555.9	4218.0	32044.	6910.0

Zoom In Zoom Out

Sample Name: FA43361-1 Acquired: 4/27/2017 14:47:36 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**.1448**	**.0064**	**.0121**	**-.0003**	**640.7**	**.0001**	**.0000**	**.0054**
Stddev	.0026	.0416	.0025	.0007	.0003	.5	.0000	.0011	.0013
%RSD	1618.	28.73	39.10	6.208	100.3	.0858	36.40	4663.	23.42
#1	-.0022	.1097	.0040	.0118	-.0006	640.0	.0001	-.0010	.0039
#2	-.0010	.1907	.0062	.0115	-.0003	641.0	.0001	-.0002	.0060
#3	.0027	.1339	.0090	.0129	.0000	640.9	.0001	.0012	.0062

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0013**	**.1382**	**20.42**	**106.9**	**.0099**	**.0968**	**F 3792.**	**.0009**	**-.0008**
Stddev	.0012	.0040	.19	.3	.0002	.0002	28.	.0013	.0017
%RSD	90.73	2.890	.9117	.2855	2.223	.2156	.7458	143.8	209.1
#1	.0001	.1364	20.28	107.2	.0099	.0969	3800.	.0002	-.0022
#2	.0013	.1353	20.34	106.6	.0101	.0966	3815.	.0024	-.0014
#3	.0026	.1427	20.63	106.9	.0097	.0969	3760.	.0001	.0011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0003**	**.0691**	**2.736**	**.0002**	**11.70**	**.0065**	**.0122**	**.0025**	**.0284**
Stddev	.0061	.0044	.008	.0023	.01	.0006	.0087	.0014	.0003
%RSD	2104.	6.311	.2888	1210.	.0930	8.872	71.19	55.39	.9233
#1	-.0015	.0687	2.737	-.0024	11.70	.0060	.0037	.0034	.0285
#2	.0071	.0649	2.728	.0016	11.68	.0065	.0210	.0009	.0281
#3	-.0047	.0736	2.744	.0014	11.70	.0071	.0117	.0032	.0285

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1419.3**	**3986.0**	**30795.**	**6595.6**
Stddev	2.5	10.1	27.	32.3
%RSD	.17813	.25246	.08915	.48951
#1	1419.7	3984.1	30793.	6584.6
#2	1421.5	3996.8	30823.	6570.2
#3	1416.5	3977.0	30769.	6631.9

Zoom In Zoom Out

Sample Name: FA43362-1 Acquired: 4/27/2017 14:52:13 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**1.705**	**.0019**	**.0936**	**.0000**	**105.4**	**.0000**	**.0005**	**.0027**
Stddev	.0004	.002	.0006	.0001	.000	.2	.000	.0001	.0000
%RSD	106.6	.1209	30.15	.0818	34.59	.2109	105.3	13.47	.7943
#1	-.0007	1.708	.0013	.0937	.0000	105.5	.0000	.0005	.0027
#2	-.0004	1.704	.0025	.0937	.0000	105.2	.0000	.0006	.0027
#3	.0000	1.704	.0020	.0936	.0000	105.6	.0000	.0005	.0027

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0039**	**2.075**	**4.345**	**30.80**	**.1507**	**.1396**	**F 122.5**	**.0016**	**.0001**
Stddev	.0004	.008	.025	.21	.0004	.0001	.3	.0002	.0002
%RSD	9.158	.3761	.5852	.6786	.2782	.0694	.2524	11.99	167.9
#1	.0041	2.080	4.318	30.83	.1503	.1395	122.7	.0016	.0003
#2	.0040	2.079	4.349	30.58	.1511	.1397	122.2	.0014	-.0001
#3	.0035	2.066	4.368	31.00	.1505	.1397	122.7	.0018	.0002

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0003**	**.0039**	**7.599**	**.0007**	**1.201**	**.1285**	**.0005**	**.0061**	**.0149**
Stddev	.0004	.0021	.018	.0007	.002	.0006	.0010	.0001	.0001
%RSD	143.6	54.58	.2403	97.53	.1824	.4527	204.9	2.273	.6263
#1	.0004	.0048	7.596	.0014	1.200	.1290	.0015	.0059	.0150
#2	-.0002	.0054	7.583	.0002	1.204	.1279	.0005	.0061	.0149
#3	.0006	.0015	7.619	.0004	1.199	.1286	-.0005	.0062	.0148

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1515.9**	**4117.6**	**31682.**	**6748.9**
Stddev	7.3	13.2	14.	40.9
%RSD	.48322	.32115	.04345	.60675
#1	1518.1	4107.1	31689.	6719.8
#2	1521.9	4132.5	31666.	6795.7
#3	1507.7	4113.4	31691.	6731.2

Zoom In Zoom Out

Sample Name: FA43362-2 Acquired: 4/27/2017 14:56:39 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0000**	**2.877**	**.0007**	**.0991**	**.0000**	**90.11**	**.0000**	**.0011**	**.0045**
Stddev	.000	.018	.0007	.0003	.0000	.35	.000	.0002	.0002
%RSD	347.4	.6304	98.10	.2603	137.9	.3898	203.9	14.44	3.518
#1	-.0002	2.860	.0002	.0991	.0000	89.81	.0000	.0012	.0046
#2	.0001	2.896	.0016	.0989	.0000	90.02	.0000	.0009	.0043
#3	-.0001	2.875	.0004	.0994	.0001	90.49	-.0001	.0010	.0046

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0033**	**3.765**	**3.183**	**24.03**	**.1861**	**.0536**	**F 81.88**	**.0021**	**-.0003**
Stddev	.0002	.019	.011	.14	.0003	.0002	.38	.0002	.0001
%RSD	6.042	.5154	.3398	.5924	.1825	.4136	.4677	8.171	24.01
#1	.0034	3.748	3.174	23.90	.1863	.0537	81.54	.0019	-.0002
#2	.0034	3.761	3.181	24.01	.1863	.0534	81.80	.0021	-.0003
#3	.0030	3.786	3.195	24.18	.1857	.0538	82.30	.0023	-.0003

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0006**	**.0025**	**11.81**	**.0005**	**.7453**	**.2332**	**.0000**	**.0073**	**.0129**
Stddev	.0007	.0035	.02	.0003	.0039	.0026	.001	.0001	.0001
%RSD	115.9	143.4	.1433	55.03	.5201	1.122	3093.	1.810	.5107
#1	-.0002	.0054	11.82	.0002	.7428	.2316	-.0003	.0072	.0129
#2	.0010	-.0014	11.79	.0008	.7432	.2318	-.0008	.0073	.0129
#3	.0010	.0034	11.82	.0005	.7497	.2362	.0010	.0075	.0128

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1534.4**	**4174.5**	**31930.**	**6778.5**
Stddev	3.4	7.7	116.	61.1
%RSD	.22090	.18360	.36196	.90065
#1	1535.9	4173.7	32053.	6824.2
#2	1536.9	4182.6	31824.	6802.1
#3	1530.6	4167.3	31911.	6709.1

Zoom In Zoom Out

Sample Name: FA43362-3 Acquired: 4/27/2017 15:01:04 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0003**	**.7638**	**.0063**	**.0763**	**.0000**	**121.8**	**.0000**	**.0004**	**.0016**
Stddev	.0001	.0114	.0009	.0004	.000	.5	.000	.0000	.0003
%RSD	55.00	1.497	13.74	.5669	171.0	.3722	257.5	7.246	16.31
#1	-.0003	.7562	.0053	.0759	-.0001	122.3	-.0001	.0005	.0014
#2	-.0004	.7770	.0067	.0763	.0000	121.4	-.0001	.0004	.0019
#3	-.0001	.7582	.0069	.0768	.0000	121.6	.0001	.0004	.0016

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0004**	**1.219**	**6.421**	**31.15**	**.2032**	**.0118**	**F 91.37**	**.0015**	**-.0001**
Stddev	.0000	.004	.007	.10	.0001	.0001	.18	.0001	.0003
%RSD	10.40	.2854	.1169	.3221	.0730	1.203	.2012	7.095	440.1
#1	.0005	1.222	6.426	31.24	.2032	.0117	91.54	.0014	-.0001
#2	.0004	1.215	6.412	31.04	.2030	.0116	91.17	.0016	-.0003
#3	.0004	1.221	6.425	31.16	.2033	.0119	91.38	.0016	.0002

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0014**	**.0033**	**6.842**	**.0003**	**.9707**	**.0642**	**.0009**	**.0024**	**.0042**
Stddev	.0002	.0006	.001	.0003	.0022	.0024	.0009	.0001	.0001
%RSD	11.27	19.44	.0177	90.29	.2305	3.757	97.04	2.390	1.421
#1	.0014	.0034	6.842	.0001	.9714	.0625	.0009	.0023	.0042
#2	.0012	.0039	6.844	.0002	.9682	.0670	.0018	.0024	.0042
#3	.0015	.0026	6.841	.0007	.9725	.0631	.0000	.0023	.0041

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1523.9**	**4124.5**	**31648.**	**6710.0**
Stddev	2.3	5.1	77.	27.7
%RSD	.14834	.12343	.24441	.41336
#1	1524.3	4125.3	31560.	6679.7
#2	1526.0	4119.0	31705.	6734.2
#3	1521.5	4129.1	31680.	6716.0

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 15:05:31 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2421	39.45	1.980	1.984	2.008	39.89	2.005	1.989	1.995
Stddev	.0003	.07	.002	.003	.006	.10	.002	.004	.004
%RSD	.1390	.1718	.1010	.1244	.2780	.2504	.1118	.1895	.1874
#1	.2424	39.38	1.979	1.983	2.008	39.91	2.002	1.986	1.998
#2	.2418	39.49	1.978	1.987	2.003	39.78	2.005	1.989	1.995
#3	.2420	39.50	1.982	1.983	2.014	39.98	2.007	1.994	1.991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.943	40.28	39.66	39.75	2.018	1.960	39.19	2.001	1.966
Stddev	.005	.14	.02	.23	.004	.008	.04	.003	.004
%RSD	.2515	.3486	.0552	.5690	.2125	.4002	.1028	.1585	.2063
#1	1.948	40.25	39.64	39.60	2.023	1.952	39.15	1.998	1.968
#2	1.942	40.16	39.65	39.64	2.018	1.959	39.19	2.000	1.968
#3	1.939	40.44	39.68	40.01	2.014	1.968	39.23	2.004	1.961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.983	1.984	1.868	1.990	2.026	2.006	1.971	1.987	2.010
Stddev	.006	.001	.003	.003	.002	.005	.003	.003	.003
%RSD	.2890	.0644	.1675	.1460	.0753	.2754	.1400	.1665	.1461
#1	1.977	1.982	1.869	1.987	2.024	2.008	1.973	1.991	2.007
#2	1.988	1.984	1.865	1.993	2.027	2.010	1.971	1.984	2.013
#3	1.983	1.984	1.871	1.991	2.026	2.000	1.967	1.986	2.010
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 15:05:31 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1491.0	4185.2	31878.	6785.1
Stddev	.8	5.8	97.	43.3
%RSD	.05621	.13789	.30308	.63816
#1	1490.0	4188.3	31768.	6812.9
#2	1491.2	4188.8	31913.	6807.2
#3	1491.7	4178.6	31952.	6735.2

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 15:09:41 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0015	.0001	-.0001	.0002	.0061	.0001	.0001	.0002
Stddev	.0001	.0052	.0009	.0001	.0001	.0029	.0000	.0000	.0001
%RSD	37.94	349.1	738.4	196.5	26.45	48.40	40.86	21.61	33.17
#1	-.0003	.0014	.0011	-.0002	.0003	.0080	.0001	.0001	.0002
#2	-.0002	.0016	.0001	.0000	.0002	.0075	.0001	.0001	.0001
#3	-.0001	-.0074	-.0008	.0000	.0002	.0027	.0000	.0000	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0127	.0017	-.0106	.0001	F .0024	.0735	.0002	-.0007
Stddev	.0001	.0024	.0175	.0155	.0000	.0006	.0051	.0001	.0008
%RSD	31.68	19.18	1026.	146.6	22.68	25.13	6.877	79.94	119.8
#1	.0003	.0141	.0024	-.0093	.0001	.0030	.0789	.0003	-.0001
#2	.0002	.0142	-.0161	-.0267	.0002	.0024	.0727	.0000	-.0003
#3	.0002	.0099	.0189	.0043	.0001	.0018	.0689	.0002	-.0017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	F .0025	.0005	.0001	.0003	.0007	.0017	.0003	.0000
Stddev	.0014	.0009	.0001	.0002	.0001	.0001	.0010	.0004	.0001
%RSD	1462.	35.51	16.19	202.7	44.54	16.03	62.01	110.2	1167.
#1	-.0013	.0023	.0005	.0001	.0004	.0007	.0026	.0007	.0000
#2	.0014	.0035	.0006	-.0001	.0002	.0007	.0006	.0003	-.0001
#3	-.0003	.0018	.0004	.0003	.0002	.0005	.0019	.0000	.0001
Check ?	Chk Pass	Chk Fail	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		.0020							
Low Limit		-.0020							

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 15:09:41 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1588.6	4316.3	31889.	6859.9
Stddev	2.8	2.6	115.	26.9
%RSD	.17739	.05972	.35991	.39225
#1	1591.7	4319.3	31757.	6831.0
#2	1586.3	4314.6	31948.	6864.6
#3	1587.7	4315.0	31963.	6884.2

Zoom In Zoom Out

Sample Name: FA43362-4 Acquired: 4/27/2017 15:14:13 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0003**	**.0304**	**.0281**	**.0779**	**.0000**	**50.04**	**.0006**	**.0000**	**.0013**
Stddev	.0005	.0123	.0003	.0002	.0000	.04	.0000	.0001	.0001
%RSD	183.2	40.41	1.200	.2410	623.1	.0882	3.585	344.4	5.789
#1	-.0001	.0446	.0282	.0779	.0000	50.03	.0006	.0001	.0014
#2	.0001	.0239	.0278	.0778	.0000	50.01	.0005	.0001	.0013
#3	-.0008	.0228	.0285	.0781	.0000	50.09	.0006	-.0001	.0014

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0011**	**.0403**	**9.685**	**12.83**	**.1010**	**.0276**	**65.78**	**.0036**	**.0002**
Stddev	.0005	.0015	.034	.02	.0003	.0002	.10	.0001	.0003
%RSD	46.78	3.806	.3517	.1726	.3173	.8061	.1484	2.417	175.6
#1	.0017	.0421	9.710	12.83	.1014	.0275	65.71	.0036	.0000
#2	.0007	.0398	9.699	12.81	.1008	.0279	65.74	.0035	.0005
#3	.0009	.0392	9.646	12.86	.1009	.0275	65.89	.0036	.0000

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0011**	**.0018**	**4.826**	**.0005**	**.4456**	**.0021**	**.0005**	**.0016**	**.0845**
Stddev	.0002	.0008	.017	.0002	.0003	.0003	.0003	.0004	.0001
%RSD	23.22	46.29	.3566	40.87	.0700	12.48	74.55	24.73	.0983
#1	.0008	.0027	4.807	.0007	.4457	.0022	.0008	.0018	.0845
#2	.0011	.0012	4.840	.0003	.4453	.0022	.0001	.0019	.0844
#3	.0013	.0014	4.832	.0006	.4459	.0018	.0005	.0011	.0846

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1560.7**	**4223.5**	**32090.**	**6834.2**
Stddev	4.3	4.8	170.	11.2
%RSD	.27767	.11425	.53018	.16389
#1	1560.0	4229.0	32055.	6822.1
#2	1565.3	4220.3	31940.	6844.1
#3	1556.7	4221.2	32275.	6836.5

Zoom In Zoom Out

Sample Name: FA43362-5 Acquired: 4/27/2017 15:18:40 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0001**	**.0396**	**.0115**	**.0388**	**.0000**	**92.65**	**.0000**	**.0000**	**.0010**
Stddev	.0003	.0035	.0000	.0004	.000	.33	.0000	.000	.0002
%RSD	384.7	8.731	.4112	.9687	127.1	.3608	186.1	124.2	17.10
#1	-.0003	.0359	.0115	.0391	.0000	92.99	.0000	.0000	.0011
#2	.0002	.0402	.0114	.0388	.0000	92.32	.0000	-.0001	.0008
#3	.0003	.0428	.0114	.0384	-.0001	92.64	.0000	.0000	.0010

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**-.0002**	**.2166**	**2.564**	**23.25**	**1.363**	**.0411**	F **84.59**	**.0006**	**-.0007**
Stddev	.0006	.0011	.032	.15	.006	.0002	.14	.0001	.0005
%RSD	270.5	.5103	1.227	.6376	.4256	.5680	.1653	9.443	81.71
#1	.0001	.2174	2.539	23.41	1.357	.0410	84.75	.0005	-.0012
#2	.0001	.2153	2.555	23.21	1.367	.0413	84.55	.0006	-.0006
#3	-.0009	.2170	2.600	23.13	1.366	.0409	84.48	.0006	-.0001

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0003**	**.0008**	**8.123**	**.0005**	**.7917**	**.0028**	**-.0002**	**.0012**	**.0031**
Stddev	.0016	.0011	.003	.0003	.0013	.0002	.0005	.0003	.0001
%RSD	521.4	137.2	.0418	52.01	.1641	7.302	201.6	24.10	2.683
#1	-.0013	-.0002	8.120	.0004	.7906	.0030	-.0004	.0012	.0032
#2	.0003	.0006	8.123	.0003	.7931	.0029	.0003	.0009	.0031
#3	.0019	.0021	8.127	.0008	.7912	.0026	-.0007	.0014	.0030

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1530.2**	**4158.3**	**31781.**	**6702.8**
Stddev	2.2	8.3	141.	63.1
%RSD	.14290	.19850	.44367	.94173
#1	1527.9	4149.6	31937.	6639.7
#2	1530.4	4159.1	31662.	6766.0
#3	1532.2	4166.1	31746.	6702.6

Zoom In Zoom Out

Sample Name: FA43362-6 Acquired: 4/27/2017 15:23:09 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**.0217**	**.0019**	**.0522**	**.0000**	**144.2**	**.0002**	**.0012**	**.0013**
Stddev	.0005	.0087	.0005	.0004	.000	.5	.0000	.0001	.0003
%RSD	261.6	40.15	27.01	.7934	167.7	.3593	16.41	10.61	21.38
#1	-.0006	.0169	.0020	.0519	.0000	144.7	.0002	.0011	.0011
#2	.0004	.0164	.0024	.0520	.0000	143.8	.0002	.0012	.0017
#3	-.0004	.0317	.0014	.0527	-.0001	143.9	.0002	.0014	.0012

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0059**	**.0342**	**8.418**	**44.05**	**.5378**	**.0577**	F **484.2**	**.0342**	**-.0010**
Stddev	.0002	.0020	.024	.31	.0011	.0003	1.9	.0002	.0003
%RSD	4.102	5.986	.2801	.7070	.1993	.5097	.3953	.6402	33.66
#1	.0058	.0366	8.445	44.41	.5390	.0575	486.4	.0342	-.0012
#2	.0061	.0327	8.407	43.89	.5376	.0576	482.9	.0340	-.0012
#3	.0056	.0334	8.402	43.85	.5368	.0580	483.4	.0344	-.0006

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0006**	**.0080**	**6.570**	**.0001**	**1.686**	**.0010**	**.0001**	**.0145**	**.0009**
Stddev	.0009	.0020	.011	.0003	.004	.0001	.0015	.0002	.0001
%RSD	171.0	25.63	.1615	265.8	.2068	10.03	1137.	1.087	6.132
#1	.0010	.0060	6.560	-.0002	1.689	.0008	-.0002	.0147	.0008
#2	-.0005	.0078	6.581	.0002	1.683	.0010	.0018	.0145	.0009
#3	.0012	.0101	6.567	.0004	1.686	.0010	-.0012	.0144	.0008

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1443.2**	**4020.7**	**31109.**	**6536.8**
Stddev	4.5	2.0	53.	55.4
%RSD	.31314	.04984	.16939	.84746
#1	1438.3	4019.0	31049.	6475.2
#2	1447.3	4020.1	31128.	6552.4
#3	1444.0	4022.9	31149.	6582.7

Zoom In Zoom Out

Sample Name: FA43362-7 Acquired: 4/27/2017 15:27:44 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**1.162**	**.0843**	**.1104**	**.0000**	**58.53**	**.0005**	**.0006**	**.0340**
Stddev	.0004	.004	.0010	.0005	.000	.20	.0000	.0001	.0002
%RSD	356.3	.3334	1.156	.4531	55.00	.3493	6.238	11.44	.7159
#1	.0000	1.166	.0853	.1100	-.0001	58.55	.0005	.0007	.0337
#2	-.0005	1.161	.0842	.1110	.0000	58.73	.0005	.0007	.0341
#3	.0002	1.159	.0833	.1103	.0000	58.32	.0005	.0006	.0342

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0368**	**1.670**	**2.448**	**3.166**	**.0505**	**.0028**	**9.277**	**.0041**	**.0178**
Stddev	.0001	.006	.024	.053	.0002	.0002	.021	.0001	.0006
%RSD	.2617	.3775	.9797	1.688	.3594	6.936	.2223	2.861	3.264
#1	.0368	1.666	2.435	3.153	.0503	.0027	9.299	.0041	.0175
#2	.0367	1.677	2.432	3.224	.0506	.0030	9.275	.0040	.0185
#3	.0369	1.667	2.475	3.120	.0505	.0027	9.258	.0042	.0174

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0067**	**.0034**	**1.782**	**.0009**	**.2394**	**.0769**	**.0006**	**.0038**	**.2075**
Stddev	.0007	.0008	.014	.0002	.0013	.0013	.0005	.0003	.0006
%RSD	11.25	23.76	.7809	23.60	.5620	1.648	79.88	8.264	.2705
#1	.0068	.0033	1.797	.0011	.2408	.0759	.0012	.0036	.2081
#2	.0073	.0043	1.780	.0009	.2393	.0764	.0004	.0036	.2071
#3	.0058	.0027	1.769	.0007	.2381	.0783	.0003	.0041	.2072

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1574.6**	**4270.8**	**32189.**	**6871.8**
Stddev	.9	9.6	65.	47.2
%RSD	.05578	.22567	.20147	.68691
#1	1573.6	4260.4	32264.	6907.2
#2	1575.1	4279.5	32148.	6818.2
#3	1575.1	4272.4	32156.	6890.0

Zoom In Zoom Out

Sample Name: FA43362-8 Acquired: 4/27/2017 15:32:11 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**.1761**	**.1081**	**.0404**	**.0000**	**198.0**	**.0000**	**.0062**	**.0027**
Stddev	.0003	.0088	.0010	.0001	.000	1.0	.000	.0000	.0003
%RSD	226.1	5.003	.9026	.2349	479.3	.4808	3701.	.4312	11.49
#1	-.0002	.1736	.1070	.0403	.0000	198.9	.0001	.0062	.0031
#2	.0002	.1859	.1088	.0404	.0000	197.0	.0000	.0061	.0024
#3	-.0003	.1689	.1084	.0405	-.0001	198.0	-.0001	.0062	.0027

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0094**	**.9508**	F **88.36**	**53.20**	**.9883**	**.0972**	F **422.7**	**.1069**	**.0008**
Stddev	.0003	.0010	.36	.30	.0008	.0003	2.2	.0003	.0007
%RSD	2.903	.1040	.4094	.5612	.0785	.2619	.5314	.2489	89.63
#1	.0094	.9499	88.77	53.19	.9874	.0970	420.2	.1068	.0001
#2	.0092	.9518	88.18	52.92	.9886	.0973	423.8	.1072	.0008
#3	.0097	.9506	88.12	53.51	.9888	.0975	424.3	.1067	.0016

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0014**	**.0064**	**4.976**	**.0006**	**1.704**	**.0025**	**.0006**	**.0025**	**.3988**
Stddev	.0009	.0010	.008	.0004	.006	.0001	.0012	.0001	.0011
%RSD	67.53	15.14	.1691	59.15	.3459	5.513	200.8	2.432	.2662
#1	.0006	.0075	4.984	.0010	1.711	.0024	.0019	.0026	.3992
#2	.0024	.0063	4.967	.0006	1.703	.0026	-.0003	.0025	.3977
#3	.0011	.0055	4.976	.0003	1.699	.0024	.0002	.0025	.3997

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1422.5**	**3981.4**	**30838.**	**6525.2**
Stddev	3.6	6.4	39.	27.7
%RSD	.25046	.16174	.12490	.42499
#1	1419.3	3975.5	30881.	6495.4
#2	1421.7	3980.4	30808.	6550.2
#3	1426.3	3988.3	30824.	6530.1

Zoom In Zoom Out

Sample Name: FA43362-9 Acquired: 4/27/2017 15:36:54 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0003**	**1.142**	**2.540**	**.0835**	**.0000**	**178.8**	**.0000**	**.0032**	**.0042**
Stddev	.0001	.005	.006	.0004	.0000	.8	.000	.0001	.0000
%RSD	44.50	.4539	.2473	.4824	276.3	.4619	87.65	2.473	.9669
#1	-.0002	1.139	2.542	.0830	.0000	177.8	-.0001	.0033	.0042
#2	-.0004	1.148	2.533	.0837	.0000	179.3	-.0001	.0032	.0042
#3	-.0004	1.140	2.545	.0837	.0000	179.2	.0000	.0032	.0043

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0024**	**3.763**	**19.80**	**40.15**	**.9637**	**.0806**	F **359.2**	**.0707**	**.0003**
Stddev	.0001	.005	.01	.05	.0024	.0002	6.9	.0003	.0006
%RSD	3.812	.1298	.0278	.1287	.2538	.2826	1.933	.4726	219.1
#1	.0024	3.761	19.79	40.15	.9616	.0807	366.7	.0709	-.0004
#2	.0025	3.768	19.80	40.10	.9630	.0803	353.0	.0703	.0005
#3	.0023	3.759	19.80	40.20	.9664	.0807	357.8	.0709	.0007

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0152**	**.0009**	**9.295**	**.0005**	**1.367**	**.0822**	**-.0004**	**.0051**	**.0236**
Stddev	.0006	.0012	.022	.0003	.003	.0007	.0015	.0001	.0001
%RSD	3.853	130.4	.2364	64.28	.2293	.8100	375.3	1.101	.4881
#1	.0157	.0019	9.312	.0004	1.365	.0814	-.0017	.0052	.0236
#2	.0146	-.0004	9.270	.0002	1.371	.0823	.0012	.0051	.0235
#3	.0154	.0013	9.303	.0008	1.365	.0827	-.0007	.0051	.0237

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1443.8**	**4043.0**	**31266.**	**6610.7**
Stddev	.7	8.8	146.	17.0
%RSD	.04790	.21707	.46630	.25658
#1	1443.7	4037.1	31434.	6591.7
#2	1444.5	4053.1	31196.	6616.2
#3	1443.1	4038.8	31169.	6624.3

Zoom In Zoom Out

Sample Name: FA43362-10 Acquired: 4/27/2017 15:41:35 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0005**	**6.420**	**.0405**	**.2059**	**.0001**	**193.1**	**.0000**	**.0042**	**.0145**
Stddev	.0002	.036	.0004	.0006	.0001	1.3	.0000	.0000	.0002
%RSD	37.73	.5596	.9714	.2921	73.08	.6843	97.54	.6935	1.140
#1	-.0003	6.456	.0404	.2056	.0002	193.5	.0000	.0042	.0145
#2	-.0006	6.420	.0402	.2055	.0000	191.6	.0000	.0042	.0143
#3	-.0006	6.385	.0410	.2066	.0002	194.2	.0000	.0042	.0146

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0125**	**9.983**	**9.265**	**46.99**	**.3300**	**.0147**	F **102.5**	**.0104**	**.0008**
Stddev	.0002	.002	.024	.18	.0005	.0001	.1	.0002	.0006
%RSD	1.950	.0183	.2600	.3832	.1402	.6045	.0839	1.826	77.36
#1	.0128	9.983	9.284	47.19	.3297	.0148	102.4	.0104	.0014
#2	.0124	9.982	9.238	46.92	.3305	.0146	102.5	.0106	.0007
#3	.0124	9.985	9.274	46.86	.3297	.0148	102.5	.0103	.0002

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0010**	**.0030**	**13.27**	**.0019**	**1.208**	**.5154**	**.0005**	**.0178**	**.0814**
Stddev	.0004	.0012	.03	.0003	.002	.0069	.0008	.0004	.0002
%RSD	39.66	38.34	.2082	14.95	.1938	1.338	147.3	2.314	.3026
#1	.0009	.0036	13.30	.0016	1.210	.5231	.0000	.0183	.0811
#2	.0007	.0017	13.25	.0019	1.209	.5097	.0002	.0178	.0815
#3	.0014	.0038	13.25	.0021	1.205	.5135	.0014	.0174	.0816

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1483.8**	**4122.5**	**31643.**	**6612.0**
Stddev	6.4	12.4	46.	44.1
%RSD	.43315	.30093	.14450	.66640
#1	1489.9	4135.6	31595.	6566.0
#2	1484.3	4121.1	31649.	6653.9
#3	1477.1	4110.9	31686.	6616.2

Zoom In Zoom Out

Sample Name: MP32058-MB1 Acquired: 4/27/2017 15:46:08 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0030**	**-.0015**	**-.0003**	**.0000**	**.0243**	**-.0001**	**-.0001**	**.0001**
Stddev	.0000	.0017	.0009	.0002	.000	.0006	.0000	.0000	.0004
%RSD	13.95	55.68	59.93	87.20	288.9	2.455	19.72	58.91	636.7
#1	-.0002	.0019	-.0005	-.0003	-.0001	.0237	.0000	-.0001	-.0001
#2	-.0002	.0022	-.0022	.0000	.0000	.0245	-.0001	.0000	.0005
#3	-.0003	.0049	-.0017	-.0005	.0000	.0248	-.0001	-.0001	-.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0008**	**.0011**	**.0404**	**.0016**	**.0000**	**.0001**	**.1228**	**-.0003**	**-.0005**
Stddev	.0002	.0002	.0207	.0040	.0000	.0002	.0005	.0001	.0002
%RSD	29.53	23.46	51.12	246.2	322.7	369.2	.4339	43.42	48.18
#1	-.0011	.0008	.0360	.0050	.0000	.0002	.1233	-.0003	-.0002
#2	-.0006	.0011	.0223	-.0028	.0001	-.0002	.1229	-.0001	-.0006
#3	-.0008	.0013	.0629	.0027	.0000	.0002	.1222	-.0004	-.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0002**	**.0007**	**.0001**	**.0002**	**.0001**	**.0001**	**-.0015**	**.0000**	**.0007**
Stddev	.0003	.0005	.0003	.0003	.0000	.0001	.0010	.000	.0000
%RSD	151.4	71.89	169.9	137.3	20.78	50.88	68.68	217.0	2.493
#1	-.0003	.0003	.0002	-.0001	.0002	.0001	-.0013	-.0001	.0007
#2	.0001	.0012	.0004	.0004	.0001	.0002	-.0006	-.0001	.0007
#3	-.0004	.0005	-.0001	.0003	.0001	.0001	-.0026	.0001	.0007
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP32058-MB1 Acquired: 4/27/2017 15:46:08 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1589.4**	**4358.2**	**32437.**	**6929.1**
Stddev	2.3	3.0	48.	38.1
%RSD	.14652	.06833	.14662	.54972
#1	1588.7	4354.9	32476.	6888.3
#2	1592.0	4360.7	32384.	6935.4
#3	1587.5	4359.0	32451.	6963.7

Zoom In Zoom Out

Sample Name: MP32058-B1 Acquired: 4/27/2017 15:50:42 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0455**	**27.48**	**1.914**	**2.043**	**.0505**	**25.54**	**.0491**	**.4895**	**.2026**
Stddev	.0007	.13	.004	.006	.0003	.10	.0000	.0010	.0005
%RSD	1.594	.4809	.1951	.2853	.6619	.3929	.1016	.1984	.2461
#1	.0448	27.63	1.914	2.049	.0508	25.65	.0490	.4887	.2030
#2	.0455	27.43	1.910	2.042	.0504	25.47	.0491	.4893	.2020
#3	.0463	27.38	1.917	2.038	.0502	25.49	.0491	.4906	.2026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2485**	**26.60**	**25.24**	**25.51**	**.5039**	**.5109**	**24.82**	**.4964**	**.4745**
Stddev	.0010	.14	.07	.27	.0010	.0013	.07	.0002	.0016
%RSD	.4093	.5248	.2885	1.067	.1946	.2495	.2819	.0467	.3277
#1	.2495	26.77	25.30	25.83	.5048	.5095	24.90	.4964	.4727
#2	.2484	26.54	25.26	25.35	.5028	.5112	24.77	.4962	.4753
#3	.2475	26.51	25.16	25.36	.5039	.5121	24.78	.4966	.4755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4900**	**1.903**	**.0093**	**.5091**	**.5073**	**.5011**	**1.886**	**.4807**	**.4840**
Stddev	.0021	.010	.0006	.0014	.0017	.0017	.004	.0004	.0002
%RSD	.4234	.5070	6.277	.2729	.3321	.3352	.2095	.0811	.0515
#1	.4876	1.892	.0091	.5106	.5091	.5028	1.883	.4807	.4843
#2	.4906	1.905	.0089	.5090	.5058	.4994	1.891	.4803	.4838
#3	.4916	1.911	.0100	.5078	.5070	.5010	1.884	.4810	.4841
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP32058-B1 Acquired: 4/27/2017 15:50:42 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1541.3**	**4287.9**	**32172.**	**6838.2**
Stddev	3.1	5.8	183.	61.3
%RSD	.20052	.13450	.56741	.89629
#1	1544.6	4293.0	32018.	6768.1
#2	1540.6	4288.9	32374.	6881.7
#3	1538.5	4281.6	32123.	6864.8

Zoom In Zoom Out

Sample Name: FA43373-4 Acquired: 4/27/2017 15:54:56 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0000**	**.0406**	**-.0006**	**.2614**	**.0002**	**15.60**	**.0003**	**.0307**	**.0006**
Stddev	.000	.0055	.0008	.0009	.0000	.06	.0000	.0001	.0003
%RSD	909.7	13.43	134.9	.3509	12.86	.3724	9.044	.2823	52.11
#1	-.0003	.0386	.0002	.2624	.0002	15.65	.0003	.0306	.0009
#2	-.0001	.0364	-.0013	.2612	.0002	15.60	.0003	.0307	.0003
#3	.0003	.0468	-.0006	.2606	.0002	15.54	.0004	.0308	.0006

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**-.0009**	**7.680**	**1.173**	**11.81**	**2.087**	**.0004**	**52.08**	**.0598**	**-.0017**
Stddev	.0002	.049	.036	.07	.002	.0001	.27	.0003	.0009
%RSD	22.91	.6343	3.096	.6243	.0879	28.24	.5243	.4303	55.15
#1	-.0007	7.714	1.215	11.83	2.088	.0005	52.31	.0596	-.0008
#2	-.0011	7.701	1.151	11.87	2.085	.0003	52.14	.0601	-.0016
#3	-.0008	7.624	1.153	11.73	2.088	.0004	51.78	.0598	-.0026

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0004**	**.0008**	**9.928**	**.0005**	**.0984**	**.0015**	**-.0006**	**.0005**	**.0512**
Stddev	.0003	.0010	.014	.0001	.0006	.0002	.0013	.0002	.0001
%RSD	90.74	130.5	.1394	16.88	.5834	15.70	197.5	33.76	.2203
#1	.0001	.0019	9.913	.0006	.0988	.0015	.0002	.0003	.0511
#2	.0007	.0000	9.932	.0005	.0987	.0018	.0000	.0006	.0512
#3	.0002	.0005	9.940	.0005	.0978	.0013	-.0021	.0006	.0514

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1571.4**	**4294.6**	**32332.**	**6818.0**
Stddev	3.3	7.7	37.	35.7
%RSD	.21013	.17916	.11581	.52329
#1	1570.5	4303.5	32330.	6779.0
#2	1568.6	4289.6	32371.	6825.9
#3	1575.0	4290.8	32296.	6849.0

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 15:59:19 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2387	38.86	1.916	1.968	1.955	38.92	1.944	1.942	1.949
Stddev	.0004	.15	.001	.005	.007	.17	.002	.001	.005
%RSD	.1823	.3956	.0611	.2566	.3372	.4432	.1001	.0238	.2419
#1	.2388	38.74	1.915	1.964	1.951	38.80	1.943	1.941	1.949
#2	.2390	39.03	1.916	1.974	1.963	39.12	1.943	1.941	1.954
#3	.2382	38.81	1.917	1.967	1.952	38.85	1.946	1.942	1.944
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.916	39.42	38.67	39.41	1.954	1.915	38.44	1.932	1.921
Stddev	.002	.18	.10	.24	.003	.001	.10	.001	.002
%RSD	.0825	.4502	.2462	.6067	.1625	.0749	.2616	.0238	.1019
#1	1.916	39.29	38.70	39.26	1.951	1.915	38.37	1.931	1.922
#2	1.917	39.62	38.75	39.68	1.957	1.914	38.55	1.932	1.919
#3	1.914	39.34	38.56	39.28	1.953	1.917	38.39	1.932	1.922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.919	1.933	1.812	1.950	1.962	1.945	1.924	1.927	1.937
Stddev	.005	.004	.002	.006	.004	.002	.005	.004	.002
%RSD	.2565	.2011	.0823	.3036	.2106	.1176	.2679	.1996	.0934
#1	1.922	1.928	1.813	1.950	1.961	1.943	1.923	1.925	1.936
#2	1.922	1.934	1.812	1.944	1.967	1.947	1.930	1.931	1.936
#3	1.914	1.936	1.810	1.956	1.958	1.945	1.920	1.924	1.939
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 15:59:19 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1515.1	4295.5	32689.	6867.1
Stddev	2.4	2.8	78.	69.1
%RSD	.15936	.06479	.23836	1.0069
#1	1512.6	4297.4	32701.	6880.1
#2	1515.4	4292.3	32606.	6792.4
#3	1517.4	4296.8	32760.	6928.8

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 16:03:29 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	.0007	.0003	.0001	.0002	.0045	.0001	.0001	.0003
Stddev	.0001	.0059	.0004	.0002	.0000	.0001	.0000	.0000	.0001
%RSD	18.85	814.5	109.0	458.2	18.22	2.583	34.22	34.88	40.67
#1	-.0005	.0059	.0002	.0001	.0003	.0043	.0002	.0001	.0002
#2	-.0004	-.0057	.0008	.0003	.0002	.0045	.0001	.0001	.0004
#3	-.0005	.0019	.0001	-.0002	.0002	.0046	.0001	.0000	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0008	.0141	.0435	.0099	.0002	F .0024	.0504	.0001	-.0002
Stddev	.0001	.0018	.0144	.0128	.0000	.0005	.0033	.0002	.0001
%RSD	8.763	12.71	33.07	129.6	13.77	20.47	6.449	271.1	42.61
#1	-.0007	.0161	.0600	.0221	.0002	.0028	.0519	.0000	-.0003
#2	-.0009	.0131	.0364	-.0035	.0002	.0026	.0526	.0003	-.0003
#3	-.0007	.0130	.0340	.0110	.0002	.0019	.0467	-.0001	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0010	.0007	.0006	.0002	.0007	.0016	.0004	.0001
Stddev	.0006	.0016	.0004	.0001	.0000	.0000	.0017	.0002	.0001
%RSD	366.2	166.2	54.31	18.75	13.60	5.425	103.9	35.37	74.83
#1	.0008	-.0009	.0009	.0005	.0002	.0008	.0030	.0005	.0000
#2	-.0004	.0018	.0003	.0007	.0002	.0007	.0020	.0005	.0001
#3	.0000	.0020	.0009	.0006	.0002	.0007	-.0002	.0003	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 16:03:29 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1611.8	4424.6	32722.	6905.3
Stddev	.5	5.1	95.	22.6
%RSD	.02870	.11517	.29139	.32784
#1	1611.3	4425.3	32749.	6902.0
#2	1611.8	4419.2	32617.	6929.4
#3	1612.3	4429.3	32802.	6884.5

Zoom In Zoom Out

Sample Name: MP32058-D1 Acquired: 4/27/2017 16:08:00 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**.0330**	**-.0003**	**.2472**	**.0002**	**14.68**	**.0003**	**.0289**	**.0005**
Stddev	.0001	.0048	.0002	.0003	.0000	.05	.0000	.0001	.0003
%RSD	166.5	14.61	58.40	.1187	18.78	.3309	8.173	.1868	62.93
#1	-.0002	.0318	-.0001	.2475	.0003	14.74	.0003	.0290	.0001
#2	-.0002	.0384	-.0002	.2469	.0002	14.66	.0003	.0289	.0007
#3	.0001	.0290	-.0004	.2473	.0002	14.65	.0003	.0289	.0008

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**-.0010**	**7.272**	**1.071**	**11.23**	**1.969**	**.0006**	**49.40**	**.0563**	**-.0020**
Stddev	.0004	.017	.029	.12	.007	.0001	.16	.0004	.0002
%RSD	38.00	.2364	2.688	1.093	.3405	20.50	.3288	.7242	11.56
#1	-.0014	7.291	1.083	11.37	1.971	.0007	49.59	.0562	-.0022
#2	-.0010	7.266	1.091	11.14	1.962	.0004	49.32	.0567	-.0021
#3	-.0006	7.259	1.038	11.17	1.975	.0006	49.30	.0559	-.0017

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0010**	**-.0001**	**9.350**	**.0004**	**.0930**	**.0012**	**.0002**	**.0006**	**.0500**
Stddev	.0004	.0018	.005	.0001	.0003	.0001	.0005	.0002	.0001
%RSD	44.36	1681.	.0487	27.79	.3193	8.162	283.9	38.88	.2651
#1	.0010	.0001	9.354	.0005	.0933	.0011	-.0002	.0003	.0501
#2	.0014	.0016	9.345	.0004	.0930	.0013	-.0001	.0008	.0499
#3	.0005	-.0020	9.351	.0003	.0927	.0013	.0008	.0006	.0499

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1574.6**	**4318.6**	**32231.**	**6852.2**
Stddev	4.1	9.4	110.	65.5
%RSD	.25789	.21713	.34221	.95556
#1	1571.9	4309.7	32217.	6776.8
#2	1572.6	4317.6	32348.	6884.6
#3	1579.2	4328.4	32129.	6895.1

Zoom In Zoom Out

Sample Name: MP32058-SD1 Acquired: 4/27/2017 16:12:25 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**.0128**	**-.0032**	**.2664**	**.0003**	**15.95**	**.0002**	**.0315**	**.0017**
Stddev	.0012	.0325	.0049	.0005	.0002	.05	.0001	.0003	.0005
%RSD	307.6	253.7	154.5	.1748	67.68	.3272	28.00	.8051	31.38
#1	.0002	-.0198	.0007	.2660	.0002	15.89	.0002	.0312	.0022
#2	.0004	.0452	-.0015	.2669	.0001	15.96	.0001	.0317	.0011
#3	-.0018	.0130	-.0087	.2663	.0005	16.00	.0002	.0316	.0017

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**-.0055**	**7.867**	**1.169**	**12.31**	**2.138**	**.0008**	**53.76**	**.0603**	**-.0016**
Stddev	.0016	.031	.109	.13	.002	.0014	.11	.0004	.0018
%RSD	29.13	.3903	9.358	1.030	.1011	167.6	.2009	.6088	115.2
#1	-.0056	7.859	1.261	12.44	2.139	-.0007	53.76	.0603	-.0037
#2	-.0070	7.842	1.048	12.19	2.140	.0021	53.65	.0600	-.0008
#3	-.0038	7.902	1.199	12.28	2.135	.0012	53.86	.0607	-.0003

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0003**	**.0071**	**9.965**	**.0016**	**.0995**	**.0020**	**.0033**	**.0006**	**.0728**
Stddev	.0026	.0018	.015	.0011	.0006	.0004	.0044	.0004	.0000
%RSD	1034.	25.83	.1540	69.32	.6508	21.25	135.5	77.79	.0668
#1	-.0033	.0077	9.981	.0028	.0998	.0016	-.0014	.0009	.0728
#2	.0015	.0086	9.950	.0011	.0987	.0025	.0073	.0001	.0728
#3	.0011	.0051	9.964	.0008	.0999	.0019	.0039	.0007	.0727

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1614.3**	**4410.4**	**32614.**	**6876.2**
Stddev	2.8	6.5	29.	25.9
%RSD	.17517	.14835	.08821	.37644
#1	1613.8	4405.3	32647.	6903.3
#2	1617.3	4408.0	32594.	6873.7
#3	1611.7	4417.8	32601.	6851.7

Zoom In Zoom Out

Sample Name: MP32058-PS1 Acquired: 4/27/2017 16:16:52 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0462**	**2.657**	**.1035**	**.5265**	**.0529**	**20.46**	**.0514**	**.0810**	**.0534**
Stddev	.0004	.010	.0003	.0026	.0000	.06	.0002	.0001	.0005
%RSD	.8486	.3918	.3098	.4887	.0074	.2876	.3102	.1200	.8675
#1	.0460	2.667	.1038	.5293	.0529	20.50	.0514	.0810	.0534
#2	.0466	2.646	.1033	.5243	.0529	20.39	.0512	.0809	.0538
#3	.0460	2.659	.1033	.5258	.0529	20.49	.0515	.0810	.0529

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1034**	**10.68**	**11.27**	**16.74**	**2.098**	**.1071**	**61.22**	**.1595**	**.0459**
Stddev	.0001	.02	.04	.12	.002	.0004	.17	.0002	.0002
%RSD	.0498	.1599	.3919	.6946	.1050	.3292	.2726	.1482	.4143
#1	.1034	10.69	11.32	16.65	2.097	.1073	61.39	.1592	.0458
#2	.1035	10.66	11.24	16.69	2.101	.1067	61.06	.1596	.0461
#3	.1034	10.69	11.25	16.87	2.097	.1074	61.20	.1596	.0457

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1054**	**.0982**	**9.814**	**.0513**	**.1481**	**.1052**	**.0967**	**.0507**	**.3085**
Stddev	.0011	.0012	.012	.0003	.0005	.0005	.0007	.0002	.0002
%RSD	1.026	1.193	.1202	.6516	.3669	.4445	.7382	.4888	.0652
#1	.1042	.0973	9.811	.0509	.1487	.1052	.0959	.0507	.3084
#2	.1064	.0978	9.804	.0516	.1479	.1057	.0969	.0504	.3087
#3	.1056	.0995	9.827	.0513	.1476	.1047	.0973	.0509	.3083

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1554.8**	**4283.2**	**32157.**	**6853.9**
Stddev	4.0	3.0	91.	15.3
%RSD	.25517	.07116	.28362	.22320
#1	1558.1	4281.4	32250.	6842.0
#2	1550.4	4286.7	32067.	6871.1
#3	1555.9	4281.5	32155.	6848.5

Zoom In Zoom Out

Sample Name: MP32058-S1 Acquired: 4/27/2017 16:21:11 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0455**	**27.56**	**1.923**	**2.299**	**.0510**	**40.20**	**.0491**	**.5169**	**.2034**
Stddev	.0009	.07	.002	.006	.0000	.07	.0000	.0004	.0006
%RSD	2.056	.2503	.0834	.2516	.0512	.1743	.0836	.0862	.3116
#1	.0464	27.62	1.921	2.300	.0509	40.22	.0490	.5165	.2041
#2	.0455	27.49	1.925	2.305	.0510	40.12	.0491	.5169	.2029
#3	.0446	27.57	1.923	2.293	.0510	40.25	.0491	.5174	.2032

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2522**	**33.79**	**26.55**	**36.77**	**2.491**	**.5109**	**74.81**	**.5484**	**.4732**
Stddev	.0008	.04	.05	.07	.002	.0010	.13	.0006	.0011
%RSD	.3334	.1095	.2021	.1965	.0780	.1884	.1797	.1083	.2307
#1	.2531	33.83	26.60	36.80	2.493	.5101	74.94	.5477	.4730
#2	.2515	33.75	26.50	36.69	2.489	.5120	74.67	.5485	.4722
#3	.2520	33.78	26.56	36.83	2.491	.5105	74.82	.5489	.4743

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.4906**	**1.908**	**9.695**	**.5092**	**.6030**	**.5061**	**1.893**	**.4802**	**.5262**
Stddev	.0021	.004	.011	.0003	.0003	.0012	.005	.0013	.0007
%RSD	.4205	.2191	.1129	.0500	.0420	.2358	.2739	.2784	.1412
#1	.4883	1.910	9.684	.5091	.6029	.5060	1.888	.4803	.5270
#2	.4923	1.911	9.706	.5091	.6028	.5049	1.893	.4815	.5256
#3	.4910	1.903	9.696	.5095	.6033	.5073	1.899	.4788	.5259

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1508.8**	**4238.7**	**31856.**	**6788.4**
Stddev	.7	6.1	121.	17.6
%RSD	.04536	.14317	.37918	.26000
#1	1508.3	4238.2	31752.	6768.1
#2	1508.5	4232.9	31989.	6796.7
#3	1509.6	4245.0	31828.	6800.4

Zoom In Zoom Out

Sample Name: MP32058-S2 Acquired: 4/27/2017 16:25:23 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0456**	**27.61**	**1.929**	**2.317**	**.0515**	**40.43**	**.0492**	**.5186**	**.2022**
Stddev	.0002	.09	.006	.003	.0001	.10	.0001	.0004	.0003
%RSD	.4538	.3222	.3340	.1075	.1279	.2454	.2804	.0783	.1319
#1	.0454	27.53	1.928	2.316	.0516	40.35	.0493	.5190	.2020
#2	.0458	27.70	1.923	2.320	.0515	40.40	.0490	.5182	.2025
#3	.0456	27.59	1.936	2.315	.0516	40.54	.0491	.5187	.2021

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2521**	**33.95**	**26.49**	**37.07**	**2.509**	**.5181**	**75.75**	**.5503**	**.4738**
Stddev	.0003	.10	.11	.21	.002	.0003	.16	.0006	.0009
%RSD	.1075	.2866	.3962	.5733	.0816	.0577	.2160	.1035	.1981
#1	.2524	33.85	26.38	36.85	2.507	.5180	75.57	.5506	.4741
#2	.2519	33.95	26.51	37.09	2.511	.5178	75.88	.5496	.4727
#3	.2519	34.04	26.59	37.27	2.508	.5184	75.81	.5506	.4745

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.4925**	**1.915**	**9.850**	**.5155**	**.6136**	**.5105**	**1.899**	**.4788**	**.5275**
Stddev	.0049	.002	.006	.0006	.0013	.0010	.001	.0009	.0019
%RSD	.9936	.0892	.0653	.1089	.2155	.1970	.0420	.1971	.3517
#1	.4875	1.913	9.854	.5151	.6125	.5104	1.898	.4787	.5296
#2	.4973	1.914	9.842	.5152	.6151	.5116	1.899	.4778	.5263
#3	.4927	1.916	9.852	.5161	.6132	.5096	1.900	.4797	.5265

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1517.1**	**4262.4**	**32173.**	**6791.2**
Stddev	2.7	3.4	19.	19.0
%RSD	.17776	.07874	.05812	.28008
#1	1518.7	4258.5	32189.	6810.5
#2	1518.6	4264.4	32152.	6790.6
#3	1514.0	4264.3	32176.	6772.4

Zoom In Zoom Out

Sample Name: FA43373-2 Acquired: 4/27/2017 16:29:35 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	**-.0005**	**.0117**	**.0027**	**.1862**	**.0000**	**10.83**	**-.0007**	**.0017**
Stddev	.0003	.0064	.0012	.0002	.000	.02	.0000	.0001
%RSD	51.41	54.77	43.57	.0852	192.6	.2206	4.485	4.804
#1	-.0004	.0092	.0015	.1863	-.0001	10.83	-.0007	.0018
#2	-.0008	.0190	.0039	.1862	.0000	10.85	-.0007	.0017
#3	-.0003	.0069	.0027	.1860	.0000	10.80	-.0007	.0017

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	**.0000**	**-.0009**	**61.09**	**.6397**	**5.407**	**1.563**	**.0005**	**31.78**
Stddev	.000	.0001	.07	.0286	.039	.004	.0003	.03
%RSD	894.6	14.81	.1177	4.475	.7163	.2719	53.58	.1031
#1	-.0002	-.0008	61.10	.6726	5.451	1.560	.0009	31.80
#2	.0000	-.0011	61.16	.6202	5.387	1.561	.0003	31.80
#3	.0002	-.0010	61.02	.6264	5.382	1.568	.0004	31.74

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	**.0025**	F **-.0084**	**.0014**	**-.0028**	**9.465**	**.0002**	**.0592**	**.0007**
Stddev	.0000	.0003	.0008	.0021	.016	.0003	.0002	.0001
%RSD	1.570	3.752	54.97	75.33	.1649	168.6	.3440	14.34
#1	.0026	-.0081	.0013	-.0049	9.451	.0005	.0594	.0006
#2	.0025	-.0087	.0022	-.0007	9.462	-.0001	.0591	.0007
#3	.0025	-.0085	.0007	-.0028	9.482	.0001	.0591	.0008

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0017**	**.0005**	**.0042**
Stddev	.0005	.0001	.0000
%RSD	26.16	21.51	.6303
#1	.0020	.0004	.0042
#2	.0020	.0006	.0043
#3	.0012	.0006	.0043

Zoom In Zoom Out

Sample Name: FA43373-2 Acquired: 4/27/2017 16:29:35 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1571.8**	**4346.8**	**32524.**	**6891.0**
Stddev	.3	7.4	50.	21.6
%RSD	.01591	.17105	.15331	.31388
#1	1571.9	4350.2	32573.	6876.7
#2	1571.5	4351.9	32474.	6880.4
#3	1572.0	4338.2	32526.	6915.9

Zoom In Zoom Out

Sample Name: FA43373-3 Acquired: 4/27/2017 16:34:00 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	**-.0010**	**.0118**	**.0021**	**.1772**	**.0000**	**10.34**	**-.0007**	**.0017**
Stddev	.0002	.0097	.0002	.0012	.000	.03	.0001	.0001
%RSD	18.10	82.66	11.61	.6782	55.43	.2665	10.90	2.984
#1	-.0009	.0007	.0018	.1777	.0000	10.33	-.0006	.0017
#2	-.0011	.0188	.0022	.1758	.0000	10.32	-.0006	.0017
#3	-.0008	.0158	.0023	.1780	-.0001	10.37	-.0007	.0018

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	**.0000**	**-.0008**	**58.68**	**.5920**	**5.126**	**1.486**	**.0001**	**30.36**
Stddev	.000	.0002	.28	.0320	.041	.002	.0001	.12
%RSD	1281.	20.33	.4780	5.411	.7960	.1064	191.5	.3824
#1	-.0002	-.0010	58.59	.5593	5.126	1.485	.0002	30.34
#2	.0001	-.0007	58.46	.5935	5.086	1.487	-.0001	30.25
#3	.0001	-.0007	59.00	.6233	5.167	1.484	.0001	30.48

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	**.0024**	F **-.0073**	**.0006**	**-.0038**	**9.045**	**.0005**	**.0561**	**.0005**
Stddev	.0001	.0004	.0010	.0016	.009	.0003	.0002	.0002
%RSD	5.213	6.017	189.1	41.08	.1044	56.87	.3601	30.67
#1	.0025	-.0075	-.0006	-.0051	9.052	.0007	.0560	.0005
#2	.0025	-.0076	.0015	-.0043	9.049	.0008	.0561	.0004
#3	.0023	-.0068	.0007	-.0021	9.034	.0002	.0564	.0007

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0012**	**.0004**	**.0041**
Stddev	.0004	.0001	.0000
%RSD	31.66	13.66	.9210
#1	.0008	.0004	.0041
#2	.0013	.0004	.0041
#3	.0015	.0003	.0041

Zoom In Zoom Out

Sample Name: FA43373-3 Acquired: 4/27/2017 16:34:00 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1585.1**	**4381.3**	**32787.**	**6920.1**
Stddev	2.1	8.3	99.	41.0
%RSD	.13268	.18894	.30051	.59292
#1	1583.1	4373.1	32822.	6889.2
#2	1585.0	4381.1	32676.	6966.6
#3	1587.3	4389.7	32863.	6904.5

Zoom In Zoom Out

Sample Name: FA43373-5 Acquired: 4/27/2017 16:38:27 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0001**	**.0334**	**-.0002**	**.1398**	**.0006**	**3.374**	**.0000**	**.0180**	**.0002**
Stddev	.0002	.0023	.0010	.0005	.0000	.011	.000	.0001	.0002
%RSD	184.3	6.944	486.4	.3771	1.359	.3183	84.17	.4171	129.0
#1	.0000	.0313	-.0006	.1403	.0006	3.365	.0000	.0180	.0004
#2	-.0003	.0330	.0009	.1393	.0007	3.386	.0000	.0179	.0000
#3	.0000	.0359	-.0009	.1397	.0006	3.371	.0000	.0180	.0001

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**-.0009**	**5.953**	**.5964**	**3.090**	**.3507**	**-.0001**	**15.83**	**.0212**	**-.0011**
Stddev	.0005	.013	.0186	.014	.0008	.0001	.04	.0001	.0006
%RSD	51.61	.2196	3.115	.4628	.2323	187.5	.2813	.5551	53.31
#1	-.0014	5.967	.5789	3.101	.3516	-.0001	15.88	.0212	-.0010
#2	-.0006	5.943	.6159	3.096	.3503	.0001	15.79	.0212	-.0005
#3	-.0007	5.948	.5944	3.074	.3501	-.0001	15.82	.0214	-.0016

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0001**	**.0009**	**8.248**	**.0002**	**.0264**	**.0007**	**.0008**	**.0002**	**.0415**
Stddev	.0009	.0022	.008	.0002	.0001	.0001	.0010	.0002	.0001
%RSD	1688.	244.0	.0961	139.1	.3274	12.23	132.8	137.9	.2200
#1	-.0007	-.0012	8.239	.0003	.0265	.0006	.0018	.0003	.0415
#2	.0011	.0032	8.249	-.0001	.0263	.0006	-.0002	.0003	.0415
#3	-.0002	.0007	8.254	.0003	.0264	.0008	.0007	-.0001	.0414

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1616.9**	**4404.0**	**32786.**	**7047.1**
Stddev	6.4	2.3	52.	27.0
%RSD	.39825	.05184	.15910	.38255
#1	1620.2	4404.4	32809.	7021.0
#2	1621.2	4406.1	32726.	7045.3
#3	1609.5	4401.6	32822.	7074.9

Zoom In Zoom Out

Sample Name: FA43373-2F Acquired: 4/27/2017 16:42:52 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	**-.0004**	**.0076**	**.0019**	**.1735**	**.0000**	**10.52**	**-.0007**	**.0016**
Stddev	.0002	.0039	.0012	.0004	.000	.03	.0000	.0000
%RSD	43.35	51.51	61.84	.2218	103.8	.2849	2.665	2.670
#1	-.0005	.0058	.0032	.1739	-.0001	10.53	-.0007	.0016
#2	-.0004	.0049	.0010	.1731	.0000	10.48	-.0007	.0015
#3	-.0002	.0121	.0015	.1735	.0000	10.54	-.0007	.0015

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	**.0001**	**-.0009**	**56.95**	**.6368**	**5.112**	**1.497**	**.0005**	**30.57**
Stddev	.0001	.0003	.15	.0326	.020	.002	.0002	.11
%RSD	177.8	30.82	.2643	5.114	.3951	.1469	49.03	.3606
#1	.0000	-.0012	57.12	.6118	5.113	1.497	.0004	30.70
#2	.0000	-.0007	56.85	.6736	5.091	1.499	.0003	30.50
#3	.0002	-.0009	56.88	.6249	5.131	1.495	.0007	30.51

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	**.0025**	**F -.0075**	**.0008**	**-.0051**	**9.051**	**.0002**	**.0569**	**.0005**
Stddev	.0001	.0006	.0007	.0017	.020	.0001	.0001	.0000
%RSD	3.050	8.335	88.53	33.07	.2171	34.96	.2228	2.850
#1	.0024	-.0075	.0015	-.0033	9.065	.0003	.0571	.0005
#2	.0025	-.0069	.0001	-.0066	9.029	.0001	.0568	.0005
#3	.0026	-.0081	.0008	-.0053	9.060	.0002	.0569	.0005

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0009**	**.0005**	**.0046**
Stddev	.0007	.0002	.0001
%RSD	77.64	35.74	1.361
#1	-.0013	.0003	.0046
#2	-.0013	.0007	.0046
#3	-.0001	.0005	.0047

Zoom In Zoom Out

Sample Name: FA43373-2F Acquired: 4/27/2017 16:42:52 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1567.5**	**4332.2**	**32363.**	**6918.2**
Stddev	6.9	11.1	67.	30.3
%RSD	.44299	.25519	.20824	.43747
#1	1562.5	4323.7	32329.	6884.4
#2	1564.7	4344.7	32441.	6927.7
#3	1575.5	4328.2	32320.	6942.6

Zoom In Zoom Out

Sample Name: FA43373-3F Acquired: 4/27/2017 16:47:18 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	**-.0006**	**.0042**	**.0019**	**.1776**	**.0000**	**10.63**	**-.0007**	**.0018**
Stddev	.0003	.0026	.0007	.0004	.000	.06	.0001	.0001
%RSD	56.54	61.30	35.29	.2228	316.6	.5391	8.551	5.758
#1	-.0009	.0020	.0023	.1775	.0000	10.62	-.0006	.0019
#2	-.0004	.0037	.0011	.1781	.0000	10.69	-.0007	.0017
#3	-.0004	.0071	.0022	.1773	.0000	10.58	-.0006	.0019

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	**-.0001**	**-.0007**	**58.84**	**.6173**	**5.250**	**1.542**	**.0001**	**31.27**
Stddev	.0002	.0004	.16	.0340	.018	.003	.0000	.06
%RSD	219.0	60.84	.2642	5.509	.3352	.1601	29.08	.1955
#1	.0001	-.0002	58.80	.6520	5.270	1.543	.0001	31.26
#2	-.0003	-.0010	59.02	.5840	5.243	1.544	.0001	31.34
#3	-.0001	-.0010	58.71	.6161	5.237	1.539	.0001	31.21

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	**.0026**	F **-.0074**	**.0018**	**-.0039**	**9.283**	**.0002**	**.0580**	**.0004**
Stddev	.0003	.0001	.0011	.0009	.025	.0005	.0001	.0001
%RSD	11.89	1.860	63.87	24.51	.2750	263.0	.1165	25.47
#1	.0029	-.0075	.0005	-.0040	9.268	-.0003	.0579	.0006
#2	.0025	-.0074	.0027	-.0048	9.269	.0006	.0579	.0004
#3	.0023	-.0073	.0021	-.0029	9.313	.0002	.0580	.0004

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0001**	**.0005**	**.0047**
Stddev	.0006	.0001	.0001
%RSD	515.6	20.61	1.782
#1	-.0003	.0004	.0048
#2	-.0001	.0006	.0047
#3	.0007	.0004	.0047

Zoom In Zoom Out

Sample Name: FA43373-3F Acquired: 4/27/2017 16:47:18 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1571.9**	**4314.6**	**32426.**	**6923.4**
Stddev	3.8	4.5	72.	45.5
%RSD	.23953	.10456	.22121	.65702
#1	1570.3	4318.7	32465.	6894.8
#2	1569.2	4315.3	32344.	6899.5
#3	1576.2	4309.8	32471.	6975.9

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 16:51:42 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2404**	**39.52**	**1.934**	**1.996**	**1.978**	**39.26**	**1.962**	**1.959**	**1.971**
Stddev	.0002	.02	.006	.003	.005	.09	.005	.004	.007
%RSD	.0808	.0614	.2948	.1546	.2314	.2409	.2320	.2181	.3823
#1	.2402	39.55	1.938	1.995	1.982	39.33	1.964	1.962	1.976
#2	.2406	39.50	1.928	1.999	1.980	39.16	1.956	1.954	1.962
#3	.2404	39.52	1.936	1.993	1.973	39.31	1.964	1.961	1.973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.947**	**39.93**	**39.20**	**39.87**	**1.966**	**1.932**	**39.13**	**1.950**	**1.938**
Stddev	.008	.11	.11	.18	.004	.006	.07	.006	.009
%RSD	.3991	.2665	.2684	.4560	.1892	.3058	.1785	.2847	.4901
#1	1.955	40.02	39.30	39.84	1.967	1.930	39.20	1.953	1.931
#2	1.944	39.81	39.09	39.70	1.961	1.928	39.14	1.943	1.933
#3	1.941	39.96	39.21	40.06	1.968	1.939	39.06	1.952	1.948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.934**	**1.948**	**1.828**	**1.968**	**2.000**	**1.975**	**1.938**	**1.941**	**1.949**
Stddev	.006	.010	.005	.002	.009	.006	.005	.007	.007
%RSD	.2880	.5354	.2578	.1159	.4718	.3053	.2354	.3770	.3391
#1	1.936	1.947	1.831	1.966	2.009	1.980	1.934	1.947	1.953
#2	1.927	1.938	1.823	1.969	2.001	1.968	1.937	1.933	1.941
#3	1.938	1.958	1.830	1.970	1.990	1.976	1.943	1.943	1.952
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 16:51:42 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1503.4**	**4259.1**	**32375.**	**6824.1**
Stddev	5.3	8.2	93.	37.0
%RSD	.35014	.19279	.28783	.54173
#1	1507.8	4257.0	32343.	6821.0
#2	1504.9	4268.1	32302.	6862.6
#3	1497.6	4252.1	32480.	6788.9

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 16:55:53 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0003**	**.0061**	**.0001**	**.0001**	**.0002**	**.0073**	**.0001**	**.0002**	**.0003**
Stddev	.0004	.0079	.0002	.0002	.0000	.0005	.0000	.0001	.0001
%RSD	152.1	128.8	190.6	140.5	26.03	6.424	28.88	64.58	26.20
#1	.0002	-.0025	.0001	.0003	.0002	.0079	.0001	.0003	.0003
#2	-.0005	.0129	-.0001	.0000	.0002	.0071	.0001	.0001	.0002
#3	-.0006	.0079	.0004	.0001	.0001	.0071	.0001	.0001	.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0004**	**.0168**	**.0078**	**-.0025**	**.0001**	F **.0023**	**.0173**	**.0000**	**-.0005**
Stddev	.0003	.0018	.0289	.0156	.0001	.0005	.0056	.0002	.0005
%RSD	68.00	10.52	372.9	627.8	42.52	23.18	32.44	721.6	119.8
#1	-.0008	.0186	-.0160	.0010	.0002	.0029	.0235	.0001	-.0004
#2	-.0004	.0165	.0400	.0111	.0001	.0021	.0156	.0001	.0000
#3	-.0002	.0151	-.0007	-.0196	.0002	.0019	.0127	-.0002	-.0010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.0004**	**.0007**	**.0005**	**.0002**	**.0008**	**.0005**	**.0001**	**.0001**
Stddev	.0006	.0027	.0002	.0005	.0001	.0000	.0004	.0001	.0001
%RSD	113.7	594.0	31.61	90.89	37.57	4.430	80.96	136.1	81.00
#1	.0004	-.0013	.0009	.0005	.0004	.0008	.0009	.0000	.0002
#2	.0000	-.0008	.0007	.0001	.0002	.0008	.0004	.0002	.0000
#3	.0011	.0035	.0005	.0010	.0002	.0007	.0001	.0000	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 16:55:53 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1579.5**	**4339.3**	**32029.**	**6785.2**
Stddev	.9	6.0	118.	31.1
%RSD	.05549	.13773	.36989	.45828
#1	1580.4	4343.8	31902.	6749.8
#2	1578.7	4341.7	32137.	6797.7
#3	1579.4	4332.5	32048.	6808.1

Zoom In Zoom Out

Sample Name: FA43373-5F Acquired: 4/27/2017 17:00:23 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0002**	**.0240**	**.0002**	**.1431**	**.0007**	**3.436**	**.0000**	**.0183**	**.0001**
Stddev	.0001	.0023	.0004	.0004	.0000	.010	.0000	.0001	.0001
%RSD	74.81	9.690	167.3	.2955	7.405	.2976	250.4	.3063	127.0
#1	-.0003	.0217	.0000	.1431	.0007	3.447	.0000	.0183	.0001
#2	-.0002	.0264	.0006	.1426	.0006	3.427	.0001	.0184	.0000
#3	.0000	.0239	.0000	.1434	.0007	3.434	.0000	.0182	.0002

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0010**	**5.847**	**.6121**	**3.197**	**.3509**	**.0006**	**16.82**	**.0220**	**-.0018**
Stddev	.0006	.014	.0249	.042	.0002	.0002	.04	.0000	.0002
%RSD	60.63	.2454	4.073	1.300	.0470	33.84	.2434	.1626	11.92
#1	.0007	5.854	.5938	3.234	.3511	.0006	16.87	.0220	-.0016
#2	.0006	5.831	.6020	3.152	.3507	.0007	16.79	.0219	-.0020
#3	.0016	5.857	.6405	3.205	.3509	.0004	16.81	.0220	-.0018

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0007**	**.0018**	**8.428**	**.0000**	**.0273**	**.0005**	**.0011**	**.0001**	**.0428**
Stddev	.0004	.0005	.006	.0002	.0001	.0001	.0016	.0001	.0001
%RSD	56.71	26.43	.0774	1201.	.2023	22.61	139.3	100.4	.1437
#1	-.0009	.0021	8.427	.0002	.0273	.0004	.0021	.0001	.0429
#2	-.0003	.0021	8.422	.0001	.0272	.0004	-.0007	.0000	.0427
#3	-.0011	.0013	8.435	-.0003	.0273	.0006	.0020	.0001	.0428

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1602.9**	**4366.0**	**32578.**	**6943.3**
Stddev	4.0	5.9	32.	25.8
%RSD	.25114	.13445	.09722	.37109
#1	1607.5	4360.4	32543.	6919.3
#2	1601.4	4372.2	32590.	6940.0
#3	1599.9	4365.5	32603.	6970.5

Zoom In Zoom Out

Sample Name: MP32059-MB1 Acquired: 4/27/2017 17:04:48 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0004**	**.0163**	**-.0019**	**.0000**	**.0000**	**.0271**	**.0000**	**-.0001**	**.0004**
Stddev	.0003	.0054	.0002	.000	.000	.0005	.000	.0001	.0004
%RSD	67.98	33.37	11.94	1470.	116.0	1.732	66.49	97.83	86.77
#1	-.0005	.0190	-.0020	-.0001	.0000	.0266	-.0001	-.0001	.0000
#2	-.0005	.0100	-.0016	-.0001	.0000	.0275	.0000	.0000	.0005
#3	-.0001	.0198	-.0020	.0002	.0000	.0271	.0000	.0000	.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0274**	**.0137**	**.0069**	**.0004**	**.0005**	**.0248**	**.0001**	**.0000**
Stddev	.0006	.0014	.0053	.0116	.0000	.0001	.0058	.0001	.0009
%RSD	583.5	5.087	38.45	168.7	1.895	24.93	23.58	70.33	1840.
#1	-.0001	.0282	.0194	.0015	.0004	.0005	.0185	.0002	.0002
#2	.0005	.0283	.0127	.0202	.0004	.0003	.0259	.0001	-.0009
#3	-.0007	.0258	.0090	-.0011	.0004	.0006	.0300	.0001	.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0009**	**.0011**	**.0124**	**.0215**	**.0002**	**.0009**	**-.0014**	**-.0001**	**.0013**
Stddev	.0006	.0011	.0007	.0002	.0000	.0001	.0016	.0003	.0001
%RSD	66.36	99.11	5.936	1.052	23.76	6.039	107.4	384.0	4.044
#1	.0014	.0021	.0122	.0218	.0002	.0009	.0003	.0000	.0013
#2	.0011	-.0001	.0132	.0216	.0002	.0009	-.0027	-.0004	.0013
#3	.0002	.0013	.0117	.0213	.0001	.0008	-.0019	.0002	.0014
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: MP32059-MB1 Acquired: 4/27/2017 17:04:48 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1590.2**	**4350.4**	**32565.**	**7009.0**
Stddev	3.0	5.0	33.	42.7
%RSD	.18553	.11392	.10109	.60944
#1	1591.8	4356.1	32533.	6990.4
#2	1591.9	4346.9	32564.	6978.8
#3	1586.8	4348.2	32598.	7057.9

Zoom In Zoom Out

Sample Name: MP32059-B1 Acquired: 4/27/2017 17:09:21 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0447**	**27.84**	**1.926**	**2.056**	**.0512**	**26.00**	**.0492**	**.4930**	**.2058**
Stddev	.0004	.07	.003	.004	.0001	.10	.0001	.0004	.0011
%RSD	.8954	.2678	.1713	.2104	.2516	.3804	.1253	.0802	.5436
#1	.0442	27.84	1.925	2.060	.0513	25.89	.0493	.4925	.2064
#2	.0450	27.92	1.924	2.057	.0513	26.03	.0492	.4932	.2045
#3	.0449	27.77	1.930	2.051	.0511	26.08	.0493	.4933	.2064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2508**	**27.07**	**25.74**	**25.85**	**.5086**	**.5199**	**25.49**	**.4994**	**.4772**
Stddev	.0003	.08	.05	.19	.0011	.0014	.04	.0003	.0015
%RSD	.1106	.2882	.1894	.7197	.2141	.2641	.1607	.0513	.3130
#1	.2512	26.99	25.70	25.64	.5078	.5185	25.46	.4993	.4786
#2	.2508	27.15	25.79	25.99	.5083	.5198	25.53	.4996	.4775
#3	.2506	27.07	25.71	25.92	.5098	.5213	25.47	.4991	.4756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.4849**	**1.898**	**.0246**	**.5377**	**.5195**	**.5163**	**1.899**	**.4848**	**.4873**
Stddev	.0015	.004	.0005	.0009	.0005	.0013	.006	.0011	.0006
%RSD	.3142	.2099	2.132	.1587	.1044	.2568	.3408	.2170	.1140
#1	.4849	1.894	.0248	.5368	.5196	.5159	1.906	.4838	.4872
#2	.4834	1.896	.0250	.5384	.5201	.5153	1.899	.4859	.4879
#3	.4865	1.902	.0240	.5379	.5190	.5178	1.893	.4845	.4868
Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: MP32059-B1 Acquired: 4/27/2017 17:09:21 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1539.3**	**4287.8**	**32110.**	**6822.0**
Stddev	5.5	4.7	30.	62.5
%RSD	.35990	.10879	.09212	.91580
#1	1533.3	4288.8	32130.	6894.1
#2	1540.3	4291.9	32076.	6788.1
#3	1544.2	4282.7	32124.	6783.9

Zoom In Zoom Out

Sample Name: FA43368-1 Acquired: 4/27/2017 17:13:34 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0004**	**154.3**	**.0193**	**1.075**	**.0065**	**129.6**	**.0190**	**.0081**	**.3198**
Stddev	.0001	.5	.0013	.001	.0000	1.4	.0001	.0001	.0004
%RSD	14.77	.3231	6.537	.0909	.3426	1.066	.4195	1.487	.1115
#1	-.0004	154.3	.0184	1.074	.0065	128.1	.0189	.0080	.3194
#2	-.0003	154.8	.0187	1.076	.0065	130.9	.0190	.0081	.3201
#3	-.0005	153.8	.0207	1.074	.0065	129.9	.0190	.0082	.3197

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0984**	**72.42**	**4.476**	**8.025**	**.5235**	**.0008**	**.6827**	**.0399**	**.2273**
Stddev	.0007	.23	.022	.039	.0025	.0002	.0044	.0002	.0021
%RSD	.7495	.3165	.4940	.4865	.4738	21.30	.6480	.4116	.9058
#1	.0983	72.34	4.462	8.064	.5240	.0006	.6777	.0397	.2271
#2	.0978	72.68	4.501	8.027	.5256	.0010	.6846	.0400	.2254
#3	.0993	72.25	4.464	7.986	.5208	.0008	.6859	.0400	.2295

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0019**	**.0006**	**1.038**	**.0181**	**1.563**	**.2433**	**-.0035**	**.1567**	**2.497**
Stddev	.0008	.0015	.001	.0004	.004	.0002	.0013	.0003	.004
%RSD	42.44	238.3	.1202	2.153	.2677	.1005	37.29	.2081	.1680
#1	-.0010	.0022	1.039	.0184	1.562	.2435	-.0028	.1568	2.496
#2	-.0020	.0004	1.037	.0177	1.568	.2435	-.0027	.1569	2.501
#3	-.0026	-.0007	1.037	.0182	1.560	.2431	-.0050	.1563	2.493

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1489.4**	**6419.6**	**47820.**	**10324.**
Stddev	1.1	16.3	122.	57.
%RSD	.07282	.25407	.25586	.54866
#1	1489.0	6401.5	47727.	10339.
#2	1488.5	6424.0	47775.	10262.
#3	1490.6	6433.2	47959.	10372.

Zoom In Zoom Out

Sample Name: MP32059-D1 Acquired: 4/27/2017 17:18:01 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0006**	**152.2**	**.0274**	**1.110**	**.0083**	**110.5**	**.0192**	**.0079**	**.3660**
Stddev	.0001	.5	.0015	.002	.0000	1.0	.0001	.0000	.0011
%RSD	19.55	.3231	5.441	.1376	.1944	.8924	.3361	.5573	.2939
#1	-.0007	152.7	.0280	1.112	.0083	111.4	.0191	.0079	.3652
#2	-.0005	152.3	.0285	1.109	.0083	110.5	.0192	.0078	.3672
#3	-.0005	151.7	.0257	1.110	.0083	109.4	.0193	.0079	.3657

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0994**	**106.2**	**4.234**	**7.518**	**.5461**	**.0009**	**.6235**	**.0393**	**.2320**
Stddev	.0005	.3	.018	.047	.0008	.0001	.0035	.0002	.0006
%RSD	.5143	.2771	.4181	.6309	.1417	11.22	.5536	.4419	.2422
#1	.0999	106.4	4.253	7.537	.5452	.0008	.6270	.0392	.2315
#2	.0995	106.3	4.217	7.553	.5465	.0008	.6234	.0392	.2318
#3	.0989	105.9	4.232	7.464	.5466	.0010	.6201	.0395	.2326

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0015**	**-.0022**	**.9813**	**.0178**	**1.595**	**.2066**	**-.0036**	**.2424**	**2.500**
Stddev	.0024	.0010	.0005	.0002	.005	.0002	.0013	.0004	.004
%RSD	161.5	46.71	.0499	1.012	.2960	.1024	36.57	.1661	.1818
#1	-.0016	-.0012	.9819	.0176	1.596	.2066	-.0028	.2425	2.501
#2	-.0038	-.0021	.9809	.0177	1.599	.2068	-.0028	.2427	2.495
#3	.0010	-.0032	.9813	.0180	1.590	.2064	-.0051	.2420	2.503

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1483.7**	**6533.9**	**48939.**	**10563.**
Stddev	4.7	7.7	176.	86.
%RSD	.31556	.11845	.35890	.81852
#1	1489.0	6529.2	49044.	10472.
#2	1481.4	6529.7	48737.	10573.
#3	1480.5	6542.9	49038.	10644.

Zoom In Zoom Out

Sample Name: MP32059-SD1 Acquired: 4/27/2017 17:22:29 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0016**	**220.8**	**.0309**	**1.555**	**.0091**	**191.9**	**.0276**	**.0123**	**.4661**
Stddev	.0004	1.2	.0012	.011	.0001	.5	.0002	.0007	.0020
%RSD	21.95	.5444	3.782	.6970	1.293	.2853	.6506	5.698	.4393
#1	-.0020	222.2	.0309	1.567	.0092	192.5	.0274	.0117	.4685
#2	-.0014	220.3	.0298	1.547	.0092	191.8	.0276	.0131	.4648
#3	-.0014	220.0	.0322	1.550	.0090	191.5	.0277	.0122	.4652

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1338**	**107.9**	**6.365**	**11.82**	**.7677**	**.0006**	**1.056**	**.0591**	**.2224**
Stddev	.0019	.4	.080	.15	.0015	.0008	.012	.0004	.0036
%RSD	1.423	.3264	1.251	1.249	.2005	132.3	1.116	.7273	1.610
#1	.1360	108.3	6.294	11.98	.7690	.0011	1.065	.0589	.2187
#2	.1324	107.7	6.451	11.69	.7680	-.0003	1.059	.0596	.2259
#3	.1331	107.7	6.350	11.81	.7660	.0010	1.043	.0589	.2225

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0027**	**.0018**	**1.487**	**.0258**	**2.261**	**.3524**	**.0050**	**.2252**	**3.785**
Stddev	.0011	.0065	.004	.0021	.008	.0026	.0081	.0020	.005
%RSD	41.96	352.8	.2791	8.260	.3632	.7348	161.7	.8869	.1438
#1	-.0027	-.0014	1.483	.0234	2.270	.3553	.0135	.2244	3.781
#2	-.0038	.0093	1.487	.0269	2.260	.3505	-.0028	.2238	3.782
#3	-.0016	-.0024	1.491	.0272	2.253	.3514	.0044	.2275	3.791

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1577.5**	**4802.5**	**35585.**	**7620.2**
Stddev	5.5	13.7	62.	51.5
%RSD	.34899	.28583	.17358	.67534
#1	1577.7	4801.4	35523.	7570.0
#2	1582.9	4816.8	35646.	7672.8
#3	1571.9	4789.4	35585.	7617.9

Zoom In Zoom Out

Sample Name: MP32059-PS1 Acquired: 4/27/2017 17:26:51 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0308**	**153.7**	**.0855**	**1.238**	**.0403**	**131.2**	**.0511**	**.0404**	**.3483**
Stddev	.0003	.1	.0010	.004	.0002	.9	.0001	.0001	.0003
%RSD	.9699	.0634	1.206	.3488	.4101	.7200	.1735	.2662	.0922
#1	.0306	153.7	.0851	1.234	.0402	132.0	.0511	.0403	.3487
#2	.0306	153.7	.0846	1.242	.0403	130.1	.0512	.0405	.3480
#3	.0311	153.9	.0866	1.239	.0405	131.5	.0511	.0405	.3483

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.1685**	**73.15**	**11.18**	**11.13**	**.5520**	**.0692**	**7.430**	**.1039**	**.2735**
Stddev	.0006	.17	.03	.05	.0006	.0002	.015	.0001	.0005
%RSD	.3809	.2340	.3057	.4317	.1104	.3558	.2001	.1248	.1653
#1	.1692	73.08	11.14	11.09	.5520	.0695	7.413	.1038	.2737
#2	.1682	73.02	11.21	11.11	.5514	.0691	7.438	.1040	.2730
#3	.1680	73.34	11.19	11.18	.5526	.0690	7.440	.1040	.2738

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0669**	**.0641**	**1.047**	**.0500**	**1.576**	**.3074**	**.0927**	**.1880**	**2.634**
Stddev	.0009	.0010	.001	.0005	.001	.0001	.0011	.0002	.001
%RSD	1.319	1.519	.1067	1.068	.0525	.0314	1.137	.1002	.0432
#1	.0665	.0634	1.046	.0496	1.576	.3073	.0938	.1877	2.633
#2	.0680	.0652	1.048	.0498	1.577	.3075	.0927	.1881	2.635
#3	.0664	.0636	1.047	.0506	1.576	.3074	.0917	.1881	2.635

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1479.9**	**6363.7**	**47647.**	**10321.**
Stddev	.9	6.6	98.	66.
%RSD	.06026	.10410	.20499	.63715
#1	1479.9	6371.1	47536.	10295.
#2	1479.0	6358.3	47688.	10396.
#3	1480.8	6361.8	47718.	10273.

Zoom In Zoom Out

Sample Name: MP32059-S1 Acquired: 4/27/2017 17:31:16 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0312**	**197.2**	**1.250**	**2.347**	**.0397**	**136.3**	**.0554**	**.3255**	**.4719**
Stddev	.0002	1.8	.002	.006	.0000	.3	.0001	.0005	.0010
%RSD	.7165	.9335	.1687	.2680	.1250	.2037	.2077	.1679	.2052
#1	.0313	196.1	1.250	2.353	.0397	136.6	.0555	.3249	.4726
#2	.0314	196.1	1.248	2.347	.0396	136.2	.0553	.3255	.4723
#3	.0310	199.3	1.252	2.340	.0396	136.1	.0554	.3260	.4708

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2868**	**90.74**	**22.26**	**25.70**	**.8885**	**.2851**	**17.45**	**.3690**	**.7114**
Stddev	.0011	.14	.08	.16	.0018	.0005	.05	.0003	.0016
%RSD	.3678	.1532	.3609	.6399	.2065	.1879	.3011	.0836	.2233
#1	.2879	90.71	22.33	25.59	.8880	.2849	17.51	.3694	.7126
#2	.2857	90.63	22.17	25.61	.8906	.2846	17.41	.3688	.7096
#3	.2869	90.90	22.29	25.89	.8870	.2856	17.44	.3690	.7120

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1123**	**1.222**	**1.078**	**.3328**	**1.769**	**.4179**	**1.871**	**.4728**	**3.735**
Stddev	.0016	.001	.002	.0009	.004	.0005	.007	.0007	.007
%RSD	1.459	.0997	.1398	.2739	.2543	.1123	.3874	.1437	.1902
#1	.1125	1.224	1.077	.3326	1.774	.4179	1.872	.4720	3.742
#2	.1106	1.221	1.077	.3320	1.765	.4174	1.864	.4732	3.727
#3	.1139	1.222	1.079	.3337	1.768	.4184	1.878	.4732	3.735

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1439.9**	**6197.2**	**46581.**	**10101.**
Stddev	3.1	2.8	68.	45.
%RSD	.21375	.04589	.14699	.44790
#1	1441.5	6197.9	46512.	10128.
#2	1441.9	6199.7	46582.	10127.
#3	1436.3	6194.1	46649.	10049.

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: MP32059-S2 Acquired: 4/27/2017 17:35:45 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**.0298**	**209.1**	**1.220**	**2.372**	**.0392**	**216.6**	**.0543**	**.3147**	**.4944**
Stddev	.0003	1.0	.001	.006	.0001	1.2	.0001	.0001	.0022
%RSD	.9984	.4670	.0771	.2660	.2135	.5719	.2346	.0414	.4461
#1	.0300	208.4	1.220	2.377	.0393	217.4	.0541	.3148	.4937
#2	.0295	210.2	1.218	2.375	.0391	215.2	.0544	.3147	.4927
#3	.0299	208.6	1.220	2.365	.0391	217.3	.0543	.3145	.4969

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.2801**	**97.31**	**23.19**	**27.00**	**.9861**	**.2735**	**17.19**	**.3622**	**.7315**
Stddev	.0003	.29	.03	.10	.0026	.0006	.02	.0011	.0010
%RSD	.1126	.2955	.1301	.3885	.2645	.2185	.1103	.3025	.1317
#1	.2798	97.61	23.20	27.13	.9859	.2733	17.20	.3625	.7319
#2	.2804	97.27	23.21	26.95	.9837	.2730	17.19	.3632	.7304
#3	.2802	97.04	23.15	26.94	.9889	.2742	17.17	.3610	.7322

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.1027**	**1.192**	**1.137**	**.3238**	**1.925**	**.4004**	**1.866**	**.4749**	**3.107**
Stddev	.0004	.002	.000	.0009	.030	.0025	.007	.0018	.004
%RSD	.3947	.1757	.0041	.2658	1.538	.6163	.3765	.3742	.1414
#1	.1032	1.192	1.137	.3230	1.935	.3979	1.860	.4742	3.103
#2	.1027	1.189	1.137	.3247	1.891	.4006	1.863	.4736	3.111
#3	.1024	1.194	1.137	.3238	1.947	.4028	1.874	.4769	3.106

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1415.6**	**6325.1**	**47678.**	**10425.**
Stddev	.7	9.7	179.	23.
%RSD	.05275	.15327	.37580	.22323
#1	1416.4	6326.2	47749.	10398.
#2	1414.9	6314.9	47811.	10437.
#3	1415.4	6334.2	47475.	10440.

Zoom In Zoom Out

Sample Name: FA43368-2 Acquired: 4/27/2017 17:40:23 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0016**	**213.1**	**.0258**	**1.637**	**.0080**	**49.34**	**.0048**	**.0086**	**.4558**
Stddev	.0001	1.4	.0003	.004	.0000	.10	.0001	.0001	.0012
%RSD	8.436	.6699	1.049	.2391	.1478	.2042	1.098	.9609	.2595
#1	-.0018	212.4	.0261	1.640	.0080	49.45	.0048	.0087	.4572
#2	-.0015	214.7	.0259	1.639	.0080	49.30	.0049	.0085	.4552
#3	-.0016	212.1	.0255	1.633	.0080	49.26	.0049	.0086	.4551

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0210**	**102.5**	**5.288**	**9.520**	**.2316**	**.0009**	**.8511**	**.0486**	**.3005**
Stddev	.0002	.3	.034	.073	.0005	.0002	.0024	.0002	.0006
%RSD	1.180	.2458	.6418	.7661	.2051	25.50	.2876	.3276	.1905
#1	.0212	102.8	5.327	9.561	.2322	.0011	.8515	.0487	.3001
#2	.0211	102.3	5.266	9.436	.2313	.0007	.8534	.0484	.3002
#3	.0207	102.4	5.271	9.564	.2315	.0008	.8485	.0485	.3011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0030**	**-.0019**	**.8020**	**.0182**	**2.397**	**.1669**	**-.0059**	**.2237**	**.6443**
Stddev	.0013	.0019	.0010	.0005	.035	.0006	.0018	.0008	.0023
%RSD	42.77	99.63	.1266	2.540	1.444	.3684	30.09	.3384	.3613
#1	-.0040	-.0008	.8011	.0188	2.422	.1676	-.0057	.2245	.6467
#2	-.0036	-.0040	.8031	.0179	2.358	.1664	-.0043	.2231	.6421
#3	-.0016	-.0008	.8017	.0180	2.412	.1667	-.0078	.2234	.6439

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1484.1**	**7520.3**	**55809.**	**12067.**
Stddev	6.7	16.5	49.	59.
%RSD	.45069	.21911	.08772	.49027
#1	1490.2	7526.9	55830.	12012.
#2	1477.0	7501.5	55844.	12129.
#3	1485.1	7532.4	55753.	12060.

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 17:44:57 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2479**	**40.45**	**2.013**	**2.043**	**2.039**	**40.54**	**2.034**	**2.027**	**2.040**
Stddev	.0020	.10	.002	.004	.002	.16	.002	.000	.008
%RSD	.8256	.2560	.0931	.2036	.1132	.3911	.0759	.0194	.3716
#1	.2499	40.56	2.015	2.045	2.042	40.70	2.035	2.028	2.048
#2	.2458	40.41	2.011	2.047	2.039	40.38	2.032	2.027	2.040
#3	.2480	40.36	2.012	2.039	2.037	40.53	2.035	2.027	2.033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.010**	**41.08**	**40.42**	**40.64**	**2.040**	**1.998**	**40.25**	**2.027**	**1.996**
Stddev	.008	.07	.07	.20	.004	.003	.05	.003	.011
%RSD	.3951	.1764	.1722	.4866	.2109	.1254	.1191	.1224	.5244
#1	2.019	41.17	40.50	40.85	2.045	1.995	40.30	2.029	2.007
#2	2.005	41.04	40.36	40.46	2.036	1.998	40.24	2.024	1.986
#3	2.005	41.04	40.41	40.61	2.040	2.000	40.20	2.028	1.994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.010**	**2.021**	**1.900**	**2.032**	**2.071**	**2.057**	**2.007**	**2.017**	**2.024**
Stddev	.005	.003	.001	.007	.006	.008	.007	.005	.004
%RSD	.2514	.1535	.0544	.3379	.2736	.3756	.3658	.2751	.2102
#1	2.006	2.022	1.899	2.038	2.074	2.066	2.012	2.023	2.028
#2	2.016	2.022	1.901	2.024	2.075	2.055	1.998	2.015	2.019
#3	2.009	2.017	1.899	2.032	2.065	2.051	2.011	2.013	2.024
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 17:44:57 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1468.9**	**4136.5**	**31384.**	**6685.3**
Stddev	2.7	4.1	138.	41.6
%RSD	.18661	.09925	.43913	.62180
#1	1465.9	4134.8	31248.	6645.5
#2	1469.9	4133.5	31523.	6728.5
#3	1471.1	4141.2	31382.	6682.0

SGS ACCUTEST FA43270

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 17:49:07 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0004**	**.0104**	**-.0002**	**.0000**	**.0001**	**.0052**	**.0001**	**.0001**	**.0000**
Stddev	.0002	.0058	.0007	.000	.0000	.0015	.0000	.0001	.0004
%RSD	49.79	56.13	311.5	367.4	26.99	28.10	49.21	181.3	3106.
#1	-.0003	.0040	.0006	.0000	.0001	.0063	.0001	.0002	-.0003
#2	-.0003	.0154	-.0005	.0001	.0001	.0036	.0001	.0000	.0004
#3	-.0006	.0118	-.0007	-.0002	.0001	.0059	.0000	.0000	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**.0145**	**.0228**	**.0009**	**.0001**	F **.0022**	**.0071**	**.0002**	**.0000**
Stddev	.0001	.0007	.0295	.0120	.0000	.0004	.0022	.0001	.000
%RSD	80.18	4.948	129.7	1352.	3.854	19.13	31.12	46.58	995.9
#1	.0002	.0138	.0330	.0053	.0001	.0027	.0047	.0002	-.0005
#2	.0000	.0152	.0459	-.0127	.0001	.0023	.0090	.0003	.0004
#3	.0003	.0144	-.0105	.0100	.0001	.0018	.0075	.0001	-.0001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**.0016**	**.0007**	**.0001**	**.0002**	**.0006**	**.0011**	**.0001**	**.0001**
Stddev	.0009	.0014	.0002	.0002	.0001	.0000	.0019	.0001	.0001
%RSD	1113.	87.26	28.46	177.6	42.01	4.758	179.0	89.38	77.74
#1	-.0005	.0025	.0009	.0003	.0002	.0006	.0008	.0002	.0001
#2	.0011	.0022	.0006	-.0001	.0001	.0005	-.0007	.0002	.0000
#3	-.0004	.0000	.0005	.0001	.0001	.0006	.0031	.0000	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 17:49:07 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1569.1**	**4285.9**	**31718.**	**6781.7**
Stddev	2.6	3.2	105.	44.1
%RSD	.16637	.07461	.33178	.65099
#1	1567.1	4284.5	31815.	6731.3
#2	1572.1	4289.6	31606.	6799.9
#3	1568.2	4283.7	31732.	6813.8

Zoom In Zoom Out

Sample Name: FA43342-1 Acquired: 4/27/2017 17:53:39 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0050**	**312.7**	**.2297**	**3.572**	**.0132**	**756.3**	**.0005**	**.1989**	**.5629**
Stddev	.0015	.8	.0016	.004	.0003	5.9	.0003	.0006	.0023
%RSD	30.52	.2671	.7144	.1157	2.199	.7859	56.74	.3127	.4159
#1	-.0068	311.8	.2279	3.567	.0135	756.6	.0005	.1993	.5653
#2	-.0043	313.3	.2304	3.574	.0129	762.0	.0003	.1993	.5628
#3	-.0040	313.1	.2309	3.575	.0133	750.1	.0009	.1982	.5606

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.5318**	**454.8**	**81.47**	**205.6**	**7.821**	**.0115**	**16.50**	**.4458**	**.2035**
Stddev	.0028	.4	.17	.1	.042	.0012	.07	.0005	.0077
%RSD	.5282	.0908	.2116	.0709	.5341	10.45	.4488	.1114	3.777
#1	.5348	454.4	81.36	205.7	7.869	.0127	16.47	.4461	.1948
#2	.5314	455.2	81.67	205.6	7.793	.0114	16.58	.4462	.2062
#3	.5293	454.7	81.39	205.4	7.801	.0103	16.44	.4453	.2094

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0034**	**-.0182**	**1.472**	**.0308**	**4.026**	**8.431**	**.0069**	**.8881**	**1.051**
Stddev	.0041	.0036	.001	.0006	.005	.037	.0048	.0019	.001
%RSD	120.8	19.70	.0556	1.973	.1352	.4356	69.33	.2126	.1065
#1	.0081	-.0143	1.471	.0301	4.021	8.464	.0045	.8901	1.052
#2	.0001	-.0213	1.472	.0311	4.024	8.391	.0123	.8877	1.049
#3	.0021	-.0191	1.472	.0312	4.032	8.439	.0038	.8864	1.051

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1485.6**	**4561.7**	**34683.**	**7359.1**
Stddev	3.9	10.4	95.	23.0
%RSD	.26414	.22820	.27328	.31214
#1	1489.0	4570.3	34574.	7345.8
#2	1486.5	4564.7	34746.	7345.8
#3	1481.3	4550.2	34729.	7385.6

Zoom In Zoom Out

Sample Name: FA43342-2 Acquired: 4/27/2017 17:58:07 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0034**	**362.5**	**.2149**	**3.839**	**.0147**	**686.8**	**.0016**	**.2147**	**.5879**
Stddev	.0014	.4	.0010	.008	.0002	6.7	.0004	.0009	.0010
%RSD	40.94	.0984	.4770	.2103	1.465	.9792	23.28	.4423	.1724
#1	-.0049	362.7	.2144	3.846	.0145	679.4	.0013	.2137	.5876
#2	-.0029	362.1	.2143	3.830	.0146	692.6	.0015	.2147	.5870
#3	-.0023	362.8	.2161	3.840	.0149	688.3	.0020	.2156	.5890

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.5789**	**455.2**	**96.99**	**258.6**	**10.08**	**.0084**	**9.016**	**.5129**	**.2161**
Stddev	.0019	.1	.10	.3	.01	.0002	.020	.0012	.0036
%RSD	.3276	.0184	.1019	.1348	.1450	2.073	.2253	.2268	1.644
#1	.5777	455.1	97.08	258.9	10.10	.0083	9.022	.5116	.2137
#2	.5811	455.2	96.88	258.2	10.08	.0086	9.033	.5133	.2145
#3	.5778	455.2	97.02	258.7	10.08	.0083	8.994	.5138	.2202

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0039**	**-.0149**	**1.184**	**.0254**	**3.659**	**7.675**	**.0036**	**.7933**	**1.173**
Stddev	.0004	.0136	.002	.0022	.005	.014	.0014	.0011	.004
%RSD	11.06	91.59	.1405	8.480	.1258	.1865	38.64	.1449	.2974
#1	.0043	-.0092	1.185	.0262	3.665	7.674	.0023	.7945	1.169
#2	.0035	-.0050	1.183	.0270	3.658	7.661	.0051	.7922	1.176
#3	.0038	-.0305	1.185	.0229	3.656	7.689	.0035	.7931	1.174

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1480.0**	**4576.3**	**34777.**	**7418.6**
Stddev	2.5	4.2	16.	17.9
%RSD	.17127	.09275	.04723	.24176
#1	1482.3	4579.7	34759.	7433.9
#2	1477.3	4577.8	34778.	7398.9
#3	1480.5	4571.6	34792.	7423.1

Zoom In Zoom Out

Sample Name: FA43342-3 Acquired: 4/27/2017 18:02:36 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 5.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0019**	**260.7**	**.1828**	**2.335**	**.0103**	**392.1**	**.0018**	**.1698**	**.4905**
Stddev	.0018	1.2	.0032	.008	.0004	1.7	.0004	.0005	.0021
%RSD	94.01	.4489	1.731	.3309	3.664	.4299	21.19	.3002	.4199
#1	-.0038	262.0	.1859	2.344	.0100	393.7	.0015	.1699	.4898
#2	-.0013	260.1	.1828	2.332	.0107	390.3	.0017	.1693	.4929
#3	-.0005	260.0	.1796	2.330	.0101	392.2	.0022	.1703	.4889

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.4164**	**391.1**	**68.20**	**143.1**	**7.307**	**.0086**	**5.968**	**.3883**	**.1660**
Stddev	.0045	1.5	.25	1.1	.013	.0004	.024	.0019	.0025
%RSD	1.076	.3813	.3642	.7361	.1816	4.357	.4001	.4949	1.487
#1	.4194	392.7	68.47	143.9	7.294	.0086	5.970	.3892	.1669
#2	.4112	389.7	68.14	141.9	7.320	.0082	5.943	.3861	.1632
#3	.4186	390.9	67.99	143.5	7.306	.0089	5.990	.3896	.1678

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0042**	**-.0173**	**1.509**	**.0326**	**1.754**	**7.694**	**-.0029**	**.7413**	**.8788**
Stddev	.0034	.0096	.004	.0008	.004	.018	.0056	.0037	.0041
%RSD	81.28	55.10	.2696	2.362	.2146	.2287	193.3	.5046	.4687
#1	.0005	-.0081	1.506	.0320	1.758	7.682	.0024	.7371	.8797
#2	.0048	-.0272	1.508	.0322	1.751	7.714	-.0087	.7442	.8743
#3	.0072	-.0167	1.514	.0335	1.754	7.685	-.0023	.7425	.8824

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1513.6**	**4519.3**	**33956.**	**7276.9**
Stddev	1.2	10.9	50.	46.4
%RSD	.07970	.24048	.14797	.63813
#1	1513.0	4516.5	33908.	7235.7
#2	1515.0	4531.3	33952.	7327.2
#3	1512.8	4510.1	34008.	7267.8

Zoom In Zoom Out

Sample Name: FA43152-5R Acquired: 4/27/2017 18:06:55 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0009**	**27.57**	**.0086**	**.0680**	**.0011**	**7.028**	**-.0001**	**.0023**	**.0340**
Stddev	.0001	.07	.0002	.0001	.0000	.027	.0000	.0000	.0003
%RSD	10.35	.2362	2.716	.1928	3.457	.3889	9.078	2.122	.9016
#1	-.0008	27.49	.0083	.0680	.0011	7.003	-.0001	.0024	.0341
#2	-.0008	27.60	.0086	.0678	.0011	7.057	-.0001	.0023	.0336
#3	-.0010	27.62	.0088	.0681	.0011	7.024	-.0001	.0023	.0342

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0004**	**11.16**	**.3963**	**.8009**	**.1207**	**.0009**	**.1483**	**.0057**	**.0490**
Stddev	.0001	.04	.0240	.0285	.0003	.0000	.0018	.0001	.0010
%RSD	21.03	.3934	6.062	3.563	.2266	4.985	1.210	2.613	2.118
#1	.0005	11.11	.3766	.7946	.1210	.0009	.1503	.0056	.0500
#2	.0004	11.18	.3893	.7761	.1205	.0009	.1476	.0059	.0490
#3	.0004	11.19	.4231	.8321	.1206	.0010	.1469	.0056	.0479

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0009**	**.0015**	**.8864**	**.0184**	**.0459**	**.9634**	**-.0018**	**.0483**	**.0074**
Stddev	.0014	.0005	.0013	.0006	.0001	.0051	.0004	.0003	.0001
%RSD	158.6	31.14	.1454	3.205	.1845	.5283	24.20	.6465	.8839
#1	-.0013	.0011	.8857	.0177	.0458	.9681	-.0014	.0485	.0074
#2	.0007	.0013	.8878	.0185	.0459	.9580	-.0018	.0480	.0073
#3	-.0020	.0020	.8855	.0189	.0460	.9641	-.0023	.0485	.0073

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1596.6**	**4615.7**	**34466.**	**7421.5**
Stddev	.4	2.1	203.	53.0
%RSD	.02415	.04594	.58763	.71410
#1	1597.0	4613.7	34266.	7482.2
#2	1596.2	4615.4	34671.	7384.5
#3	1596.7	4617.9	34461.	7397.8

Zoom In Zoom Out

Sample Name: FA43152-6R Acquired: 4/27/2017 18:11:21 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0008**	**8.164**	**.0063**	**.0422**	**.0001**	**2.187**	**-.0001**	**.0008**	**.0141**
Stddev	.0002	.025	.0003	.0003	.0001	.006	.0000	.0001	.0001
%RSD	18.60	.3106	4.559	.6506	44.95	.2873	14.56	6.507	.8453
#1	-.0008	8.136	.0061	.0423	.0001	2.183	-.0001	.0009	.0139
#2	-.0010	8.186	.0066	.0418	.0002	2.194	-.0001	.0008	.0141
#3	-.0007	8.169	.0063	.0423	.0001	2.183	-.0001	.0008	.0141

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.0034**	**4.299**	**.1732**	**.3673**	**.0495**	**.0010**	**.4612**	**.0054**	**.0533**
Stddev	.0002	.011	.0147	.0073	.0002	.0002	.0018	.0003	.0005
%RSD	4.683	.2598	8.503	1.977	.3295	16.03	.3954	5.060	.9065
#1	.0034	4.286	.1829	.3717	.0495	.0010	.4595	.0051	.0529
#2	.0035	4.304	.1563	.3590	.0494	.0008	.4608	.0057	.0538
#3	.0032	4.307	.1806	.3714	.0497	.0012	.4631	.0053	.0531

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0002**	**.0028**	**.8747**	**.0193**	**.0215**	**.9810**	**-.0028**	**.0226**	**.0371**
Stddev	.0003	.0014	.0013	.0003	.0000	.0023	.0007	.0003	.0001
%RSD	128.8	48.36	.1523	1.561	.1686	.2297	24.79	1.376	.2988
#1	-.0003	.0018	.8744	.0196	.0215	.9784	-.0036	.0223	.0370
#2	.0001	.0023	.8736	.0190	.0215	.9819	-.0023	.0229	.0372
#3	-.0004	.0043	.8762	.0192	.0216	.9826	-.0026	.0226	.0371

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1584.3**	**4488.8**	**33648.**	**7272.3**
Stddev	4.7	7.1	118.	31.3
%RSD	.29373	.15784	.35020	.42978
#1	1580.2	4485.8	33668.	7307.0
#2	1589.4	4496.9	33755.	7246.4
#3	1583.2	4483.7	33521.	7263.5

Zoom In Zoom Out

Sample Name: FA43152-7R Acquired: 4/27/2017 18:15:43 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	**-.0006**	**17.87**	**.0061**	**.0589**	**.0006**	**2.616**	**-.0002**	**.0018**	**.0254**
Stddev	.0001	.09	.0009	.0004	.0000	.010	.0000	.0001	.0002
%RSD	22.58	.5217	13.95	.6743	7.511	.3699	9.364	3.476	.6617
#1	-.0005	17.77	.0064	.0584	.0006	2.605	-.0002	.0018	.0256
#2	-.0007	17.96	.0052	.0589	.0005	2.624	-.0002	.0018	.0254
#3	-.0007	17.88	.0068	.0592	.0006	2.619	-.0002	.0017	.0253

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**-.0002**	**11.85**	**.2998**	**.6192**	**.0546**	**.0008**	**.3131**	**.0094**	**.0357**
Stddev	.0004	.05	.0118	.0154	.0000	.0001	.0010	.0001	.0003
%RSD	221.8	.4410	3.920	2.489	.0334	13.41	.3178	1.408	.7121
#1	.0001	11.79	.2905	.6087	.0546	.0007	.3119	.0093	.0355
#2	-.0007	11.88	.3130	.6369	.0546	.0008	.3139	.0095	.0356
#3	.0001	11.88	.2959	.6120	.0545	.0009	.3134	.0094	.0360

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**.0001**	**.0019**	**.7951**	**.0196**	**.0332**	**.8509**	**-.0027**	**.0429**	**.0088**
Stddev	.0008	.0017	.0023	.0003	.0002	.0026	.0005	.0003	.0001
%RSD	734.5	87.73	.2945	1.728	.4517	.3075	17.84	.7062	.8442
#1	-.0005	.0020	.7939	.0192	.0330	.8517	-.0032	.0426	.0089
#2	-.0002	.0002	.7937	.0198	.0333	.8530	-.0023	.0432	.0088
#3	.0010	.0036	.7978	.0199	.0333	.8480	-.0026	.0429	.0088

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1595.4**	**4510.2**	**33855.**	**7255.1**
Stddev	1.7	8.3	82.	48.2
%RSD	.10669	.18360	.24113	.66437
#1	1596.7	4512.9	33825.	7310.4
#2	1593.5	4516.9	33793.	7233.0
#3	1596.1	4501.0	33948.	7221.9

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 18:28:54 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2475	40.46	2.025	2.032	2.039	40.43	2.039	2.027	2.035
Stddev	.0010	.06	.007	.005	.005	.06	.002	.002	.007
%RSD	.3946	.1443	.3537	.2530	.2718	.1563	.1178	.1141	.3403
#1	.2479	40.48	2.022	2.037	2.043	40.49	2.037	2.027	2.043
#2	.2464	40.39	2.020	2.028	2.033	40.37	2.039	2.024	2.030
#3	.2483	40.49	2.033	2.029	2.041	40.42	2.042	2.029	2.032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.008	41.02	40.47	40.38	2.042	1.995	40.45	2.040	1.998
Stddev	.005	.07	.06	.10	.002	.004	.08	.002	.002
%RSD	.2516	.1748	.1509	.2543	.0737	.2271	.2065	.1053	.0983
#1	2.006	41.09	40.54	40.43	2.044	1.991	40.54	2.038	1.999
#2	2.005	40.94	40.42	40.26	2.041	1.995	40.38	2.039	1.999
#3	2.014	41.02	40.46	40.45	2.042	2.000	40.42	2.042	1.996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.021	2.023	1.907	2.025	2.083	2.066	2.014	2.022	2.032
Stddev	.005	.002	.004	.002	.004	.006	.010	.001	.003
%RSD	.2490	.1043	.1909	.0886	.1819	.3117	.4854	.0575	.1364
#1	2.027	2.020	1.905	2.026	2.086	2.072	2.020	2.023	2.029
#2	2.020	2.024	1.905	2.023	2.079	2.060	2.020	2.021	2.033
#3	2.017	2.024	1.912	2.026	2.085	2.067	2.003	2.022	2.034
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 18:28:54 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1466.5	4118.0	31338.	6688.7
Stddev	1.5	10.9	80.	17.2
%RSD	.09991	.26361	.25504	.25666
#1	1466.3	4125.8	31422.	6674.1
#2	1468.0	4122.5	31262.	6707.6
#3	1465.1	4105.6	31330.	6684.3

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 18:33:07 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0010	.0000	.0001	.0001	.0021	.0001	.0001	.0003
Stddev	.0004	.0085	.001	.0001	.0000	.0016	.0001	.0000	.0001
%RSD	417.1	867.5	2147.	144.6	15.04	76.70	67.36	26.80	42.60
#1	-.0001	.0089	-.0010	.0001	.0001	.0031	.0001	.0002	.0003
#2	.0004	-.0080	-.0001	.0000	.0001	.0030	.0001	.0001	.0005
#3	-.0005	.0021	.0010	.0000	.0001	.0002	.0000	.0001	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0108	.0173	-.0027	.0002	F .0024	-.0011	.0001	-.0001
Stddev	.0004	.0020	.0245	.0102	.0000	.0006	.0065	.0002	.0006
%RSD	95.91	18.26	141.4	381.4	21.41	23.45	598.8	162.3	863.4
#1	.0000	.0131	.0251	-.0112	.0002	.0029	.0019	.0002	.0004
#2	.0004	.0099	.0370	-.0055	.0002	.0023	.0034	-.0001	.0001
#3	.0009	.0095	-.0101	.0087	.0002	.0018	-.0085	.0003	-.0007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0012	.0011	.0004	.0002	.0008	.0014	.0002	.0000
Stddev	.0003	.0005	.0002	.0002	.0000	.0002	.0005	.0001	.0000
%RSD	153.1	44.03	18.85	40.72	12.27	19.47	39.53	30.28	34.73
#1	.0006	.0018	.0011	.0006	.0002	.0009	.0020	.0001	.0001
#2	.0000	.0010	.0013	.0002	.0002	.0007	.0011	.0002	.0000
#3	.0001	.0008	.0009	.0005	.0002	.0006	.0010	.0002	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 18:33:07 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1566.3	4245.6	31583.	6743.7
Stddev	.6	3.8	32.	60.2
%RSD	.03538	.08878	.10258	.89229
#1	1566.4	4249.9	31565.	6674.8
#2	1565.8	4244.3	31620.	6786.0
#3	1566.9	4242.7	31563.	6770.3

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 18:37:37 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2495**	**41.00**	**2.044**	**2.051**	**2.066**	**40.96**	**2.060**	**2.048**	**2.062**
Stddev	.0010	.14	.007	.005	.007	.15	.003	.001	.004
%RSD	.4022	.3484	.3439	.2363	.3199	.3656	.1378	.0233	.2127
#1	.2484	41.06	2.039	2.046	2.069	41.05	2.057	2.047	2.067
#2	.2501	41.10	2.041	2.055	2.070	41.04	2.063	2.048	2.059
#3	.2502	40.83	2.052	2.053	2.058	40.78	2.060	2.048	2.061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.034**	**41.60**	**41.02**	**40.98**	**2.055**	**2.019**	**40.90**	**2.060**	**2.016**
Stddev	.007	.14	.19	.20	.004	.006	.13	.005	.003
%RSD	.3226	.3382	.4515	.4874	.1783	.3070	.3182	.2238	.1509
#1	2.041	41.68	41.11	41.05	2.059	2.012	40.98	2.054	2.013
#2	2.028	41.68	41.14	41.13	2.053	2.021	40.98	2.062	2.019
#3	2.034	41.44	40.81	40.75	2.052	2.024	40.75	2.062	2.014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.043**	**2.045**	**1.924**	**2.048**	**2.110**	**2.093**	**2.033**	**2.041**	**2.050**
Stddev	.006	.005	.002	.004	.010	.006	.010	.006	.004
%RSD	.2754	.2243	.0875	.2058	.4715	.2667	.4840	.2914	.2130
#1	2.038	2.040	1.922	2.045	2.115	2.099	2.021	2.048	2.045
#2	2.043	2.048	1.923	2.046	2.116	2.089	2.038	2.039	2.052
#3	2.049	2.047	1.926	2.053	2.099	2.091	2.038	2.037	2.053
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 18:37:37 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1454.3**	**4080.7**	**31212.**	**6624.9**
Stddev	3.0	.9	72.	21.2
%RSD	.20789	.02322	.23180	.32003
#1	1457.2	4081.6	31146.	6614.7
#2	1454.4	4080.6	31290.	6610.6
#3	1451.2	4079.7	31201.	6649.2

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 18:41:50 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.0087**	**.0000**	**.0003**	**.0003**	**.0084**	**.0001**	**.0001**	**.0003**
Stddev	.0002	.0046	.001	.0001	.0000	.0041	.0001	.0001	.0001
%RSD	188.5	52.93	3134.	43.43	15.73	48.73	58.52	68.96	46.11
#1	.0000	.0137	-.0006	.0002	.0004	.0120	.0002	.0001	.0004
#2	-.0004	.0047	.0003	.0003	.0003	.0092	.0001	.0000	.0001
#3	.0000	.0077	.0002	.0005	.0003	.0039	.0001	.0001	.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0008**	**.0159**	**.0007**	**.0154**	**.0003**	F **.0025**	**.0084**	**.0003**	**-.0007**
Stddev	.0005	.0030	.0159	.0215	.0000	.0004	.0061	.0001	.0007
%RSD	63.44	18.70	2199.	138.9	3.881	16.44	73.13	27.77	92.67
#1	.0005	.0188	.0190	-.0083	.0003	.0030	.0116	.0002	-.0008
#2	.0014	.0162	-.0070	.0212	.0003	.0024	.0122	.0004	-.0013
#3	.0005	.0128	-.0099	.0334	.0003	.0022	.0013	.0003	.0000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	F **.0023**	**.0008**	**.0004**	**.0004**	**.0009**	**.0018**	**.0003**	**.0001**
Stddev	.0010	.0018	.0002	.0001	.0000	.0001	.0011	.0002	.0001
%RSD	262.0	78.48	27.79	20.55	8.393	13.31	58.55	74.77	54.74
#1	.0005	.0027	.0007	.0005	.0004	.0009	.0013	.0004	.0002
#2	.0013	.0003	.0007	.0003	.0003	.0010	.0011	.0004	.0001
#3	-.0007	.0039	.0011	.0004	.0004	.0008	.0030	.0000	.0001
Check ?	Chk Pass	Chk Fail	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		.0020							
Low Limit		-.0020							

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 18:41:50 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1561.2**	**4236.1**	**31463.**	**6756.8**
Stddev	1.4	3.9	21.	6.6
%RSD	.08710	.09262	.06764	.09766
#1	1561.4	4236.1	31460.	6753.4
#2	1562.5	4232.1	31444.	6764.4
#3	1559.8	4240.0	31486.	6752.6

Zoom In Zoom Out

Sample Name: CRIA Acquired: 4/27/2017 19:25:52 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	.0086	.2138	.0105	.2116	.0053	1.088	.0054	.0527	.0110
Stddev	.0002	.0090	.0003	.0010	.0001	.003	.0001	.0003	.0002
%RSD	2.845	4.203	3.342	.4713	1.183	.2849	.9345	.5029	1.929
#1	.0087	.2170	.0107	.2127	.0053	1.091	.0054	.0530	.0112
#2	.0089	.2207	.0101	.2114	.0052	1.085	.0053	.0525	.0108
#3	.0084	.2036	.0106	.2107	.0053	1.089	.0054	.0526	.0109

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	.0260	.3293	10.56	5.396	.0163	.0530	10.61	.0428	.0046
Stddev	.0003	.0016	.02	.029	.0000	.0002	.01	.0003	.0005
%RSD	.9796	.4910	.1664	.5381	.2165	.4375	.0935	.7878	10.61
#1	.0262	.3312	10.56	5.369	.0164	.0528	10.62	.0425	.0042
#2	.0257	.3285	10.55	5.393	.0163	.0532	10.60	.0432	.0051
#3	.0259	.3283	10.58	5.427	.0163	.0531	10.61	.0426	.0045

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	.0062	.0105	.0229	.0535	.0108	.0107	.0118	.0508	.0216
Stddev	.0007	.0010	.0007	.0005	.0001	.0001	.0004	.0003	.0001
%RSD	10.89	9.804	3.006	.9285	1.224	.9179	3.462	.6850	.5751
#1	.0056	.0095	.0221	.0532	.0109	.0108	.0114	.0504	.0215
#2	.0069	.0105	.0230	.0533	.0107	.0107	.0119	.0511	.0215
#3	.0061	.0116	.0235	.0541	.0106	.0106	.0122	.0510	.0217

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	1565.5	4257.3	31725.	6677.4
Stddev	7.5	2.0	17.	32.0
%RSD	.48187	.04774	.05307	.47869
#1	1572.9	4259.6	31720.	6682.1
#2	1565.7	4256.6	31712.	6706.7
#3	1557.9	4255.8	31744.	6643.3

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 19:30:18 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2517	41.02	2.045	2.057	2.063	41.04	2.064	2.054	2.078
Stddev	.0009	.10	.001	.010	.005	.11	.002	.001	.012
%RSD	.3676	.2439	.0254	.4701	.2623	.2742	.1113	.0550	.5643
#1	.2511	41.04	2.045	2.059	2.061	41.01	2.061	2.053	2.068
#2	.2514	41.12	2.044	2.065	2.069	41.17	2.064	2.055	2.074
#3	.2528	40.92	2.045	2.046	2.058	40.95	2.065	2.055	2.091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.037	41.60	40.90	41.31	2.072	2.022	40.88	2.060	2.029
Stddev	.006	.02	.12	.13	.007	.007	.16	.003	.006
%RSD	.3102	.0390	.2965	.3159	.3497	.3698	.3856	.1483	.3221
#1	2.030	41.62	40.93	41.37	2.070	2.014	40.89	2.057	2.029
#2	2.040	41.59	41.01	41.16	2.065	2.024	41.03	2.063	2.022
#3	2.041	41.61	40.77	41.39	2.080	2.029	40.72	2.061	2.035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.046	2.050	1.926	2.054	2.096	2.094	2.036	2.052	2.057
Stddev	.004	.002	.003	.003	.007	.010	.006	.009	.002
%RSD	.2167	.0933	.1597	.1615	.3551	.4927	.3133	.4371	.1015
#1	2.040	2.048	1.923	2.052	2.096	2.083	2.037	2.048	2.055
#2	2.048	2.049	1.927	2.053	2.104	2.098	2.028	2.046	2.059
#3	2.048	2.052	1.929	2.058	2.089	2.102	2.041	2.063	2.058
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 19:30:18 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1446.4	4074.1	30869.	6557.4
Stddev	2.5	8.1	225.	10.6
%RSD	.17211	.19915	.73045	.16203
#1	1446.0	4083.2	31085.	6562.1
#2	1449.0	4067.6	30886.	6545.2
#3	1444.1	4071.6	30635.	6564.8

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 19:34:29 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0110	.0002	.0001	.0004	.0100	.0002	.0002	.0005
Stddev	.0002	.0053	.0010	.0002	.0001	.0012	.0001	.0001	.0001
%RSD	119.7	47.68	562.6	304.7	20.88	12.17	48.35	24.37	12.71
#1	-.0004	.0141	.0014	.0003	.0004	.0104	.0002	.0002	.0005
#2	.0001	.0050	-.0003	.0001	.0004	.0109	.0002	.0003	.0004
#3	-.0002	.0141	-.0005	-.0001	.0003	.0086	.0001	.0002	.0005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0175	.0388	.0135	.0003	F .0025	.0127	.0001	-.0003
Stddev	.0002	.0010	.0157	.0075	.0001	.0007	.0044	.0002	.0001
%RSD	33.54	5.654	40.32	55.83	23.29	28.14	34.62	177.1	43.73
#1	.0004	.0180	.0365	.0088	.0004	.0031	.0161	.0003	-.0002
#2	.0004	.0182	.0555	.0222	.0003	.0026	.0142	.0000	-.0003
#3	.0007	.0164	.0245	.0095	.0003	.0017	.0077	.0000	-.0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0019	.0013	.0002	.0004	.0009	.0016	.0004	.0001
Stddev	.0017	.0004	.0002	.0001	.0001	.0001	.0011	.0001	.0001
%RSD	348.5	20.57	16.11	39.47	14.05	8.238	66.69	28.89	95.43
#1	.0022	.0020	.0016	.0003	.0005	.0009	.0025	.0005	.0001
#2	-.0012	.0015	.0014	.0002	.0004	.0010	.0004	.0004	.0000
#3	.0005	.0023	.0011	.0001	.0003	.0009	.0020	.0003	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 19:34:29 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1557.0**	**4241.4**	**31257.**	**6689.3**
Stddev	3.2	12.6	97.	10.5
%RSD	.20259	.29713	.30879	.15719
#1	1555.8	4234.3	31176.	6683.5
#2	1560.5	4255.9	31364.	6701.4
#3	1554.5	4233.9	31231.	6682.9

Zoom In Zoom Out

Sample Name: ICSA Acquired: 4/27/2017 19:39:01 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)
Avg	**-.0007**	F **504.2**	**-.0024**	**.0008**	**.0000**	**478.2**	**.0009**	**.0008**
Stddev	.0004	13.6	.0018	.0003	.0000	2.6	.0001	.0000
%RSD	60.94	2.688	75.58	34.51	408.8	.5513	15.97	4.529
#1	-.0011	498.9	-.0008	.0008	.0000	481.2	.0010	.0008
#2	-.0005	494.1	-.0020	.0010	.0000	476.1	.0009	.0008
#3	-.0003	519.6	-.0043	.0005	.0000	477.5	.0007	.0008

Elem	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895
IS Ref	(Y_3600)	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)
Avg	**.0004**	**-.0026**	**178.4**	**.0780**	F **514.8**	**.0005**	**.0013**	**.1716**
Stddev	.0005	.0002	.8	.0277	3.7	.0000	.0002	.0043
%RSD	120.4	8.457	.4287	35.57	.7246	7.279	14.96	2.527
#1	.0010	-.0028	177.7	.1100	512.5	.0006	.0013	.1667
#2	-.0001	-.0024	178.3	.0641	512.9	.0005	.0015	.1750
#3	.0004	-.0027	179.2	.0600	519.1	.0005	.0011	.1730

Elem	Ni2316	Pb2203	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349
IS Ref	(Y_2243)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)
Avg	**-.0003**	F **-.0081**	**-.0004**	**.0064**	**.0141**	**.0028**	**.0005**	**-.0005**
Stddev	.0001	.0024	.0032	.0026	.0012	.0005	.0005	.0001
%RSD	50.71	30.06	882.7	40.75	8.280	18.19	83.16	20.45
#1	-.0002	-.0066	.0000	.0038	.0138	.0032	.0000	-.0004
#2	-.0005	-.0068	.0027	.0090	.0154	.0030	.0007	-.0004
#3	-.0002	-.0110	-.0038	.0063	.0131	.0022	.0009	-.0006

Elem	Tl1908	V_2924	Zn2062
IS Ref	(In2306)	(Y_3600)	(Y_2243)
Avg	**-.0015**	**-.0002**	**.0014**
Stddev	.0014	.0001	.0001
%RSD	93.63	50.71	3.877
#1	-.0031	-.0001	.0014
#2	-.0008	-.0002	.0015
#3	-.0006	-.0003	.0014

Zoom In Zoom Out

Sample Name: ICSA Acquired: 4/27/2017 19:39:01 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1330.3**	**3881.8**	**29635.**	**6388.0**
Stddev	4.8	10.3	84.	25.7
%RSD	.36220	.26472	.28311	.40189
#1	1324.9	3870.6	29721.	6393.7
#2	1334.1	3884.2	29631.	6410.3
#3	1331.9	3890.7	29553.	6359.9

Zoom In Zoom Out

Sample Name: ICSAB Acquired: 4/27/2017 19:43:40 Type: Unk
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
IS Ref	(Y_3600)	(Y_3710)	(Y_2243)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_2243)	(Y_2243)	(Y_3600)
Avg	F **.9713**	**498.1**	**1.097**	**.5062**	**.4918**	**471.6**	**.9378**	**.4777**	**.4992**
Stddev	.0021	6.1	.003	.0023	.0005	5.6	.0001	.0009	.0033
%RSD	.2127	1.218	.2604	.4566	.0931	1.184	.0156	.1954	.6609
#1	.9724	498.0	1.100	.5087	.4923	472.0	.9377	.4767	.4974
#2	.9725	504.2	1.096	.5059	.4919	477.0	.9380	.4778	.5030
#3	.9689	492.1	1.094	.5041	.4914	465.9	.9378	.4786	.4972

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
IS Ref	(Y_3600)	(Y_3710)	(Y_3710)	(Y_3710)	(Y_3600)	(Y_2243)	(Y_3710)	(Y_2243)	(In2306)
Avg	**.5458**	**173.3**	**.0577**	F **513.8**	**.4911**	**1.029**	**.1644**	**.9565**	**.9703**
Stddev	.0027	.7	.0178	2.3	.0009	.002	.0048	.0012	.0011
%RSD	.4925	.4036	30.82	.4533	.1848	.1722	2.905	.1290	.1146
#1	.5460	173.7	.0680	515.3	.4904	1.030	.1663	.9579	.9716
#2	.5483	173.7	.0680	515.0	.4921	1.030	.1680	.9557	.9695
#3	.5430	172.5	.0372	511.1	.4909	1.027	.1590	.9559	.9697

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
IS Ref	(Y_2243)	(Y_2243)	(Y_2243)	(Y_2243)	(Y_3710)	(Y_3600)	(In2306)	(Y_3600)	(Y_2243)
Avg	**1.051**	**1.040**	**.0481**	**.9992**	**1.046**	**1.039**	**1.014**	**.4763**	**.9240**
Stddev	.003	.006	.0002	.0025	.002	.004	.004	.0020	.0001
%RSD	.2860	.5608	.3748	.2508	.1414	.3946	.4080	.4124	.0086
#1	1.048	1.034	.0483	.9998	1.047	1.039	1.013	.4751	.9239
#2	1.051	1.046	.0480	.9964	1.047	1.043	1.018	.4786	.9241
#3	1.054	1.040	.0479	1.001	1.044	1.035	1.010	.4752	.9240

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Avg	**1306.7**	**3877.4**	**29610.**	**6347.7**
Stddev	.3	3.4	93.	43.0
%RSD	.02412	.08768	.31369	.67719
#1	1307.0	3877.2	29571.	6335.6
#2	1306.4	3880.8	29543.	6312.0
#3	1306.8	3874.0	29716.	6395.4

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 19:48:09 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.2508**	**41.11**	**2.033**	**2.065**	**2.063**	**41.15**	**2.057**	**2.047**	**2.065**
Stddev	.0007	.08	.001	.004	.002	.05	.004	.004	.006
%RSD	.2635	.2021	.0532	.2048	.0968	.1311	.2180	.1690	.2785
#1	.2515	41.08	2.034	2.062	2.062	41.18	2.061	2.048	2.067
#2	.2507	41.21	2.034	2.070	2.065	41.09	2.052	2.043	2.070
#3	.2502	41.06	2.032	2.063	2.061	41.19	2.059	2.049	2.059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.019**	**41.71**	**41.03**	**41.30**	**2.070**	**2.018**	**40.90**	**2.052**	**2.017**
Stddev	.009	.05	.06	.09	.009	.004	.02	.005	.003
%RSD	.4532	.1209	.1427	.2217	.4559	.2114	.0544	.2675	.1612
#1	2.020	41.66	41.03	41.21	2.064	2.014	40.93	2.054	2.017
#2	2.010	41.75	41.10	41.39	2.081	2.016	40.88	2.045	2.014
#3	2.028	41.73	40.98	41.31	2.064	2.023	40.90	2.056	2.021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.034**	**2.042**	**1.917**	**2.046**	**2.100**	**2.080**	**2.028**	**2.047**	**2.053**
Stddev	.006	.008	.005	.005	.004	.002	.001	.008	.007
%RSD	.3061	.4045	.2775	.2320	.2103	.0780	.0443	.3689	.3441
#1	2.033	2.032	1.913	2.050	2.102	2.078	2.028	2.040	2.058
#2	2.028	2.047	1.915	2.041	2.103	2.080	2.029	2.055	2.045
#3	2.040	2.046	1.923	2.047	2.095	2.081	2.027	2.046	2.055
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value									
Range									

Zoom In Zoom Out

Sample Name: CCV Acquired: 4/27/2017 19:48:09 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1459.4**	**4109.0**	**31168.**	**6522.4**
Stddev	1.0	4.8	93.	19.3
%RSD	.06994	.11678	.29961	.29541
#1	1458.5	4103.6	31268.	6510.2
#2	1460.5	4112.7	31083.	6544.6
#3	1459.3	4110.8	31152.	6512.3

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 19:52:20 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Elem	Ag3280	Al3961	As1890	Ba4554	Be3130	Ca3179	Cd2265	Co2286	Cr2677
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0003**	**.0213**	**-.0001**	**.0001**	**.0002**	**.0196**	**.0001**	**.0000**	**.0001**
Stddev	.0002	.0111	.0009	.0003	.0000	.0035	.0000	.0001	.0001
%RSD	76.25	51.96	687.2	211.5	18.48	17.67	21.08	131.4	59.62
#1	-.0001	.0255	.0009	.0003	.0002	.0232	.0001	.0001	.0002
#2	-.0002	.0296	-.0006	.0003	.0002	.0194	.0001	.0000	.0000
#3	-.0005	.0087	-.0007	-.0002	.0001	.0163	.0001	.0000	.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Cu3247	Fe2599	K_7664	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0205**	**.0082**	**.0203**	**.0002**	F **.0027**	**.0062**	**.0001**	**-.0006**
Stddev	.0005	.0030	.0234	.0235	.0001	.0008	.0024	.0002	.0008
%RSD	137.6	14.75	285.5	115.7	43.81	28.29	38.39	255.2	123.4
#1	.0005	.0240	.0352	.0271	.0002	.0035	.0056	.0003	-.0013
#2	.0008	.0185	-.0044	.0396	.0002	.0025	.0088	-.0002	.0002
#3	-.0002	.0190	-.0062	-.0058	.0001	.0020	.0041	.0002	-.0008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.0010			
Low Limit						-.0010			

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0004**	**.0012**	**.0009**	**.0004**	**.0003**	**.0008**	**.0004**	**.0003**	**.0001**
Stddev	.0014	.0012	.0004	.0003	.0001	.0001	.0008	.0002	.0001
%RSD	324.8	106.7	51.01	62.64	25.44	11.82	189.4	67.57	36.38
#1	.0020	.0016	.0014	.0003	.0003	.0008	.0012	.0003	.0001
#2	-.0002	-.0002	.0007	.0002	.0003	.0009	-.0005	.0001	.0002
#3	-.0005	.0021	.0006	.0007	.0002	.0007	.0006	.0004	.0001
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Zoom In Zoom Out

Sample Name: CCB Acquired: 4/27/2017 19:52:20 Type: QC
Method: 60102007_042011(v523) Mode: CONC Corr. Factor: 1.000000
User: admin SSTRACE01: : :
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3710
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1549.1**	**4229.4**	**31240.**	**6625.9**
Stddev	5.0	9.1	57.	13.8
%RSD	.32200	.21571	.18377	.20891
#1	1546.4	4231.9	31241.	6637.5
#2	1554.9	4236.9	31297.	6610.6
#3	1546.2	4219.2	31182.	6629.6

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Ag 328.068 {103}	☒	2	V	-0.005817	0.000000	No
			Fe	0.000010	0.000000	No
Al 396.152 { 85}	☒	1	Mo	0.040330	0.000000	No
As 189.042 {478}	☒	4	Fe	-0.000073	0.000000	No
			Cr	-0.000653	0.000000	No
			Mo	0.000444	0.000000	No
			Al	0.000001	0.000000	No
Ba 455.403 { 74}	☒	1	Fe	0.000020	0.000000	No
Be 313.042 {108}	☒	2	V	0.000625	0.000000	No
			Ti	-0.000289	0.000000	No
Ca 317.933 {106}	☒	None				
Cd 226.502 {449}	☒	4	Fe	0.000079	0.000000	No
			Ca	-0.000000	0.000000	No
			Al	-0.000002	0.000000	No
			Ti	0.000103	0.000000	No
Co 228.616 {447}	☒	3	Mo	-0.001220	0.000000	No
			Ti	0.002210	0.000000	No
			Fe	0.000005	0.000000	No
Cr 267.716 {126}	☒	4	Al	0.000005	0.000000	No
			Fe	0.000001	0.000000	No
			Ca	0.000002	0.000000	No
			Cd	-0.000120	0.000000	No
Cu 324.754 {104}	☒	10	Mo	0.000189	0.000000	No
			Sn	-0.000012	0.000000	No
			V	-0.000158	0.000000	No
			Al	0.000003	0.000000	No
			Mg	0.000003	0.000000	No
			Co	-0.000547	0.000000	No
			Cd	0.000190	0.000000	No
			Fe	-0.000122	0.000000	No
			Ca	0.000001	0.000000	No
			Ti	-0.000268	0.000000	No
Fe 259.940 {130}	☒	None				
In 230.606 {446}*	☒	None				
K 766.490 { 44}	☒	None				
Mg 279.079 {121}	☒	None				
Mn 257.610 {131}	☒	2	Fe	0.000018	0.000000	No
			Mg	0.000000	0.000000	No
Mo 202.030 {467}	☒	1	Fe	-0.000008	0.000000	No
Na 589.592 { 57}	☒	None				
Ni 231.604 {445}	☒	7	Fe	-0.000035	0.000000	No
			Co	0.000112	0.000000	No
			Mo	0.000980	0.000000	No
			Sb	-0.000120	0.000000	No
			Al	0.000003	0.000000	No
			Be	-0.000304	0.000000	No
			Tl	0.000172	0.000000	No
Pb 220.353 {453}	☒	8	Al	0.000178	0.000000	No
			Fe	0.000146	0.000000	No
			Mo	-0.002189	0.000000	No
			Cu	0.000467	0.000000	No
			Ti	0.000036	0.000000	No
			Si	0.000232	0.000000	No
			Ca	-0.000005	0.000000	No
			Cr	-0.000260	0.000000	No
Sb 206.833 {463}	☒	11	Fe	0.000022	0.000000	No
			Cr	0.011486	0.000000	No

SGS ACCUTEST FA43270

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
			Mo	-0.003944	0.000000	No
			V	-0.000441	0.000000	No
			Sn	-0.008695	0.000000	No
			Ti	0.000278	0.000000	No
			Ca	0.000001	0.000000	No
			Ni	-0.000818	0.000000	No
			Al	0.000010	0.000000	No
			Mn	-0.000133	0.000000	No
			Mg	-0.000002	0.000000	No
Se 196.090 {472}	☒	12	Fe	0.000097	0.000000	No
			Ca	-0.000003	0.000000	No
			Mn	0.000331	0.000000	No
			Mo	0.000111	0.000000	No
			Al	-0.000031	0.000000	No
			V	0.000000	0.000000	No
			Zn	0.000000	0.000000	No
			Sr	-0.000111	0.000000	No
			As	0.000125	0.000000	No
			Cd	-0.000250	0.000000	No
			Mg	-0.000004	0.000000	No
			Cr	-0.000326	0.000000	No
Si 212.412 {459}	☒	1	Mo	0.000000	0.000000	No
Sn 189.989 {477}	☒	None				
Sr 407.771 { 83}	☒	1	Ca	0.000099	0.000000	No
Ti 334.941 {101}	☒	1	Ca	-0.000011	0.000000	No
Tl 190.856 {477}	☒	10	Co	0.004099	0.000000	No
			Fe	0.000009	0.000000	No
			Al	-0.000005	0.000000	No
			Ba	-0.000051	0.000000	No
			Ti	-0.000648	0.000000	No
			Sb	0.000167	0.000000	No
			Ca	-0.000004	0.000000	No
			Cr	0.000340	0.000000	No
			Mg	-0.000002	0.000000	No
			V	0.000015	0.000000	No
V 292.402 {115}	☒	5	Fe	0.000011	0.000000	No
			Cr	-0.003634	0.000000	No
			Mo	-0.009536	0.000000	No
			Ti	0.000303	0.000000	No
			Mn	-0.000333	0.000000	No
Y 224.306 {450}*	☒	None				
Y 360.073 { 94}*	☒	None				
Y 371.030 { 91}*	☒	None				
Zn 206.200 {463}	☒	5	Cr	-0.001305	0.000000	No
			Al	0.000011	0.000000	No
			Ca	0.000003	0.000000	No
			Fe	0.000023	0.000000	No
			As	0.001105	0.000000	No

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.000290	0.676621	0.000000	1.000000
Al 396.152 { 85}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.001226	0.155491	0.000000	1.000000
As 189.042 {478}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.000823	0.179517	0.000000	1.000000
Ba 455.403 { 74}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.000146	7.670038	0.000000	1.000000
Be 313.042 {108}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.000247	9.024708	0.000000	1.000000
Ca 317.933 {106}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.003078	0.252473	0.000000	1.000000
Cd 226.502 {449}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.001894	4.975906	0.000000	1.000000
Co 228.616 {447}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.000863	2.702841	0.000000	1.000000
Cr 267.716 {126}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.000169	0.496686	0.000000	1.000000
Cu 324.754 {104}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.014925	0.808305	0.000000	1.000000
Fe 259.940 {130}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.000501	0.158214	0.000000	1.000000
In 230.606 {446}*	4/27/2017 8:55:35	5/5/2010 12:30:54	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
K 766.490 { 44}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.007633	0.073171	0.000000	1.000000
Mg 279.079 {121}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.000147	0.022347	0.000000	1.000000
Mn 257.610 {131}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.000534	2.640916	0.000000	1.000000
Mo 202.030 {467}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.000760	0.842439	0.000000	1.000000
Na 589.592 { 57}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.001883	0.295006	0.000000	1.000000
Ni 231.604 {445}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.000816	1.655262	0.000000	1.000000
Pb 220.353 {453}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.001844	1.190953	0.000000	1.000000
Sb 206.833 {463}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.000509	0.228831	0.000000	1.000000
Se 196.090 {472}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.000409	0.124534	0.000000	1.000000
Si 212.412 {459}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.005878	0.507403	0.000000	1.000000
Sn 189.989 {477}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.000445	0.383405	0.000000	1.000000
Sr 407.771 { 83}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.001097	12.880541	0.000000	1.000000
Ti 334.941 {101}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.001198	1.655441	0.000000	1.000000
Tl 190.856 {477}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.002503	0.344582	0.000000	1.000000
V 292.402 {115}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	-0.000903	0.715588	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 371.030 { 91}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	4/27/2017 8:55:35	4/27/2017 8:11:16	Linear	1/Conc	0.001097	2.358181	0.000000	1.000000

	Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
							Slope	Y-int	Slope factor	Offset
	Ag 328.068 {103}	0.999935	0.000074	0.000411	0.001370	OK.	1.000000	0.000000	1	0
	Al 396.152 { 85}	0.999740	0.005720	0.007592	0.025307	OK.	1.000000	0.000000	1	0
	As 189.042 {478}	0.999992	0.000058	0.000916	0.003052	OK.	1.000000	0.000000	1	0
	Ba 455.403 { 74}	0.999889	0.009220	0.000190	0.000633	OK.	1.000000	0.000000	1	0
	Be 313.042 {108}	0.999801	0.014515	0.000057	0.000191	OK.	1.000000	0.000000	1	0
	Ca 317.933 {106}	0.999581	0.011781	0.002464	0.008212	OK.	1.000000	0.000000	1	0
	Cd 226.502 {449}	0.999857	0.006783	0.000053	0.000176	OK.	1.000000	0.000000	1	0
	Co 228.616 {447}	0.999924	0.002694	0.000109	0.000362	OK.	1.000000	0.000000	1	0
	Cr 267.716 {126}	0.999809	0.000783	0.000325	0.001083	OK.	1.000000	0.000000	1	0
	Cu 324.754 {104}	0.999945	0.000683	0.000298	0.000995	OK.	1.000000	0.000000	1	0
	Fe 259.940 {130}	0.999006	0.011370	0.001951	0.006504	OK.	1.000000	0.000000	1	0
	In 230.606 {446}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	K 766.490 { 44}	0.999794	0.002395	0.026882	0.089607	OK.	1.000000	0.000000	1	0
	Mg 279.079 {121}	0.999659	0.000940	0.017491	0.058304	OK.	1.000000	0.000000	1	0
	Mn 257.610 {131}	0.999692	0.005278	0.000054	0.000179	OK.	1.000000	0.000000	1	0
	Mo 202.030 {467}	0.999865	0.001114	0.000190	0.000633	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	0.999736	0.010916	0.006723	0.022411	OK.	1.000000	0.000000	1	0
	Ni 231.604 {445}	0.999889	0.001985	0.000181	0.000603	OK.	1.000000	0.000000	1	0
	Pb 220.353 {453}	0.999959	0.000873	0.000666	0.002220	OK.	1.000000	0.000000	1	0
	Sb 206.833 {463}	0.999984	0.000105	0.001134	0.003780	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	0.999974	0.000072	0.001837	0.006123	OK.	1.000000	0.000000	1	0
	Si 212.412 {459}	0.997254	0.003034	0.000369	0.001231	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	0.999969	0.000243	0.000369	0.001230	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	0.999966	0.008571	0.000074	0.000245	OK.	1.000000	0.000000	1	0
	Ti 334.941 {101}	0.999975	0.000950	0.000143	0.000476	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	0.999944	0.000295	0.001284	0.004281	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	0.999945	0.000598	0.000301	0.001002	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 371.030 { 91}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Zn 206.200 {463}	0.999815	0.003655	0.000080	0.000267	OK.	1.000000	0.000000	1	0

DOD (Hg/MS)

SGS Accutest - Orlando Metals Digestion Log Soil

MP #: 32050 Method of Digestion: SW846-3050B

Prep Date/Time (mm/dd/yy 24:00): ~~04/25/17~~ 04/26/17 09:15

HotBlock I.D. 5

Thermometer I.D. 204

Correction Factor (°C) -1

Temperature Observed/Corrected (°C) 95 / 94

Balance I.D. ADVPR03

Spk. Sol. [A]	Volume Used(ml)	Pipette #
ACC 1016	0.50	00083294
ACC978	0.25	00083294
Met 5701	0.25	00083294

Filter Lot#: 140320014

Dig. Tube Lot# 1612138

Added [B]:	H_2O_2	HNO_3	HCL	PTFE Boiling Chips
Lot#	168599	0000162027	0000162118	T1600-6J009

Sample #	D	Wt., g	Final Volume(ml)	Comments
Method Blank(MB)		1.0	50.0	(1) Did not digest. CP 04/26/17
Spike Blank(SB)		↓	↓	
Matrix Spike(MS)		1.17		
Matrix Spike Dup(MSD)		1.05		
Duplicate(DUP)		1.00		
1 QC FA43252-5	1	1.24		
2 FA43270-1	↓	1.25		
3 ↓ -2	↓	1.34		
4 FA43341-1 (1)	1	1.10		white plastic pellet
5 -2	↓	1.07		Black plastic pellet
6 -3	↓	1.01		
7 -4 ↓	↓	1.03	↓	↓
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21 [E]				
22 [E]				
23 [E]				
24 [E]				

CP 04/26/17

Analyst: [redacted] (b) (6) Date: 04/26/17

QC Review: [redacted] Date: 4.26.17

A Used for SB, MS, MSD
B For reagent volumes used consult SOP MET 104, current revision
C Parent sample used to prepare MS, MSD, DUP
D Bottle Number
E Additional Matrix QC

icpsoildigestionlog.0316.xls Rev 03/04/16 DM

* CP 04/26/17

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: FA43270
Account: ARCTXEL Arcadis-US, Inc
Project: Castner Firing Range; Ft Bliss, TX

Sample: FA43270-1 **Analyzed:** 21-APR-17 by KH **Method:** SM19 2540G
ClientID: FTBL-SS-B19-0-12-041917-R-QA

Wet Weight (Total)	9.76	g
Tare Weight	2.49	g
Dry Weight (Total)	9.7	g
Solids, Percent	99.2	%

Sample: FA43270-2 **Analyzed:** 21-APR-17 by KH **Method:** SM19 2540G
ClientID: FTBL-SS-B44-0-12-042017-R-QA

Wet Weight (Total)	10.15	g
Tare Weight	2.55	g
Dry Weight (Total)	10.12	g
Solids, Percent	99.6	%

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

May 15, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed is the final validation report for the fraction listed below. This SDG was received on May 1, 2017. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #38602:

SDG #	**Fraction:**
FA43270	Metals

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #38602 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	(4) Metals (6010C)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	FA43270	05/01/17	05/15/17	0	2																														

Data Validation Report
Fort Bliss, Castner Range

SDG: FA43270

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

May 12, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the April 2017 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by Environmental Protection Agency (EPA) SW 846 Method 6010C

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Please note that sample names had to be truncated due to database limitations. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample (LCS), split duplicate samples, and internal standards.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software with the exception of lead. The associated sample results were not detected or were significantly greater than the concentrations found in the blanks, therefore no data were qualified. The details are presented in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
FA43270/ 6010C	ICB/CCB	Antimony	1.4 ug/L	FTBL-SS-B44-0-12-042017-R-QA (5x)
FA43270/ 6010C	ICB/CCB	Lead	1.1 ug/L	FTBL-SS-B19-0-12-041917-R-QA (5x)
FA43270/ 6010C	ICB/CCB	Copper	2.5 ug/L	FTBL-SS-B19-0-12-041917-R-QA (20x)

Sample concentrations were compared to concentrations detected in the laboratory blanks. The

sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks.

VII. Field Blanks

No field blanks were identified in this SDG.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed.

IX. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed.

X. Serial Dilution

Serial dilution was not performed for this SDG.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XII. Field/Split Duplicates

No field duplicates were identified in this SDG.

Samples FTBL-SS-B19-0-12-041917-R-QA and FTBL-SS-B19-0-12-041917-R (from SDG HS17041053) and samples FTBL-SS-B44-0-12-042017-R-QA and FTBL-SS-B44-0-12-042017-R (from SDG HS1704053) were identified as split samples. No metals were detected in any of the split samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B19-0-12-041917-R (SDG: HS17041053)	FTBL-SS-B19-0-12-041917-R-QA (SDG: FA43270)		
Copper	7.55	6.7	12	
Lead	10.4	12.0	14	
Zinc	48.1	53.8	11	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B44-0-12-042017-R (SDG: HS1704053)	FTBL-SS-B44-0-12-042017-R -QA (SDG: FA43270)		
Antimony	46.8	57.5	21	
Copper	212	348	49	
Lead	6710	12600	61	J det/A
Zinc	65.9	86.9	27	

XIII. Internal Standards

All internal standard areas and percent recoveries were within QC limits.

XIV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to split duplicate RPD, data were qualified as estimated in one sample.

Due to results below the LOQ, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the data validation all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Apr-2017	FTBL-SS-B19-0-12-041917-R	FA43270-1	N	6010C	6010C	III
20-Apr-2017	FTBL-SS-B44-0-12-042017-R	FA43270-2	N	6010C	6010C	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: FA43270 **Laboratory: ACTO**

EDD Filename: FA43270-SEDD_2a_1 **eQAPP Name: Arcadis_FtBliss_ALS_170316**

Method Category: **METALS**

Method: **6010C** ***Matrix:*** **Soil**

Sample ID: **FTBL-SS-B19-0-12-041917-R-QA** ***Collected:*** **4/19/2017 1:25:00 PM** ***Analysis Type:*** **Dilution-1** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	6.7	JB	1.6	LOD	20	LOQ	mg/Kg	J	RI

Sample ID: **FTBL-SS-B44-0-12-042017-R-QA** ***Collected:*** **4/20/2017 9:35:00 AM** ***Analysis Type:*** **Dilution-1** ***Dilution:*** **200**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	12600		30	LOD	150	LOQ	mg/Kg	J	Fd

* denotes a non-reportable result

Project Name and Number: - USACE Project: Castner Firing Range; Ft Bliss, TX

Data Qualifier Summary

Lab Reporting Batch ID: FA43270 **Laboratory: ACTO**

EDD Filename: FA43270-SEDD_2a_1 **eQAPP Name: Arcadis_FtBliss_ALS_170316**

Reason Code Legend

Reason Code	*Description*
Fd	Field Duplicate Precision
Mb	Method Blank Contamination
Rl	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: - USACE Project: Castner Firing Range; Ft Bliss, TX

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

FA43270

LDC #: 38602A4b
SDG #: FA43270
Laboratory: Accutest

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 5/12/17
Page: 1 of 1
Reviewer: KK
2nd Reviewer: On

METHOD: Metals (EPA SW 846 Method 6010C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Instrument Calibration	A	
III.	ICP Interference Check Sample (ICS) Analysis	A	
IV.	Laboratory Blanks	SW	ICB/CCB only
V.	Field Blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	
VII.	Duplicate sample analysis	N	
VIII.	Serial Dilution	N	
IX.	Laboratory control samples	N	
X.	Field Duplicates	SW	Split
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B19-0-12-041917-R-QA	FA43270-1	Soil	04/19/17
2	FTBL-SS-B44-0-12-042017-R-QA	FA43270-2	Soil	04/20/17
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Notes:

LDC #: 38602 A4b

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: KK
2nd reviewer: CV

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-2	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

Method Blank Outlier Report

Lab Reporting Batch ID: FA43270 **Laboratory: ACTO**

EDD Filename: FA43270-SEDD_2a_1 **eQAPP Name: Arcadis_FtBliss_ALS_170316**

Method: **6010C**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MP32050-MB1	4/26/2017 1:38:00 PM	LEAD	0.13 mg/Kg	FTBL-SS-B19-0-12-041917-R-QA FTBL-SS-B44-0-12-042017-R-QA

Project Name and Number: - USACE Project: Castner Firing Range; Ft Bliss, TX

Reporting Limit Outliers

Lab Reporting Batch ID: FA43270 **Laboratory: ACTO**

EDD Filename: FA43270-SEDD_2a_1 **eQAPP Name: Arcadis_FtBliss_ALS_170316**

Method: **6010C**

Matrix: **Soil**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
FTBL-SS-B19-0-12-041917-R-QA	COPPER	JB	6.7	20	LOQ	mg/Kg	J (all detects)

Project Name and Number: - USACE Project: Castner Firing Range; Ft Bliss, TX

LDC #: 38602A4b

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 50x x dil

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 2 (5x dil)

				Sample Identification										
Analyte	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	No qualifiers (>5x)										
Sb		1.4	0.35											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1 (5x dil)

				Sample Identification										
Analyte	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	No qualifiers (>5x)										
Pb		1.1	0.275											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: 1 (20x dil)

				Sample Identification										
Analyte	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Action Level	No qualifiers (>5x)										
Cu		2.5	0.625											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 38602A4b

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: KK
2nd Reviewer:

METHOD: Metals (EPA Method 6010C/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers (Parent Only)
	FTBL-SS-B19-0-12-041917-R	1		
Copper	7.55	6.7	12	NQ
Lead	10.4	12.0	14	
Zinc	48.1	53.8	11	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers (Parent Only)
	FTBL-SS-B44-0-12-041917-R	2		
Antimony	46.8	57.5	21	
Copper	212	348	49	
Lead	6710	12600	61	J det/A
Zinc	65.9	86.9	27	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\38602A4b.wpd

NQ = no qualifier because one or both results are <LOQ

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WorkOrder: HS17041053

Closed Castner Firing Range

ARCADIS U.S., Inc.

(b) (6)
401 East Main Street, Suite 400
El Paso TX 79901

26-May-2017

10450 Stancliff Rd. Suite 210
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T: +1 281 530 5656
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May 03, 2017

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street, Suite 400
El Paso, TX 79901

Work Order: **HS17041053**

Laboratory Results for: **Closed Castner Firing Range**

Dear (b) (6),

ALS Environmental received 21 sample(s) on Apr 21, 2017 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

(b) (6)

Client:	ARCADIS U.S., Inc.	**TRRP Laboratory Data Package Cover Page**
Project:	Closed Castner Firing Range	
WorkOrder:	**HS17041053**	

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:

a) Items consistent with NELAC Chapter 5,
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:

a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

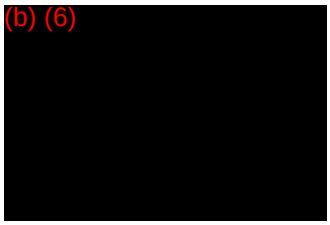
Client:	ARCADIS U.S., Inc.
Project:	Closed Castner Firing Range
WorkOrder:	**HS17041053**

TRRP Laboratory Data Package Cover Page

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

(b) (6)



Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 05/03/2017					
Project Name: Closed Castner Firing Range			Laboratory Job Number: HS17041053					
Reviewer Name: (b) (6)			Prep Batch Number(s): 115588,115623,115813,R293582,R293583					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
R1	OI	**Chain-of-custody (C-O-C)**						
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X					
		Were all departures from standard conditions described in an exception report?	X					
R2	OI	**Sample and quality control (QC) identification**						
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X					
R3	OI	**Test reports**						
		Were all samples prepared and analyzed within holding times?	X					
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X					
		Were calculations checked by a peer or supervisor?	X					
		Were all analyte identifications checked by a peer or supervisor?	X					
		Were sample detection limits reported for all analytes not detected?	X					
		Were all results for soil and sediment samples reported on a dry weight basis?	X					
		Were % moisture (or solids) reported for all soil and sediment samples?	X					
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X			
		If required for the project, TICs reported?			X			
R4	O	**Surrogate recovery data**						
		Were surrogates added prior to extraction?			X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X			
R5	OI	**Test reports/summary forms for blank samples**						
		Were appropriate type(s) of blanks analyzed?	X					
		Were blanks analyzed at the appropriate frequency?	X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X					
		Were blank concentrations < MQL?	X					
R6	OI	**Laboratory control samples (LCS):**						
		Were all COCs included in the LCS?	X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X					
		Were LCSs analyzed at the required frequency?	X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X					
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X					
		Was the LCSD RPD within QC limits?	X					
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**						
		Were the project/method specified analytes included in the MS and MSD?	X					
		Were MS/MSD analyzed at the appropriate frequency?	X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1	
		Were MS/MSD RPDs within laboratory QC limits?	X					
R8	OI	**Analytical duplicate data**						
		Were appropriate analytical duplicates analyzed for each matrix?	X					
		Were analytical duplicates analyzed at the appropriate frequency?	X					
		Were RPDs or relative standard deviations within the laboratory QC limits?	X					
R9	OI	**Method quantitation limits (MQLs):**						
		Are the MQLs for each method analyte included in the laboratory data package?	X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X					
R10	OI	**Other problems/anomalies**						
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X					
		Were all necessary corrective actions performed for the reported data?	X					
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X					

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 05/03/2017					
Project Name: Closed Castner Firing Range			Laboratory Job Number: HS17041053					
Reviewer Name: (b) (6)			Prep Batch Number(s): 115588,115623,115813,R293582,R293583					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?	X					
		Were percent RSDs or correlation coefficient criteria met?	X					
		Was the number of standards recommended in the method used for all analytes?	X					
		Were all points generated between the lowest and highest standard used to calculate the curve?	X					
		Are ICAL data available for all instruments used?	X					
		Has the initial calibration curve been verified using an appropriate second source standard?	X					
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**						
		Was the CCV analyzed at the method-required frequency?	X					
		Were percent differences for each analyte within the method-required QC limits?	X					
		Was the ICAL curve verified for each analyte?	X					
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X					
S3	O	**Mass spectral tuning:**						
		Was the appropriate compound for the method used for tuning?	X					
		Were ion abundance data within the method-required QC limits?	X					
S4	O	**Internal standards (IS):**						
		Were IS area counts and retention times within the method-required QC limits?	X					
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X					
		Were data associated with manual integrations flagged on the raw data?	X					
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?			X			
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X			
S8	I	**Interference Check Sample (ICS) results:**						
		Were percent recoveries within method QC limits?	X					
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X					
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?	X					
		Is the MDL either adjusted or supported by the analysis of DCSs?	X					
S11	OI	**Proficiency test reports:**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X					
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X					
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?	X					
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X					
		Is documentation of the analyst's competency up-to-date and on file?	X					
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)						
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X					
S16	OI	**Laboratory standard operating procedures (SOPs):**						
		Are laboratory SOPs current and on file for each method performed?	X					

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 05/03/2017
Project Name: Closed Castner Firing Range	Laboratory Job Number: HS17041053
Reviewer Name: (b) (6)	Prep Batch Number(s): 115588,115623,115813,R293582,R293583

ER#[5]	Description
1	Batch 115588, Total Metals Method SW6020, sample FTBL-SS-B13-0-12-041917-R, MS and or MSD recovered outside the control limits for Antimony and Zinc due to possible matrix interference. Batch 115623, Total Metals Method SW6020, sample FTBL-SS-B55-0-12-042017-R, MS and or MSD recovered outside the control limits for Antimony and Lead due to possible matrix interference. The MS and MSD recovery was outside of the control limit for Zinc, however, the result in the parent sample is greater than 4x the spike amount.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Work Order: HS17041053

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS17041053-01	FTBL-SS-B19-0-12-041917-R	Soil		19-Apr-2017 13:25	21-Apr-2017 08:40	☐
HS17041053-02	FTBL-SS-B20-0-12-041917-R	Soil		19-Apr-2017 13:50	21-Apr-2017 08:40	☐
HS17041053-03	FD041917	Soil		19-Apr-2017 00:00	21-Apr-2017 08:40	☐
HS17041053-04	FTBL-SS-B13-0-12-041917-R	Soil		19-Apr-2017 14:30	21-Apr-2017 08:40	☐
HS17041053-05	FTBL-SS-B14-0-12-041917-R	Soil		19-Apr-2017 14:45	21-Apr-2017 08:40	☐
HS17041053-06	FTBL-SS-B25-0-12-041917-R	Soil		19-Apr-2017 15:15	21-Apr-2017 08:40	☐
HS17041053-07	FTBL-SS-B26-0-12-041917-R	Soil		19-Apr-2017 15:30	21-Apr-2017 08:40	☐
HS17041053-08	FTBL-SS-B31-0-12-041917-R	Soil		19-Apr-2017 16:10	21-Apr-2017 08:40	☐
HS17041053-09	FTBL-SS-B31-12-24-041917-R	Soil		19-Apr-2017 16:20	21-Apr-2017 08:40	☐
HS17041053-10	FTBL-SS-B32-0-12-041917-R	Soil		19-Apr-2017 16:35	21-Apr-2017 08:40	☐
HS17041053-11	FTBL-SS-B37-0-12-042017-R	Soil		20-Apr-2017 08:30	21-Apr-2017 08:40	☐
HS17041053-12	FTBL-SS-B37-12-24-042017-R	Soil		20-Apr-2017 08:40	21-Apr-2017 08:40	☐
HS17041053-13	FTBL-SS-B38-0-12-042017-R	Soil		20-Apr-2017 09:00	21-Apr-2017 08:40	☐
HS17041053-14	FTBL-SS-B43-0-12-042017-R	Soil		20-Apr-2017 09:20	21-Apr-2017 08:40	☐
HS17041053-15	FTBL-SS-B44-0-12-042017-R	Soil		20-Apr-2017 09:35	21-Apr-2017 08:40	☐
HS17041053-16	FTBL-SS-B55-0-12-042017-R	Soil		20-Apr-2017 10:05	21-Apr-2017 08:40	☐
HS17041053-17	FD042017	Soil		20-Apr-2017 00:00	21-Apr-2017 08:40	☐
HS17041053-18	FTBL-SS-B56-0-12-042017-R	Soil		20-Apr-2017 10:20	21-Apr-2017 08:40	☐
HS17041053-19	FTBL-SS-B49-0-12-042017-R	Soil		20-Apr-2017 11:00	21-Apr-2017 08:40	☐
HS17041053-20	FTBL-SS-B50-0-12-042017-R	Soil		20-Apr-2017 11:20	21-Apr-2017 08:40	☐
HS17041053-21	FTBL-SS-B50-12-24-042017-R	Soil		20-Apr-2017 11:30	21-Apr-2017 08:40	☐

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B19-0-12-041917-R
Collection Date: 19-Apr-2017 13:25

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-01
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	0.232	U	0.186	0.232	0.464	mg/Kg-dry	1	25-Apr-2017 00:48
Copper	**7.55**		**0.0928**	**0.0928**	**0.186**	**mg/Kg-dry**	1	25-Apr-2017 00:48
Lead	**10.4**		**0.0464**	**0.0928**	**0.464**	**mg/Kg-dry**	1	25-Apr-2017 00:48
Zinc	**48.1**		**0.232**	**0.464**	**0.464**	**mg/Kg-dry**	1	25-Apr-2017 00:48
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.03**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B20-0-12-041917-R
Collection Date: 19-Apr-2017 13:50

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-02
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	0.232	U	0.186	0.232	0.465	mg/Kg-dry	1	25-Apr-2017 00:53
Copper	**12.0**		**0.0930**	**0.0930**	**0.186**	**mg/Kg-dry**	1	25-Apr-2017 00:53
Lead	**14.4**		**0.0465**	**0.0930**	**0.465**	**mg/Kg-dry**	1	25-Apr-2017 00:53
Zinc	**51.8**		**0.232**	**0.465**	**0.465**	**mg/Kg-dry**	1	25-Apr-2017 00:53
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**0.641**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FD041917
Collection Date: 19-Apr-2017 00:00

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-03
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	0.241	U	0.193	0.241	0.482	mg/Kg-dry	1	25-Apr-2017 00:58
Copper	**6.95**		**0.0963**	**0.0963**	**0.193**	**mg/Kg-dry**	1	25-Apr-2017 00:58
Lead	**9.89**		**0.0482**	**0.0963**	**0.482**	**mg/Kg-dry**	1	25-Apr-2017 00:58
Zinc	**44.6**		**0.241**	**0.482**	**0.482**	**mg/Kg-dry**	1	25-Apr-2017 00:58
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.35**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B13-0-12-041917-R
Collection Date: 19-Apr-2017 14:30

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-04
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	0.241	U	0.193	0.241	0.482	mg/Kg-dry	1	25-Apr-2017 00:16
Copper	**8.14**		**0.0965**	**0.0965**	**0.193**	**mg/Kg-dry**	1	25-Apr-2017 00:16
Lead	**8.71**		**0.0482**	**0.0965**	**0.482**	**mg/Kg-dry**	1	25-Apr-2017 00:16
Zinc	**34.8**		**0.241**	**0.482**	**0.482**	**mg/Kg-dry**	1	25-Apr-2017 00:16
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**2.08**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B14-0-12-041917-R
Collection Date: 19-Apr-2017 14:45

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-05
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	0.242	U	0.194	0.242	0.484	mg/Kg-dry	1	25-Apr-2017 01:02
Copper	**7.31**		**0.0968**	**0.0968**	**0.194**	**mg/Kg-dry**	1	25-Apr-2017 01:02
Lead	**6.03**		**0.0484**	**0.0968**	**0.484**	**mg/Kg-dry**	1	25-Apr-2017 01:02
Zinc	**30.0**		**0.242**	**0.484**	**0.484**	**mg/Kg-dry**	1	25-Apr-2017 01:02
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.34**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B25-0-12-041917-R
Collection Date: 19-Apr-2017 15:15

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-06
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	0.236	U	0.189	0.236	0.473	mg/Kg-dry	1	25-Apr-2017 01:07
Copper	**11.8**		**0.0945**	**0.0945**	**0.189**	**mg/Kg-dry**	1	25-Apr-2017 01:07
Lead	**17.0**		**0.0473**	**0.0945**	**0.473**	**mg/Kg-dry**	1	25-Apr-2017 01:07
Zinc	**83.4**		**0.236**	**0.473**	**0.473**	**mg/Kg-dry**	1	25-Apr-2017 01:07
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**0.794**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B26-0-12-041917-R
Collection Date: 19-Apr-2017 15:30

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-07
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	0.231	U	0.185	0.231	0.462	mg/Kg-dry	1	25-Apr-2017 01:12
Copper	**11.6**		**0.0923**	**0.0923**	**0.185**	**mg/Kg-dry**	1	25-Apr-2017 01:12
Lead	**20.5**		**0.0462**	**0.0923**	**0.462**	**mg/Kg-dry**	1	25-Apr-2017 01:12
Zinc	**88.8**		**0.231**	**0.462**	**0.462**	**mg/Kg-dry**	1	25-Apr-2017 01:12
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**0.740**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B31-0-12-041917-R
Collection Date: 19-Apr-2017 16:10

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-08
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	0.236	U	0.189	0.236	0.473	mg/Kg-dry	1	25-Apr-2017 01:26
Copper	**12.2**		**0.0945**	**0.0945**	**0.189**	**mg/Kg-dry**	1	25-Apr-2017 01:26
Lead	**18.0**		**0.0473**	**0.0945**	**0.473**	**mg/Kg-dry**	1	25-Apr-2017 01:26
Zinc	**34.9**		**0.236**	**0.473**	**0.473**	**mg/Kg-dry**	1	25-Apr-2017 01:26
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**2.26**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B31-12-24-041917-R
Collection Date: 19-Apr-2017 16:20

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-09
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	0.243	U	0.195	0.243	0.487	mg/Kg-dry	1	25-Apr-2017 01:30
Copper	**10.9**		**0.0974**	**0.0974**	**0.195**	**mg/Kg-dry**	1	25-Apr-2017 01:30
Lead	**19.3**		**0.0487**	**0.0974**	**0.487**	**mg/Kg-dry**	1	25-Apr-2017 01:30
Zinc	**31.3**		**0.243**	**0.487**	**0.487**	**mg/Kg-dry**	1	25-Apr-2017 01:30
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**5.20**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B32-0-12-041917-R
Collection Date: 19-Apr-2017 16:35

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-10
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**				Prep:SW3050A / 24-Apr-2017			Analyst: JDE
Antimony	**0.215**	J	**0.190**	**0.237**	**0.474**	**mg/Kg-dry**	1	25-Apr-2017 01:35
Copper	**14.5**		**0.0948**	**0.0948**	**0.190**	**mg/Kg-dry**	1	25-Apr-2017 01:35
Lead	**26.6**		**0.0474**	**0.0948**	**0.474**	**mg/Kg-dry**	1	25-Apr-2017 01:35
Zinc	**36.2**		**0.237**	**0.474**	**0.474**	**mg/Kg-dry**	1	25-Apr-2017 01:35
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.07**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B37-0-12-042017-R
Collection Date: 20-Apr-2017 08:30

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-11
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A	**Method:SW1311/6020**		Leache:SW1311 / 28-Apr-2017			Prep:SW3010A / 01-May-2017		Analyst: RPM
Lead	**4.66**		**0.00600**	**0.0100**	**0.0500**	**mg/L**	1	02-May-2017 12:50
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	**7.41**		**0.185**	**0.231**	**0.463**	**mg/Kg-dry**	1	25-Apr-2017 01:40
Copper	**33.7**		**0.0926**	**0.0926**	**0.185**	**mg/Kg-dry**	1	25-Apr-2017 01:40
Lead	**526**		**0.463**	**0.926**	**4.63**	**mg/Kg-dry**	10	25-Apr-2017 13:41
Zinc	**51.2**		**0.231**	**0.463**	**0.463**	**mg/Kg-dry**	1	25-Apr-2017 01:40
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.33**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B37-12-24-042017-R
Collection Date: 20-Apr-2017 08:40

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-12
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	**3.49**		**0.193**	**0.241**	**0.483**	**mg/Kg-dry**	1	25-Apr-2017 01:44
Copper	**20.9**		**0.0966**	**0.0966**	**0.193**	**mg/Kg-dry**	1	25-Apr-2017 01:44
Lead	**360**		**0.483**	**0.966**	**4.83**	**mg/Kg-dry**	10	25-Apr-2017 13:46
Zinc	**46.1**		**0.241**	**0.483**	**0.483**	**mg/Kg-dry**	1	25-Apr-2017 01:44
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.95**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B38-0-12-042017-R
Collection Date: 20-Apr-2017 09:00

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-13
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 24-Apr-2017		Analyst: JDE
Antimony	**1.16**		**0.184**	**0.230**	**0.461**	**mg/Kg-dry**	1	25-Apr-2017 01:49
Copper	**27.9**		**0.0921**	**0.0921**	**0.184**	**mg/Kg-dry**	1	25-Apr-2017 01:49
Lead	**272**		**0.461**	**0.921**	**4.61**	**mg/Kg-dry**	10	25-Apr-2017 13:50
Zinc	**52.0**		**0.230**	**0.461**	**0.461**	**mg/Kg-dry**	1	25-Apr-2017 01:49
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**0.643**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B43-0-12-042017-R
Collection Date: 20-Apr-2017 09:20

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-14
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 25-Apr-2017		Analyst: JDE
Antimony	**5.52**		**0.193**	**0.241**	**0.481**	**mg/Kg-dry**	1	25-Apr-2017 19:37
Copper	**27.4**		**0.0963**	**0.0963**	**0.193**	**mg/Kg-dry**	1	25-Apr-2017 19:37
Lead	**317**		**0.481**	**0.963**	**4.81**	**mg/Kg-dry**	10	26-Apr-2017 12:50
Zinc	**44.8**		**0.241**	**0.481**	**0.481**	**mg/Kg-dry**	1	25-Apr-2017 19:37
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.00**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B44-0-12-042017-R
Collection Date: 20-Apr-2017 09:35

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-15
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A	**Method:SW1311/6020**		Leache:SW1311 / 28-Apr-2017			Prep:SW3010A / 01-May-2017		Analyst: RPM
Lead	**151**		**0.600**	**1.00**	**5.00**	**mg/L**	100	02-May-2017 15:10
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 25-Apr-2017		Analyst: JDE
Antimony	**46.8**		**0.191**	**0.238**	**0.477**	**mg/Kg-dry**	1	25-Apr-2017 19:41
Copper	**212**		**4.77**	**4.77**	**9.54**	**mg/Kg-dry**	50	26-Apr-2017 12:54
Lead	**6,710**		**2.38**	**4.77**	**23.8**	**mg/Kg-dry**	50	26-Apr-2017 12:54
Zinc	**65.9**		**0.238**	**0.477**	**0.477**	**mg/Kg-dry**	1	25-Apr-2017 19:41
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**0.642**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B55-0-12-042017-R
Collection Date: 20-Apr-2017 10:05

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-16
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 25-Apr-2017		Analyst: JDE
Antimony	0.235	U	0.188	0.235	0.470	mg/Kg-dry	1	25-Apr-2017 19:14
Copper	**8.78**		**0.0941**	**0.0941**	**0.188**	**mg/Kg-dry**	1	25-Apr-2017 19:14
Lead	**13.1**		**0.0470**	**0.0941**	**0.470**	**mg/Kg-dry**	1	25-Apr-2017 19:14
Zinc	**42.6**		**0.235**	**0.470**	**0.470**	**mg/Kg-dry**	1	25-Apr-2017 19:14
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.02**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FD042017
Collection Date: 20-Apr-2017 00:00

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-17
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 25-Apr-2017		Analyst: JDE
Antimony	**39.2**		**0.186**	**0.233**	**0.465**	**mg/Kg-dry**	1	25-Apr-2017 19:45
Copper	**141**		**0.0930**	**0.0930**	**0.186**	**mg/Kg-dry**	1	25-Apr-2017 19:45
Lead	**5,600**		**2.33**	**4.65**	**23.3**	**mg/Kg-dry**	50	26-Apr-2017 12:59
Zinc	**64.1**		**0.233**	**0.465**	**0.465**	**mg/Kg-dry**	1	25-Apr-2017 19:45
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**0.570**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B56-0-12-042017-R
Collection Date: 20-Apr-2017 10:20

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-18
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**				Prep:SW3050A / 25-Apr-2017			Analyst: JDE
Antimony	**0.307**	J	**0.185**	**0.231**	**0.462**	**mg/Kg-dry**	1	25-Apr-2017 19:50
Copper	**8.28**		**0.0924**	**0.0924**	**0.185**	**mg/Kg-dry**	1	25-Apr-2017 19:50
Lead	**16.5**		**0.0462**	**0.0924**	**0.462**	**mg/Kg-dry**	1	25-Apr-2017 19:50
Zinc	**36.9**		**0.231**	**0.462**	**0.462**	**mg/Kg-dry**	1	25-Apr-2017 19:50
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.10**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B49-0-12-042017-R
Collection Date: 20-Apr-2017 11:00

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-19
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 25-Apr-2017		Analyst: JDE
Antimony	**0.230**	J	**0.194**	**0.242**	**0.485**	**mg/Kg-dry**	1	25-Apr-2017 21:14
Copper	**9.32**		**0.0970**	**0.0970**	**0.194**	**mg/Kg-dry**	1	25-Apr-2017 21:14
Lead	**16.1**		**0.0485**	**0.0970**	**0.485**	**mg/Kg-dry**	1	25-Apr-2017 21:14
Zinc	**41.1**		**0.242**	**0.485**	**0.485**	**mg/Kg-dry**	1	25-Apr-2017 21:14
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**1.92**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B50-0-12-042017-R
Collection Date: 20-Apr-2017 11:20

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-20
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 25-Apr-2017		Analyst: JDE
Antimony	**0.236**	J	**0.193**	**0.241**	**0.482**	**mg/Kg-dry**	1	25-Apr-2017 21:18
Copper	**9.81**		**0.0965**	**0.0965**	**0.193**	**mg/Kg-dry**	1	25-Apr-2017 21:18
Lead	**21.6**		**0.0482**	**0.0965**	**0.482**	**mg/Kg-dry**	1	25-Apr-2017 21:18
Zinc	**36.8**		**0.241**	**0.482**	**0.482**	**mg/Kg-dry**	1	25-Apr-2017 21:18
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**2.17**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Sample ID: FTBL-SS-B50-12-24-042017-R
Collection Date: 20-Apr-2017 11:30

ANALYTICAL REPORT
WorkOrder:HS17041053
Lab ID:HS17041053-21
Matrix:Soil

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A	**Method:SW6020**					Prep:SW3050A / 25-Apr-2017		Analyst: JDE
Antimony	**0.219**	J	**0.195**	**0.244**	**0.488**	**mg/Kg-dry**	1	25-Apr-2017 21:23
Copper	**9.80**		**0.0976**	**0.0976**	**0.195**	**mg/Kg-dry**	1	25-Apr-2017 21:23
Lead	**23.6**		**0.0488**	**0.0976**	**0.488**	**mg/Kg-dry**	1	25-Apr-2017 21:23
Zinc	**35.7**		**0.244**	**0.488**	**0.488**	**mg/Kg-dry**	1	25-Apr-2017 21:23
MOISTURE - ASTM D2216	**Method:ASTM D2216**							Analyst: DFF
Percent Moisture	**4.87**		**0.0100**	**0.0100**	**0.0100**	**wt%**	1	24-Apr-2017 11:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

WEIGHT LOG

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Batch ID: 115588 **Method:** METALS BY SW6020A **Prep:** 3050_I_LOW

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS17041053-01	1	0.5442	50 (mL)	91.88
HS17041053-02	1	0.5413	50 (mL)	92.37
HS17041053-03	1	0.5263	50 (mL)	95
HS17041053-04	1	0.5293	50 (mL)	94.46
HS17041053-05	1	0.5234	50 (mL)	95.53
HS17041053-06	1	0.5331	50 (mL)	93.79
HS17041053-07	1	0.5457	50 (mL)	91.63
HS17041053-08	1	0.5412	50 (mL)	92.39
HS17041053-09	1	0.5416	50 (mL)	92.32
HS17041053-10	1	0.5331	50 (mL)	93.79
HS17041053-11	1	0.5474	50 (mL)	91.34
HS17041053-12	1	0.5281	50 (mL)	94.68
HS17041053-13	1	0.5463	50 (mL)	91.52

Batch ID: 115623 **Method:** METALS BY SW6020A **Prep:** 3050_I_LOW

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS17041053-14	1	0.5245	50 (mL)	95.33
HS17041053-15	1	0.5277	50 (mL)	94.75
HS17041053-16	1	0.5371	50 (mL)	93.09
HS17041053-17	1	0.5407	50 (mL)	92.47
HS17041053-18	1	0.5472	50 (mL)	91.37
HS17041053-19	1	0.5257	50 (mL)	95.11
HS17041053-20	1	0.5298	50 (mL)	94.38
HS17041053-21	1	0.5383	50 (mL)	92.89

Batch ID: 115813 **Method:** TCLP METALS BY SW6020A **Prep:** 3010A_TCLP

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS17041053-11	1	1	10 (mL)	10
HS17041053-15	1	1	10 (mL)	10

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 115588	**Test Name :** METALS BY SW6020A			**Matrix:** Soil		
HS17041053-01	FTBL-SS-B19-0-12-041917-R	19 Apr 2017 13:25		24 Apr 2017 14:30	25 Apr 2017 00:48	1
HS17041053-02	FTBL-SS-B20-0-12-041917-R	19 Apr 2017 13:50		24 Apr 2017 14:30	25 Apr 2017 00:53	1
HS17041053-03	FD041917	19 Apr 2017 00:00		24 Apr 2017 14:30	25 Apr 2017 00:58	1
HS17041053-04	FTBL-SS-B13-0-12-041917-R	19 Apr 2017 14:30		24 Apr 2017 14:30	25 Apr 2017 00:16	1
HS17041053-05	FTBL-SS-B14-0-12-041917-R	19 Apr 2017 14:45		24 Apr 2017 14:30	25 Apr 2017 01:02	1
HS17041053-06	FTBL-SS-B25-0-12-041917-R	19 Apr 2017 15:15		24 Apr 2017 14:30	25 Apr 2017 01:07	1
HS17041053-07	FTBL-SS-B26-0-12-041917-R	19 Apr 2017 15:30		24 Apr 2017 14:30	25 Apr 2017 01:12	1
HS17041053-08	FTBL-SS-B31-0-12-041917-R	19 Apr 2017 16:10		24 Apr 2017 14:30	25 Apr 2017 01:26	1
HS17041053-09	FTBL-SS-B31-12-24-041917-R	19 Apr 2017 16:20		24 Apr 2017 14:30	25 Apr 2017 01:30	1
HS17041053-10	FTBL-SS-B32-0-12-041917-R	19 Apr 2017 16:35		24 Apr 2017 14:30	25 Apr 2017 01:35	1
HS17041053-11	FTBL-SS-B37-0-12-042017-R	20 Apr 2017 08:30		24 Apr 2017 14:30	25 Apr 2017 13:41	10
HS17041053-11	FTBL-SS-B37-0-12-042017-R	20 Apr 2017 08:30		24 Apr 2017 14:30	25 Apr 2017 01:40	1
HS17041053-12	FTBL-SS-B37-12-24-042017-R	20 Apr 2017 08:40		24 Apr 2017 14:30	25 Apr 2017 13:46	10
HS17041053-12	FTBL-SS-B37-12-24-042017-R	20 Apr 2017 08:40		24 Apr 2017 14:30	25 Apr 2017 01:44	1
HS17041053-13	FTBL-SS-B38-0-12-042017-R	20 Apr 2017 09:00		24 Apr 2017 14:30	25 Apr 2017 13:50	10
HS17041053-13	FTBL-SS-B38-0-12-042017-R	20 Apr 2017 09:00		24 Apr 2017 14:30	25 Apr 2017 01:49	1
Batch ID 115623	**Test Name :** METALS BY SW6020A			**Matrix:** Soil		
HS17041053-14	FTBL-SS-B43-0-12-042017-R	20 Apr 2017 09:20		25 Apr 2017 02:00	26 Apr 2017 12:50	10
HS17041053-14	FTBL-SS-B43-0-12-042017-R	20 Apr 2017 09:20		25 Apr 2017 02:00	25 Apr 2017 19:37	1
HS17041053-15	FTBL-SS-B44-0-12-042017-R	20 Apr 2017 09:35		25 Apr 2017 02:00	26 Apr 2017 12:54	50
HS17041053-15	FTBL-SS-B44-0-12-042017-R	20 Apr 2017 09:35		25 Apr 2017 02:00	25 Apr 2017 19:41	1
HS17041053-16	FTBL-SS-B55-0-12-042017-R	20 Apr 2017 10:05		25 Apr 2017 02:00	25 Apr 2017 19:14	1
HS17041053-17	FD042017	20 Apr 2017 00:00		25 Apr 2017 02:00	26 Apr 2017 12:59	50
HS17041053-17	FD042017	20 Apr 2017 00:00		25 Apr 2017 02:00	25 Apr 2017 19:45	1
HS17041053-18	FTBL-SS-B56-0-12-042017-R	20 Apr 2017 10:20		25 Apr 2017 02:00	25 Apr 2017 19:50	1
HS17041053-19	FTBL-SS-B49-0-12-042017-R	20 Apr 2017 11:00		25 Apr 2017 02:00	25 Apr 2017 21:14	1
HS17041053-20	FTBL-SS-B50-0-12-042017-R	20 Apr 2017 11:20		25 Apr 2017 02:00	25 Apr 2017 21:18	1
HS17041053-21	FTBL-SS-B50-12-24-042017-R	20 Apr 2017 11:30		25 Apr 2017 02:00	25 Apr 2017 21:23	1
Batch ID 115813	**Test Name :** TCLP METALS BY SW6020A			**Matrix:** Soil		
HS17041053-11	FTBL-SS-B37-0-12-042017-R	20 Apr 2017 08:30	28 Apr 2017 16:00	01 May 2017 15:30	02 May 2017 12:50	1
HS17041053-15	FTBL-SS-B44-0-12-042017-R	20 Apr 2017 09:35	28 Apr 2017 16:00	01 May 2017 15:30	02 May 2017 15:10	100

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R293582	**Test Name :** MOISTURE - ASTM D2216			**Matrix:** Soil		
HS17041053-01	FTBL-SS-B19-0-12-041917-R	19 Apr 2017 13:25			24 Apr 2017 11:50	1
HS17041053-02	FTBL-SS-B20-0-12-041917-R	19 Apr 2017 13:50			24 Apr 2017 11:50	1
HS17041053-03	FD041917	19 Apr 2017 00:00			24 Apr 2017 11:50	1
HS17041053-04	FTBL-SS-B13-0-12-041917-R	19 Apr 2017 14:30			24 Apr 2017 11:50	1
HS17041053-05	FTBL-SS-B14-0-12-041917-R	19 Apr 2017 14:45			24 Apr 2017 11:50	1
HS17041053-06	FTBL-SS-B25-0-12-041917-R	19 Apr 2017 15:15			24 Apr 2017 11:50	1
HS17041053-07	FTBL-SS-B26-0-12-041917-R	19 Apr 2017 15:30			24 Apr 2017 11:50	1
HS17041053-08	FTBL-SS-B31-0-12-041917-R	19 Apr 2017 16:10			24 Apr 2017 11:50	1
HS17041053-09	FTBL-SS-B31-12-24-041917-R	19 Apr 2017 16:20			24 Apr 2017 11:50	1
HS17041053-10	FTBL-SS-B32-0-12-041917-R	19 Apr 2017 16:35			24 Apr 2017 11:50	1
HS17041053-11	FTBL-SS-B37-0-12-042017-R	20 Apr 2017 08:30			24 Apr 2017 11:50	1
HS17041053-12	FTBL-SS-B37-12-24-042017-R	20 Apr 2017 08:40			24 Apr 2017 11:50	1
HS17041053-13	FTBL-SS-B38-0-12-042017-R	20 Apr 2017 09:00			24 Apr 2017 11:50	1
HS17041053-14	FTBL-SS-B43-0-12-042017-R	20 Apr 2017 09:20			24 Apr 2017 11:50	1
HS17041053-15	FTBL-SS-B44-0-12-042017-R	20 Apr 2017 09:35			24 Apr 2017 11:50	1
HS17041053-16	FTBL-SS-B55-0-12-042017-R	20 Apr 2017 10:05			24 Apr 2017 11:50	1
Batch ID R293583	**Test Name :** MOISTURE - ASTM D2216			**Matrix:** Soil		
HS17041053-17	FD042017	20 Apr 2017 00:00			24 Apr 2017 11:52	1
HS17041053-18	FTBL-SS-B56-0-12-042017-R	20 Apr 2017 10:20			24 Apr 2017 11:52	1
HS17041053-19	FTBL-SS-B49-0-12-042017-R	20 Apr 2017 11:00			24 Apr 2017 11:52	1
HS17041053-20	FTBL-SS-B50-0-12-042017-R	20 Apr 2017 11:20			24 Apr 2017 11:52	1
HS17041053-21	FTBL-SS-B50-12-24-042017-R	20 Apr 2017 11:30			24 Apr 2017 11:52	1

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

QC BATCH REPORT

Batch ID: 115588 **Instrument: ICPMS04** **Method: SW6020**

MBLK Sample ID: **MBLK-115588** Units: **mg/Kg** Analysis Date: **24-Apr-2017 23:57**
Client ID: Run ID: **ICPMS04_293517** SeqNo: **4067197** PrepDate: **24-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.250	0.500								U
Copper	0.100	0.200								U
Lead	0.100	0.500								U
Zinc	0.500	0.500								U

LCS Sample ID: **LCS-115588** Units: **mg/Kg** Analysis Date: **25-Apr-2017 00:02**
Client ID: Run ID: **ICPMS04_293517** SeqNo: **4067198** PrepDate: **24-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	10.35	0.500	10	0	103	80 - 120				
Copper	10	0.200	10	0	100	80 - 120				
Lead	9.774	0.500	10	0	97.7	80 - 120				
Zinc	9.907	0.500	10	0	99.1	80 - 120				

MS Sample ID: **HS17041053-04MS** Units: **mg/Kg** Analysis Date: **25-Apr-2017 00:25**
Client ID: **FTBL-SS-B13-0-12-041917-R** Run ID: **ICPMS04_293517** SeqNo: **4067211** PrepDate: **24-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	5.037	0.473	9.464	0.1118	52.0	75 - 125				S
Copper	17.08	0.189	9.464	7.972	96.2	75 - 125				
Lead	18.08	0.473	9.464	8.529	101	75 - 125				
Zinc	46.7	0.473	9.464	34.1	133	75 - 125				S

MSD Sample ID: **HS17041053-04MSD** Units: **mg/Kg** Analysis Date: **25-Apr-2017 00:30**
Client ID: **FTBL-SS-B13-0-12-041917-R** Run ID: **ICPMS04_293517** SeqNo: **4067212** PrepDate: **24-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	5.026	0.473	9.45	0.1118	52.0	75 - 125	5.037	0.232	20	S
Copper	17.14	0.189	9.45	7.972	97.0	75 - 125	17.08	0.332	20	
Lead	17.62	0.473	9.45	8.529	96.2	75 - 125	18.08	2.58	20	
Zinc	45.78	0.473	9.45	34.1	124	75 - 125	46.7	2	20	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

QC BATCH REPORT

Batch ID: 115588 **Instrument: ICPMS04** **Method: SW6020**

PDS Sample ID: **HS17041053-04PDS** Units: **mg/Kg** Analysis Date: **25-Apr-2017 00:34**
Client ID: **FTBL-SS-B13-0-12-041917-R** Run ID: **ICPMS04_293517** SeqNo: **4067213** PrepDate: **24-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	8.963	0.472	9.446	0.1118	93.7	75 - 125				
Copper	15.95	0.189	9.446	7.972	84.5	75 - 125				
Lead	17.13	0.472	9.446	8.529	91.1	75 - 125				

SD Sample ID: **HS17041053-04SD** Units: **mg/Kg** Analysis Date: **25-Apr-2017 00:20**
Client ID: **FTBL-SS-B13-0-12-041917-R** Run ID: **ICPMS04_293517** SeqNo: **4067210** PrepDate: **24-Apr-2017** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Antimony	1.18	2.36					0.1118	0	10	U
Copper	8.284	0.945					7.972	3.91	10	
Lead	8.664	2.36					8.529	1.59	10	
Zinc	35.76	2.36					34.1	4.88	10	

The following samples were analyzed in this batch:

HS17041053-01	HS17041053-02	HS17041053-03	HS17041053-04
HS17041053-05	HS17041053-06	HS17041053-07	HS17041053-08
HS17041053-09	HS17041053-10	HS17041053-11	HS17041053-12
HS17041053-13			

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

QC BATCH REPORT

Batch ID: 115623 **Instrument: ICPMS04** **Method: SW6020**

MBLK Sample ID: **MBLK-115623** Units: **mg/Kg** Analysis Date: **25-Apr-2017 18:34**
Client ID: Run ID: **ICPMS04_293605** SeqNo: **4068664** PrepDate: **25-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.250	0.500								U
Copper	0.100	0.200								U
Lead	0.100	0.500								U
Zinc	0.500	0.500								U

LCS Sample ID: **LCS-115623** Units: **mg/Kg** Analysis Date: **25-Apr-2017 18:39**
Client ID: Run ID: **ICPMS04_293605** SeqNo: **4068665** PrepDate: **25-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	9.983	0.500	10	0	99.8	80 - 120				
Copper	9.806	0.200	10	0	98.1	80 - 120				
Lead	10.39	0.500	10	0	104	80 - 120				
Zinc	9.892	0.500	10	0	98.9	80 - 120				

MS Sample ID: **HS17041053-16MS** Units: **mg/Kg** Analysis Date: **25-Apr-2017 19:23**
Client ID: **FTBL-SS-B55-0-12-042017-R** Run ID: **ICPMS04_293605** SeqNo: **4068675** PrepDate: **25-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	4.51	0.469	9.386	0.1381	46.6	75 - 125				S
Copper	17.47	0.188	9.386	8.694	93.5	75 - 125				
Lead	27.95	0.469	9.386	13.01	159	75 - 125				S
Zinc	58.92	0.469	9.386	42.14	179	75 - 125				SO

MSD Sample ID: **HS17041053-16MSD** Units: **mg/Kg** Analysis Date: **25-Apr-2017 19:28**
Client ID: **FTBL-SS-B55-0-12-042017-R** Run ID: **ICPMS04_293605** SeqNo: **4068676** PrepDate: **25-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	4.705	0.468	9.367	0.1381	48.8	75 - 125	4.51	4.22	20	S
Copper	17.18	0.187	9.367	8.694	90.6	75 - 125	17.47	1.68	20	
Lead	23.94	0.468	9.367	13.01	117	75 - 125	27.95	15.4	20	
Zinc	54.77	0.468	9.367	42.14	135	75 - 125	58.92	7.3	20	SO

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

QC BATCH REPORT

Batch ID: 115623 **Instrument: ICPMS04** **Method: SW6020**

PDS Sample ID: **HS17041053-16PDS** Units: **mg/Kg** Analysis Date: **25-Apr-2017 19:32**
Client ID: **FTBL-SS-B55-0-12-042017-R** Run ID: **ICPMS04_293605** SeqNo: **4068677** PrepDate: **25-Apr-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	9.131	0.465	9.309	0.1381	96.6	75 - 125				
Copper	17.13	0.186	9.309	8.694	90.6	75 - 125				
Lead	22.11	0.465	9.309	13.01	97.7	75 - 125				
Zinc	50.21	0.465	9.309	42.14	86.7	75 - 125				O

SD Sample ID: **HS17041053-16SD** Units: **mg/Kg** Analysis Date: **25-Apr-2017 19:19**
Client ID: **FTBL-SS-B55-0-12-042017-R** Run ID: **ICPMS04_293605** SeqNo: **4068674** PrepDate: **25-Apr-2017** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Antimony	1.16	2.33					0.1381	0	10	U
Copper	9.56	0.931					8.694	9.96	10	
Lead	12.85	2.33					13.01	1.28	10	
Zinc	44.45	2.33					42.14	5.49	10	

The following samples were analyzed in this batch:

HS17041053-14	HS17041053-15	HS17041053-16	HS17041053-17
HS17041053-18	HS17041053-19	HS17041053-20	HS17041053-21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

QC BATCH REPORT

Batch ID: 115813 **Instrument: ICPMS05** **Method: SW1311/6020**

MBLK Sample ID: **MBLKT1-115813** Units: **mg/L** Analysis Date: **02-May-2017 12:41**
Client ID: Run ID: **ICPMS05_293996** SeqNo: **4076018** PrepDate: **01-May-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.0100	0.0500								U

MBLK Sample ID: **MBLK-115813** Units: **mg/L** Analysis Date: **02-May-2017 12:44**
Client ID: Run ID: **ICPMS05_293996** SeqNo: **4076019** PrepDate: **01-May-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.00100	0.00500								U

LCS Sample ID: **LCS-115813** Units: **mg/L** Analysis Date: **02-May-2017 12:47**
Client ID: Run ID: **ICPMS05_293996** SeqNo: **4076020** PrepDate: **01-May-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.0487	0.00500	0.05	0	97.4	80 - 120				

MS Sample ID: **HS17041260-01MS** Units: **mg/L** Analysis Date: **02-May-2017 13:14**
Client ID: Run ID: **ICPMS05_293996** SeqNo: **4076029** PrepDate: **01-May-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.5676	0.0500	0.5	0.08991	95.5	80 - 120				

MSD Sample ID: **HS17041260-01MSD** Units: **mg/L** Analysis Date: **02-May-2017 13:17**
Client ID: Run ID: **ICPMS05_293996** SeqNo: **4076030** PrepDate: **01-May-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.5895	0.0500	0.5	0.08991	99.9	80 - 120	0.5676	3.8	20	

PDS Sample ID: **HS17041260-01PDS** Units: **mg/L** Analysis Date: **02-May-2017 13:20**
Client ID: Run ID: **ICPMS05_293996** SeqNo: **4076031** PrepDate: **01-May-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.9865	0.0500	1	0.08991	89.7	75 - 125				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

QC BATCH REPORT

Batch ID: 115813 **Instrument: ICPMS05** **Method: SW1311/6020**

SD Sample ID: **HS17041260-01SD** Units: **mg/L** Analysis Date: **02-May-2017 13:11**
Client ID: Run ID: **ICPMS05_293996** SeqNo: **4076028** PrepDate: **01-May-2017** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Lead	0.1332	0.250					0.08991	0	10	J

The following samples were analyzed in this batch: HS17041053-11 HS17041053-15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

QC BATCH REPORT

Batch ID: R293582 **Instrument:** Balance1 **Method:** ASTM D2216

DUP Sample ID: **HS17041053-16DUP** Units: **wt%** Analysis Date: **24-Apr-2017 11:50**
Client ID: **FTBL-SS-B55-0-12-042017-R** Run ID: **Balance1_293582** SeqNo: **4067013** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	1.06	0.0100					1.02	3.85	20	

The following samples were analyzed in this batch:

HS17041053-01	HS17041053-02	HS17041053-03	HS17041053-04
HS17041053-05	HS17041053-06	HS17041053-07	HS17041053-08
HS17041053-09	HS17041053-10	HS17041053-11	HS17041053-12
HS17041053-13	HS17041053-14	HS17041053-15	HS17041053-16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

QC BATCH REPORT

Batch ID: R293583 **Instrument:** Balance1 **Method:** ASTM D2216

DUP Sample ID: **HS17041053-21DUP** Units: **wt%** Analysis Date: **24-Apr-2017 11:52**
Client ID: **FTBL-SS-B50-12-24-042017-R** Run ID: **Balance1_293583** SeqNo: **4067019** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	4.8	0.0100					4.87	1.45	20	

The following samples were analyzed in this batch: HS17041053-17 HS17041053-18 HS17041053-19 HS17041053-20 HS17041053-21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: **HS17041053**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
Date	
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	17-027-0	27-Mar-2018
California	2919 2016-2018	31-Jul-2018
Illinois	004112	09-May-2018
Kansas	E-10352 2016-2017	31-Jul-2017
Louisiana	03087 2016-2017	30-Jun-2017
North Carolina	624-2017	31-Dec-2017
Oklahoma	2016-122	31-Aug-2017
Texas	T104704231-17-18	30-Apr-2018

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
Work Order: HS17041053

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS17041053-01	FTBL-SS-B19-0-12-041917-R	Login	4/21/2017 4:34:06 PM	DJW	SPA157
HS17041053-02	FTBL-SS-B20-0-12-041917-R	Login	4/21/2017 4:34:06 PM	DJW	SPA157
HS17041053-03	FD041917	Login	4/21/2017 4:34:06 PM	DJW	SPA157
HS17041053-04	FTBL-SS-B13-0-12-041917-R	Login	4/21/2017 4:34:06 PM	DJW	SPA157
HS17041053-05	FTBL-SS-B14-0-12-041917-R	Login	4/21/2017 4:34:06 PM	DJW	SPA157
HS17041053-06	FTBL-SS-B25-0-12-041917-R	Login	4/21/2017 4:34:07 PM	DJW	SPA157
HS17041053-07	FTBL-SS-B26-0-12-041917-R	Login	4/21/2017 4:34:07 PM	DJW	SPA157
HS17041053-08	FTBL-SS-B31-0-12-041917-R	Login	4/21/2017 4:34:07 PM	DJW	SPA157
HS17041053-09	FTBL-SS-B31-12-24-041917-R	Login	4/21/2017 4:34:07 PM	DJW	SPA157
HS17041053-10	FTBL-SS-B32-0-12-041917-R	Login	4/21/2017 4:34:07 PM	DJW	SPA157
HS17041053-11	FTBL-SS-B37-0-12-042017-R	Login	4/21/2017 4:34:07 PM	DJW	SPA157
HS17041053-12	FTBL-SS-B37-12-24-042017-R	Login	4/21/2017 4:34:07 PM	DJW	SPA157
HS17041053-13	FTBL-SS-B38-0-12-042017-R	Login	4/21/2017 4:34:08 PM	DJW	SPA157
HS17041053-14	FTBL-SS-B43-0-12-042017-R	Login	4/21/2017 4:34:08 PM	DJW	SPA157
HS17041053-15	FTBL-SS-B44-0-12-042017-R	Login	4/21/2017 4:34:08 PM	DJW	SPA158
HS17041053-16	FTBL-SS-B55-0-12-042017-R	Login	4/21/2017 4:34:08 PM	DJW	SPA158
HS17041053-17	FD042017	Login	4/21/2017 4:34:08 PM	DJW	SPA158
HS17041053-18	FTBL-SS-B56-0-12-042017-R	Login	4/21/2017 4:34:09 PM	DJW	SPA158
HS17041053-19	FTBL-SS-B49-0-12-042017-R	Login	4/21/2017 4:34:09 PM	DJW	SPA158
HS17041053-20	FTBL-SS-B50-0-12-042017-R	Login	4/21/2017 4:34:09 PM	DJW	SPA158
HS17041053-21	FTBL-SS-B50-12-24-042017-R	Login	4/21/2017 4:34:09 PM	DJW	SPA158

ALS Group USA, Corp Date: 03-May-17

Sample Receipt Checklist

Client Name: ARCADIS-EL PASO Date/Time Received: **21-Apr-2017 08:40**

Work Order: HS17041053 Received by: **RPG**

Checklist completed by: (b) (6) eSignature 21-Apr-2017 Date

Reviewed by: (b) (6) eSignature 24-Apr-2017 Date

Matrices: **Solid** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.0c/2.6c - 1.2c/1.8c uc/c	IR20	
Cooler(s)/Kit(s):	43067/Red		
Date/Time sample(s) sent to storage:	4/21/2017 1700		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 3

COC ID: 159541

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	06261038.ALS1.00100	Project Name	Closed Castner Firing Range	A	ICP_S_DOD (6020A Metals: Sb,Cu,Pb,Zn)
Work Order		Project Number	06261038.ALS1.00100	B	MOIST_ASTM (D2216 Moisture%)
Company Name	ARCADIS U.S., Inc.	Bill To Company	ARCADIS U.S., Inc.	C	1311_METALS_HS (1311/6020A TCLP Pb (Contingent))
Send Report To	(b) (6)	Invoice Attn	A/P	D	
Address	401 East Main Street, Suite 400	Address	630 Plaza Drive, Suite 100	E	
				F	
City/State/Zip	El Paso, TX 79901	City/State/Zip	Highlands Ranch, CO 80129	G	
Phone	(915) 747-3902	Phone	(720) 344-3500	H	
Fax		Fax	(720) 344-0468	I	
e-Mail Address		e-Mail Address		J	

HS17041053
ARCADIS U.S., Inc.
Closed Castner Firing Range

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	FTBL-SS-B19-0-12-041917-R	041917	1325	S	N	1	X	X	X								C
2	FTBL-SS-B20-0-12-041917-R	041917	1350	S	N	1	X	X	X								C
3	FTD041917	041917	—	S	N	1	X	X									
4	FTBL-SS-B13-0-12-041917-R2	041917	1430	S	N	1	X	X	X								C
5	FTBL-SS-B14-0-12-041917-R	041917	1445	S	N	1	X	X	X								C
6	FTBL-SS-B25-0-12-041917-R	041917	1515	S	N	1	X	X	X								C
7	FTBL-SS-B26-0-12-041917-R	041917	1530	S	N	1	X	X	X								C
8	FTBL-SS-B31-0-12-041917-R	041917	1610	S	N	1	X	X	X								C
9	FTBL-SS-B31-12-24-041917R	041917	1620	S	N	1	X	X	X								C
10	FTBL-SS-B32-0-12-041917-R	041917	1635	S	N	1	X	X	X								C

Sampler(s) Please Print & Sign: (b) (6)

Shipment Method: FedEx

Required Turnaround Time: (Check Box) TAT: 10 days Other:

Results Due Date:

Relinquished by: (b) (6) Date: 042017 Time: 1230 Received by:

Relinquished by: Date: Time: Received by (Laboratory): (b) (6) 4/21/17 08:40

Logged by (Laboratory): Date: Time: Checked by (Laboratory):

Notes: [Arcadis Closed Castner Range]

Cooler ID	Cooler Temp.
	°C
43767	2.0
RED	1.2
#2 #20	

QC Package: (Check One Box Below)
QC Level: TRRP IV
Other:

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

CF +0.6.

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
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Chain of Custody Form

COC ID: 159540

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	06261038.ALS1.00100	Project Name	Closed Castner Firing Range	A	ICP_S_DOD (6020A Metals: Sb,Cu,Pb,Zn)
Work Order		Project Number	06261038.ALS1.00100	B	MOIST_ASTM (D2216 Moisture%)
Company Name	ARCADIS U.S., Inc.	Bill To Company	ARCADIS U.S., Inc.	C	1311_METALS_HS (1311/6020A TCLP Pb (Contingent))
Send Report To	(b) (6)	Invoice Attn	A/P	D	
Address	401 East Main Street, Suite 400	Address	630 Plaza Drive, Suite 100	E	HS17041053
				F	ARCADIS U.S., Inc.
City/State/Zip	El Paso, TX 79901	City/State/Zip	Highlands Ranch, CO 80129	G	Closed Castner Firing Range
Phone	(915) 747-3902	Phone	(720) 344-3500	H	
Fax		Fax	(720) 344-0468	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	FTBL-SS-B37-0-12-042017-R	042017	0830	S	N	1	X	X	X								C
2	FTBL-SS-B37-12-24-042017-R	042017	0840	S	N	1	X	X	X								C
3	FTBL-SS-B38-0-12-042017-R	042017	0900	S	N	1	X	X	X								C
4	FTBL-SS-B43-0-12-042017-R	042017	0920	S	N	1	X	X	X								C
5	FTBL-SS-B44-0-12-042017-R	042017	0935	S	N	1	X	X	X								C
6	FTBL-SS-B55-0-12-042017-R	042017	1005	S	N	1	X	X	X								C
7	FD042017	042017	—	S	N	1	X	X									
8	FTBL-SS-B55-0-12-042017-R-MS	042017	1005	S	N	1	X	X									
9	FTBL-SS-B55-0-12-042017-R-MSD	042017	1005	S	N	1	X	X									
10	FTBL-SS-B56-0-12-042017-R	042017	1020	S	N	1	X	X	X								C

(b) (6)

Shipment Method: FEDEX

Required Turnaround Time: (Check Box) TAT 10 days Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes:
	042017	1230		[Arcadis Closed Castner Range]
Relinquished by:	Date:	Time:	Received by (Laboratory): (b) (6) 4/21/17 08:40	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.
43067	2-0
RED	1-2
12 #20	

QC Package: (Check One Box Below)
QC Level TRRP IV
Other:

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

of to 6.

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

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Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

COC ID: 159542

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	06261038.ALS1.00100	Project Name	Closed Castner Firing Range	A	ICP_S_DOD (6020A Metals: Sb,Cu,Pb,Zn)
Work Order		Project Number	06261038.ALS1.00100	B	MOIST_ASTM (D2216 Moisture%)
Company Name	ARCADIS U.S., Inc.	Bill To Company	ARCADIS U.S., Inc.	C	1311_METALS_HS (1311/6020A TCLP Pb (Contingent))
Send Report To	(b) (6)	Invoice Attn	A/P	D	
Address	401 East Main Street, Suite 400	Address	630 Plaza Drive, Suite 100	E	
				F	
City/State/Zip	El Paso, TX 79901	City/State/Zip	Highlands Ranch, CO 80129	G	
Phone	(915) 747-3902	Phone	(720) 344-3500	H	
Fax		Fax	(720) 344-0468	I	
e-Mail Address		e-Mail Address		J	

HS17041053
ARCADIS U.S., Inc.
Closed Castner Firing Range

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	FTBL-SS-B49-0-12-042017-R	042017	1100	S	N	1	X	X	X								C
2	FTBL-SS-B50-0-12-042017-R	042017	1120	S	N	1	X	X	X								C
3	FTBL-SS-B50-12-24-042017-R	042017	1130	S	N	1	X	X	X								C
4																	
5																	
6																	
7																	
8																	
9																	
10																	

(b) (6)

Shipment Method: FedEx

Required Turnaround Time: (Check Box) TAT 10 days Other:

Results Due Date:

Relinquished by:	Date: 042017	Time: 1230	Received by:	Notes: [Arcadis Closed Castner Range]	
Relinquished by:	Date:	Time:	Received by (Laboratory): (b) (6) 4/21/17 08:40	Cooler ID / Cooler Temp.	QC Package: (Check One Box Below)
Logged by (Laboratory):	Date:	Time:		43067 2.0 °C	QC Level TRRP IV
				R20 1.2	Other:
				IR #20	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

05 to 06

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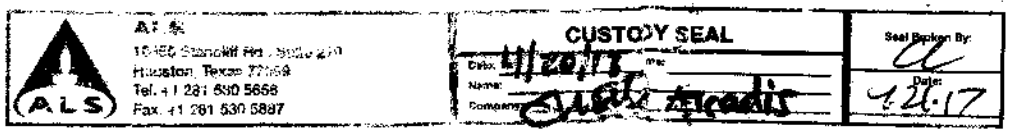
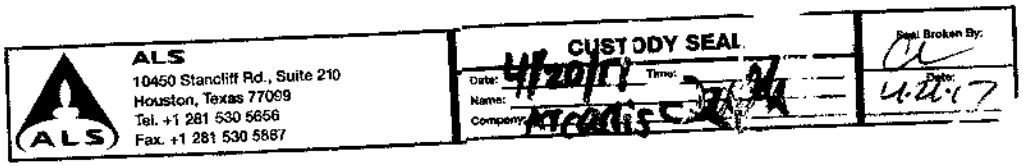

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUSTODY SEAL
Date: 4/20/17
Name:
Company: Arcadis
Seal Broken By:
Date: 4.21.17


ALS
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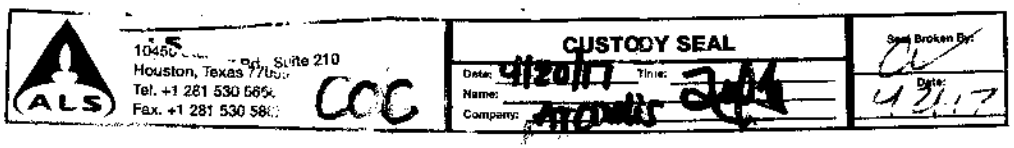
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUSTODY SEAL
Date: 4/20/17
Name:
Company: Arcadis
Seal Broken By:
Date: 4.21.17


ALS
Houston, Texas
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COC
CUSTODY SEAL
Date: 4/20/17
Name:
Company: Arcadis
Seal Broken By:
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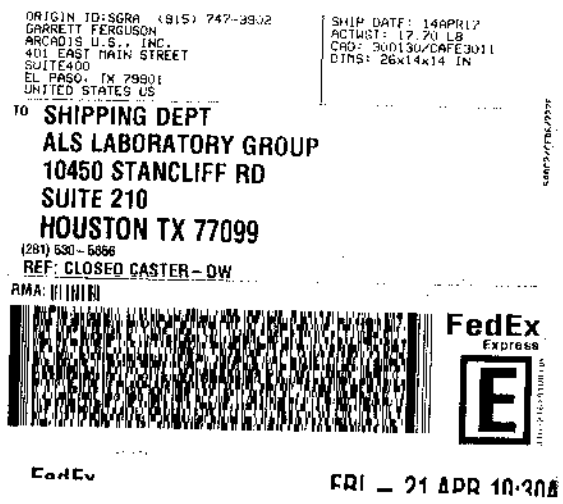
Name:
Company: Arcadis
Seal Broken By:
Date: 4.21.17

FedEx
Red
TRK# 6786 7205 2235
TRK# 6786 7205 2224
FRI – 21 APR 10:30A
PRIORITY OVERNIGHT
PRIORITY OVERNIGHT
NH SGRA
77099
TX – US
IAH
430067


ORIGIN ID:SGRA (915) 747-3902
GARRETT FERGUSON
ARCADIS U.S., INC.
401 EAST MAIN STREET
SUITE400
EL PASO, TX 79901
UNITED STATES US
SHIP DATE: 14APR17
ACTWGT: 17.70 LB
CAD: 3001307CAFE3011
DIMS: 26x14x14 IN
TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: CLOSED CASTER-DW
RMA:
FedEx Express
FRI – 21 APR 10:30A

Dane Wacasey

From: (b) (6)
Sent: Thursday, April 27, 2017 11:15 AM
To: (b) (6)
Cc: (b) (6)
Subject: RE: Results (which ones for TCLP?) - HS17041053 Closed Castner Firing Range

(b) (6)

We would like to run the following for TCLP analysis (lead only).

FTBL-SS-B37-0-12-042017-R – result of 526 lead
FTBL-SS-B44-0-12-042017-R – result of 6,710 lead

Thanks
(b) (6)

(b) (6) **, PG** | Project Geologist | Group Leader 1 |
(b) (6)
Arcadis | Arcadis U.S., Inc.
401 E. Main St., Suite 400 El Paso TX | 79901 | USA
T. +1 915 747 3902 | M. +1 915 433 1761

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From: (b) (6)
Sent: Wednesday, April 26, 2017 4:58 PM
To: (b) (6)
Cc: (b) (6)
Subject: RE: Results (which ones for TCLP?) - HS17041053 Closed Castner Firing Range

Sounds good. Hope your time off is good to you!

Regards,

(b) (6)
Project Manager, Environmental
ALS Houston Laboratory

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(b) (6)
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Houston, TX 77099

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From: [redacted]
Sent: Wednesday, April 26, 2017 5:56 PM
To: [redacted]
Cc: [redacted]
Subject: RE: Results (which ones for TCLP?) - HS17041053 Closed Castner Firing Range

Thanks [redacted]

I looked at the data. Garett is confirming locations for me and he'll get back to you hopefully tomorrow on the samples we want run. I'll be on vacation until Monday.

Have a great weekend.

[redacted], **PE** | Principal Environmental Engineer | sarah.alder-schaller@arcadis.com
Arcadis | Arcadis U.S., Inc.
10205 Westheimer Road Suite 800 Houston TX | 77042 | USA
T. +1 713 953 4850 | M. +1 713 518 8233

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From: [redacted]
Sent: Wednesday, April 26, 2017 4:32 PM
To: [redacted]
Subject: Results (which ones for TCLP?) - HS17041053 Closed Castner Firing Range

Attached you will find the results for the above work order/project.

The data contained are Final results, The preliminary water mark is only present because the work order is being held open to report the added TCLP analyses. I see a few that appear might need TCLP analysis.

Please let me know soon which samples will need TCLP.

[redacted]

ALS Life Sciences Division | Environmental

Metals Raw Data

ARCADIS U.S., Inc.
PROJECT: CLOSED CASTNER FIRING RANGE
ALS WO# HS17041053

Form 2 - Initial and Continuing Calibration Verification

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293517
Instrument: ICPMS04
Method: SW6020

ICV Date: 24-Apr-2017 13:08 Seq: 4065998 ICV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	101.899	102	90-110	
Copper	100	102.655	103	90-110	
Lead	100	95.629	96	90-110	
Zinc	100	101.593	102	90-110	

CCV1 Date: 24-Apr-2017 14:10 Seq: 4066197 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	101.91	102	90-110	
Copper	100	104.742	105	90-110	
Lead	100	93.652	94	90-110	
Zinc	100	102.186	102	90-110	

CCV2 Date: 24-Apr-2017 14:55 Seq: 4066311 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	102.006	102	90-110	
Copper	100	102.341	102	90-110	
Lead	100	93.303	93	90-110	
Zinc	100	101.298	101	90-110	

CCV3 Date: 24-Apr-2017 15:35 Seq: 4066556 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	101.409	101	90-110	
Copper	100	101.048	101	90-110	
Lead	100	93.489	94	90-110	
Zinc	100	100.847	101	90-110	

CCV4 Date: 24-Apr-2017 16:29 Seq: 4066697 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	101.055	101	90-110	
Copper	100	100.569	101	90-110	
Lead	100	147.321	147	90-110	S
Zinc	100	98.434	98	90-110	

CCV5 Date: 24-Apr-2017 16:56 Seq: 4066754 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	101.822	102	90-110	
Copper	100	98.962	99	90-110	
Lead	100	102.518	103	90-110	
Zinc	100	97.441	97	90-110	

ICCV6 Date: 24-Apr-2017 18:09 Seq: 4067069 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	108.273	108	90-110	
Copper	100	101.871	102	90-110	
Lead	100	100.899	101	90-110	
Zinc	100	103.553	104	90-110	

CCV7 Date: 24-Apr-2017 19:16 Seq: 4067084 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	101.842	102	90-110	
Copper	100	95.556	96	90-110	
Lead	100	100.715	101	90-110	
Zinc	100	96.074	96	90-110	

CCV8 Date: 24-Apr-2017 20:10 Seq: 4067096 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	103.914	104	90-110	
Copper	100	91.503	92	90-110	

Form 2 - Initial and Continuing Calibration Verification

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293517
Instrument: ICPMS04
Method: SW6020

CCV8	Date: 24-Apr-2017 20:10		Seq: 4067096	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	100.92	101	90-110	
Zinc	100	95.425	95	90-110	

ICCV9	Date: 24-Apr-2017 20:51		Seq: 4067104	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	106.292	106	90-110	
Copper	100	102.343	102	90-110	
Lead	100	101.268	101	90-110	
Zinc	100	101.667	102	90-110	

CCV10	Date: 24-Apr-2017 21:10		Seq: 4067108	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	100.533	101	90-110	
Copper	100	100.522	101	90-110	
Lead	100	100.469	100	90-110	
Zinc	100	100.478	100	90-110	

CCV11	Date: 24-Apr-2017 21:56		Seq: 4067118	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	100.539	101	90-110	
Copper	100	100.922	101	90-110	
Lead	100	98.675	99	90-110	
Zinc	100	99.893	100	90-110	

CCV12	Date: 24-Apr-2017 22:47		Seq: 4067129	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	100.646	101	90-110	
Copper	100	100.448	100	90-110	
Lead	100	103.264	103	90-110	
Zinc	100	99.179	99	90-110	

CCV13	Date: 24-Apr-2017 23:48		Seq: 4067142	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	101.502	102	90-110	
Copper	100	98.92	99	90-110	
Lead	100	98.379	98	90-110	
Zinc	100	99.235	99	90-110	

CCV14	Date: 25-Apr-2017 00:39		Seq: 4067214	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	100.441	100	90-110	
Copper	100	100.703	101	90-110	
Lead	100	97.872	98	90-110	
Zinc	100	99.365	99	90-110	

CCV15	Date: 25-Apr-2017 01:16		Seq: 4067222	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	99.463	100	90-110	
Copper	100	99.345	99	90-110	
Lead	100	101.796	102	90-110	
Zinc	100	98.217	98	90-110	

CCV16	Date: 25-Apr-2017 01:54		Seq: 4067230	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	98.974	99	90-110	
Copper	100	98.114	98	90-110	
Lead	100	100.918	101	90-110	
c	100	97.484	98	90-110	

Form 2 - Initial and Continuing Calibration Verification

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293517
Instrument: ICPMS04
Method: SW6020

CCV17 Date: 25-Apr-2017 02:41 Seq: 4067240 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	99.712	100	90-110	
Copper	100	99.288	99	90-110	
Lead	100	102.204	102	90-110	
Zinc	100	101.804	102	90-110	

Form 3 - BLANKS

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293517
Instrument: ICPMS04
Method: SW6020

ICB	Date: 24-Apr-2017 13:01		Seq: 4065995	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB1	Date: 24-Apr-2017 14:15		Seq: 4066198	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.623	0.4	5	J	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB2	Date: 24-Apr-2017 15:00		Seq: 4066548	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.687	0.4	5	J	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB3	Date: 24-Apr-2017 15:40		Seq: 4066557	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.523	0.4	5	J	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB4	Date: 24-Apr-2017 16:33		Seq: 4066749	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.514	0.4	5	J	
Copper	2	1	2	U	
Lead	14.12	0.6	5		
Zinc	5	2	5	U	
CCB5	Date: 24-Apr-2017 17:00		Seq: 4066755	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.436	0.4	5	J	
Copper	2	1	2	U	
Lead	4.506	0.6	5	J	
Zinc	5	2	5	U	
ICCB6	Date: 24-Apr-2017 18:22		Seq: 4067072	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB7	Date: 24-Apr-2017 19:21		Seq: 4067085	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.42	0.4	5	J	
Copper	2	1	2	U	
Lead	-0.784	0.6	5	J	
Zinc	5	2	5	U	
CCB8	Date: 24-Apr-2017 20:14		Seq: 4067097	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.428	0.4	5	J	

Form 3 - BLANKS

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293517
Instrument: ICPMS04
Method: SW6020

CCB8	Date: 24-Apr-2017 20:14		Seq: 4067097	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Copper	2	1	2	U	
Lead	-0.977	0.6	5	J	
Zinc	5	2	5	U	

ICCB9	Date: 24-Apr-2017 21:05		Seq: 4067107	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

CCB10	Date: 24-Apr-2017 21:15		Seq: 4067109	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

CCB11	Date: 24-Apr-2017 22:01		Seq: 4067119	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

CCB12	Date: 24-Apr-2017 22:52		Seq: 4067130	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

CCB13	Date: 24-Apr-2017 23:52		Seq: 4067143	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

MBLK-115588	Date: 24-Apr-2017 23:57		Seq: 4067197	MBLK	Units: mg/Kg
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.5	0.2	0.5	U	
Copper	0.2	0.1	0.2	U	
Lead	0.5	0.05	0.5	U	
Zinc	0.5	0.25	0.5	U	

CCB14	Date: 25-Apr-2017 00:43		Seq: 4067215	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

CCB15	Date: 25-Apr-2017 01:21		Seq: 4067223	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	

Form 3 - BLANKS

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293517
Instrument: ICPMS04
Method: SW6020

CCB15	Date: 25-Apr-2017 01:21		Seq: 4067223	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

CCB16	Date: 25-Apr-2017 01:58		Seq: 4067231	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

CCB17	Date: 25-Apr-2017 02:45		Seq: 4067241	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

Form 4 - ICP Interference Check Sample

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID:ICPMS04_293517
Instrument:ICPMS04
Method:SW6020

ICSA	Date: 24-Apr-2017 13:14	Seq: 4066000	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony		0.588	0	
Copper		0.455	0	
Lead		0.099	0	
Zinc		0.084	0	
ICSAB	Date: 24-Apr-2017 13:19	Seq: 4066001	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony	100	99.55	99.6	
Copper	100	94.61	94.6	
Lead	100	88.26	88.3	
Zinc	100	96.28	96.3	
ICSA	Date: 24-Apr-2017 18:27	Seq: 4067073	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony		0.202	0	
Copper		1.553	0	
Lead		0.031	0	
Zinc		0.205	0	
ICSAB	Date: 24-Apr-2017 18:32	Seq: 4067074	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony	100	100.2	100	
Copper	100	95.96	96.0	
Lead	100	97.27	97.3	
Zinc	100	98.08	98.1	
ICSA	Date: 25-Apr-2017 03:00	Seq: 4067244	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony		0.023	0	
Copper		3.333	0	
Lead		0.082	0	
Zinc		3.069	0	
ICSAB	Date: 25-Apr-2017 03:05	Seq: 4067245	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony	100	100.3	100	
Copper	100	98.66	98.7	
Lead	100	94.06	94.1	
Zinc	100	100.9	101	

Form 5A - Matrix Spike/Matrix Spike Duplicate Recovery

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 25-Apr-2017 00:30
Date Extracted: 24-Apr-2017 14:30
Units: mg/Kg

Matrix Spike: HS17041053-04MS
Client Sample ID: FTBL-SS-B13-0-12-041917-R
Analysis Method: SW6020

Analyte	Sample Result	MS Result	Spike Amount	% Rec	MSD Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Antimony	0.4730	5.037	9.464	52.0	5.026	9.450	52.0	75-125	0.232	20
Copper	7.972	17.08	9.464	96.2	17.14	9.450	97.0	75-125	0.332	20
Lead	8.529	18.08	9.464	101	17.62	9.450	96.2	75-125	2.58	20
Zinc	34.10	46.70	9.464	133	45.78	9.450	124	75-125	2.00	20

Form 5B - Post Digest Sample Recovery

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 25-Apr-2017 00:34
Date Extracted: 24-Apr-2017 14:30
Units: mg/Kg

Lab Sample ID: HS17041053-04PDS
Client Sample ID: FTBL-SS-B13-0-12-041917-R
Analysis Method: SW6020

Analyte	Sample Result	PDS Result	Spike Amount	% Rec	% Rec Limits
Antimony	0	8.963	9.446	94	75-125
Copper	7.972	15.95	9.446	85	75-125
Lead	8.529	17.13	9.446	91	75-125

Form 7 - Laboratory Control Sample

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 25-Apr-2017 00:02
Date Extracted: 24-Apr-2017 14:30
Units: mg/Kg

Lab Sample ID: LCS-115588 Analysis Method: SW6020

Analyte	Spike Amount	LCS Result	% Rec	% Rec Limits
Antimony	10	10.35	103	80-120
Copper	10	10	100	80-120
Lead	10	9.774	98	80-120
Zinc	10	9.907	99	80-120

Form 8 - ICP Serial Dilutions

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 25-Apr-2017 00:20
Date Extracted: 24-Apr-2017 14:30
Units: mg/Kg

Lab Sample ID: HS17041053-04SD
Client Sample ID:FTBL-SS-B13-0-12-041917-R

Analysis Method: SW6020

Analyte	Sample Result	C	SD Result	C	RPD	Q
Antimony	0	U	0	U	0	
Copper	7.972		8.284		4	
Lead	8.529		8.664		2	
Zinc	34.1		35.76		5	

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: ARCADIS U.S., Inc. Instrument:ICPMS04
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		ArHe
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
111	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
135	Barium	Indium		Ar
203	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: ARCADIS U.S., Inc. Instrument:ICPMS05
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		Ar
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

FORM 12 - PREPARATION LOG

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 24-Apr-2017 14:30 End Date: 24-Apr-2017 16:30

Batch ID: 115588
Prep Code: 3050_I_Low
Method: SW3050A
Technician:

SampID	ClientID	Matrix	Init Wt	Init Vol	FinalVol (mL)	PrepFac
HS17041053-01	FTBL-SS-B19-0-12-041917-R	Soil	0.5442		50	91.88
HS17041053-02	FTBL-SS-B20-0-12-041917-R	Soil	0.5413		50	92.37
HS17041053-03	FD041917	Soil	0.5263		50	95
HS17041053-04	FTBL-SS-B13-0-12-041917-R	Soil	0.5293		50	94.46
HS17041053-04MS			0.5283		50	94.64
HS17041053-04MSD			0.5291		50	94.5
HS17041053-04PDS			0.5293		50	94.46
HS17041053-04SD			0.5293		50	94.46
HS17041053-05	FTBL-SS-B14-0-12-041917-R	Soil	0.5234		50	95.53
HS17041053-06	FTBL-SS-B25-0-12-041917-R	Soil	0.5331		50	93.79
HS17041053-07	FTBL-SS-B26-0-12-041917-R	Soil	0.5457		50	91.63
HS17041053-08	FTBL-SS-B31-0-12-041917-R	Soil	0.5412		50	92.39
HS17041053-09	FTBL-SS-B31-12-24-041917-R	Soil	0.5416		50	92.32
HS17041053-10	FTBL-SS-B32-0-12-041917-R	Soil	0.5331		50	93.79
HS17041053-11	FTBL-SS-B37-0-12-042017-R	Soil	0.5474		50	91.34
HS17041053-12	FTBL-SS-B37-12-24-042017-R	Soil	0.5281		50	94.68
HS17041053-13	FTBL-SS-B38-0-12-042017-R	Soil	0.5463		50	91.52
LCS-115588			0.5		50	100
MBLK-115588			0.5		50	100

FORM 13 - ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 24-Apr-2017 End Date: 25-Apr-2017

Run ID:ICPMS04_293517
Instrument:ICPMS04
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS04_293517_Tune	1	24-Apr-2017 00:00	ICPMS04_293517_Tune_1	
CAL BLK	1	24-Apr-2017 12:22	003CALB.D_4065986	CU PB SB ZN
2/10/200	1	24-Apr-2017 12:26	004CALS.D_4065987	CU PB SB ZN
5/25/500	1	24-Apr-2017 12:31	005CALS.D_4065988	CU PB SB ZN
10/50/1000	1	24-Apr-2017 12:35	006CALS.D_4065989	CU PB SB ZN
100/500/10K	1	24-Apr-2017 12:40	007CALS.D_4065990	CU PB SB ZN
200/1000/20K	1	24-Apr-2017 12:44	008CALS.D_4065991	CU PB SB ZN
LLICV5	1	24-Apr-2017 12:52	010SMPL.D_4065993	CU PB SB ZN
LLICV2	1	24-Apr-2017 12:57	011SMPL.D_4065994	CU PB SB ZN
ICB	1	24-Apr-2017 13:01	012SMPL.D_4065995	CU PB SB ZN
ICV	1	24-Apr-2017 13:08	013SMPL.D_4065998	CU PB SB ZN
ICSA	1	24-Apr-2017 13:14	014SMPL.D_4066000	CU PB SB ZN
ICSAB	1	24-Apr-2017 13:19	015SMPL.D_4066001	CU PB SB ZN
CCV 1	1	24-Apr-2017 14:10	026SMPL.D_4066197	CU PB SB ZN
CCB 1	1	24-Apr-2017 14:15	027CCB.D_4066198	CU PB SB ZN
CCV 2	1	24-Apr-2017 14:55	036SMPL.D_4066311	CU PB SB ZN
CCB 2	1	24-Apr-2017 15:00	037CCB.D_4066548	CU PB SB ZN
CCV 3	1	24-Apr-2017 15:35	045SMPL.D_4066556	CU PB SB ZN
CCB 3	1	24-Apr-2017 15:40	046CCB.D_4066557	CU PB SB ZN
CCV 4	1	24-Apr-2017 16:29	055SMPL.D_4066697	CU PB SB ZN
CCB 4	1	24-Apr-2017 16:33	056CCB.D_4066749	CU PB SB ZN
CCV 5	1	24-Apr-2017 16:56	061SMPL.D_4066754	CU PB SB ZN
CCB 5	1	24-Apr-2017 17:00	062CCB.D_4066755	CU PB SB ZN
CAL BLK	1	24-Apr-2017 17:42	070CALB.D_4067063	CU PB SB ZN
2/10/200	1	24-Apr-2017 17:46	071CALS.D_4067064	CU PB SB ZN
5/25/500	1	24-Apr-2017 17:51	072CALS.D_4067065	CU PB SB ZN
10/50/1000	1	24-Apr-2017 17:56	073CALS.D_4067066	CU PB SB ZN
100/500/10K	1	24-Apr-2017 18:00	074CALS.D_4067067	CU PB SB ZN
200/1000/20K	1	24-Apr-2017 18:05	075CALS.D_4067068	CU PB SB ZN
ICCV 6	1	24-Apr-2017 18:09	076SMPL.D_4067069	CU PB SB ZN
LLCCV5	1	24-Apr-2017 18:13	077SMPL.D_4067070	CU PB SB ZN
LLCCV2	1	24-Apr-2017 18:18	078SMPL.D_4067071	CU PB SB ZN
ICCB 6	1	24-Apr-2017 18:22	079SMPL.D_4067072	CU PB SB ZN
ICSA	1	24-Apr-2017 18:27	080SMPL.D_4067073	CU PB SB ZN
ICSAB	1	24-Apr-2017 18:32	081SMPL.D_4067074	CU PB SB ZN
CCV 7	1	24-Apr-2017 19:16	091CCV.D_4067084	CU PB SB ZN
CCB 7	1	24-Apr-2017 19:21	092CCB.D_4067085	CU PB SB ZN
CCV 8	1	24-Apr-2017 20:10	103CCV.D_4067096	CU PB SB ZN
CCB 8	1	24-Apr-2017 20:14	104CCB.D_4067097	CU PB SB ZN
CAL BLK	1	24-Apr-2017 20:23	106CALB.D_4067098	CU PB SB ZN
2/10/200	1	24-Apr-2017 20:28	107CALS.D_4067099	CU PB SB ZN
5/25/500	1	24-Apr-2017 20:33	108CALS.D_4067100	CU PB SB ZN
10/50/1000	1	24-Apr-2017 20:37	109CALS.D_4067101	CU PB SB ZN
100/500/10K	1	24-Apr-2017 20:42	110CALS.D_4067102	CU PB SB ZN
200/1000/20K	1	24-Apr-2017 20:47	111CALS.D_4067103	CU PB SB ZN
ICCV 9	1	24-Apr-2017 20:51	112SMPL.D_4067104	CU PB SB ZN
LLCCV5	1	24-Apr-2017 20:56	113SMPL.D_4067105	CU PB SB ZN
LLCCV2	1	24-Apr-2017 21:00	114SMPL.D_4067106	CU PB SB ZN
ICCB 9	1	24-Apr-2017 21:05	115SMPL.D_4067107	CU PB SB ZN
CCV 10	1	24-Apr-2017 21:10	116CCV.D_4067108	CU PB SB ZN
CCB 10	1	24-Apr-2017 21:15	117CCB.D_4067109	CU PB SB ZN
CCV 11	1	24-Apr-2017 21:56	126CCV.D_4067118	CU PB SB ZN
CCB 11	1	24-Apr-2017 22:01	127CCB.D_4067119	CU PB SB ZN
12	1	24-Apr-2017 22:47	137CCV.D_4067129	CU PB SB ZN

FORM 13 - ANALYSIS RUN LOG

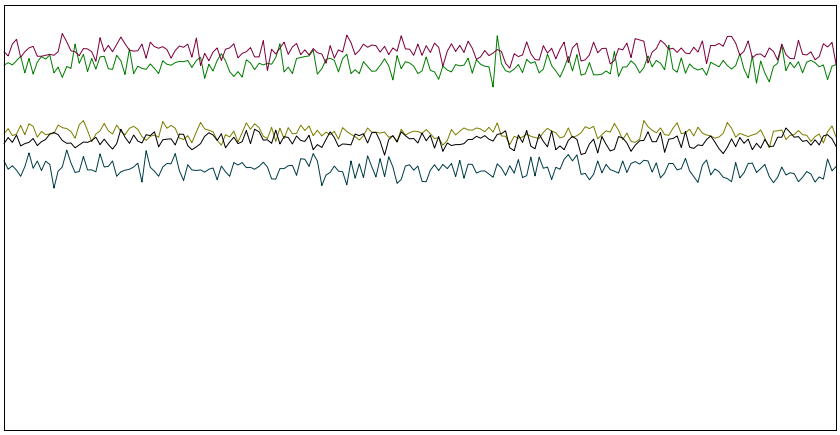
Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 24-Apr-2017 End Date: 25-Apr-2017

Run ID:ICPMS04_293517
Instrument:ICPMS04
Method:

Sample No.	D/F	Time	FileID	Analytes
CCB 12	1	24-Apr-2017 22:52	138CCB.D_4067130	CU PB SB ZN
CCV 13	1	24-Apr-2017 23:48	150CCV.D_4067142	CU PB SB ZN
CCB 13	1	24-Apr-2017 23:52	151CCB.D_4067143	CU PB SB ZN
MBLK-115588	1	24-Apr-2017 23:57	152SMPL.D_4067197	CU PB SB ZN
LCS-115588	1	25-Apr-2017 00:02	153SMPL.D_4067198	CU PB SB ZN
FTBL-SS-B13-0-12-041917-R	1	25-Apr-2017 00:16	156SMPL.D_4067285	CU PB SB ZN
FTBL-SS-B13-0-12-041917-RSD	5	25-Apr-2017 00:20	157SMPL.D_4067210	CU PB SB ZN
FTBL-SS-B13-0-12-041917-RMS	1	25-Apr-2017 00:25	158SMPL.D_4067211	CU PB SB ZN
FTBL-SS-B13-0-12-041917-RMSD	1	25-Apr-2017 00:30	159SMPL.D_4067212	CU PB SB ZN
FTBL-SS-B13-0-12-041917-RPDS	1	25-Apr-2017 00:34	160SMPL.D_4067213	CU PB SB
CCV 14	1	25-Apr-2017 00:39	161CCV.D_4067214	CU PB SB ZN
CCB 14	1	25-Apr-2017 00:43	162CCB.D_4067215	CU PB SB ZN
FTBL-SS-B19-0-12-041917-R	1	25-Apr-2017 00:48	163SMPL.D_4067286	CU PB SB ZN
FTBL-SS-B20-0-12-041917-R	1	25-Apr-2017 00:53	164SMPL.D_4067287	CU PB SB ZN
FD041917	1	25-Apr-2017 00:58	165SMPL.D_4067288	CU PB SB ZN
FTBL-SS-B14-0-12-041917-R	1	25-Apr-2017 01:02	166SMPL.D_4067289	CU PB SB ZN
FTBL-SS-B25-0-12-041917-R	1	25-Apr-2017 01:07	167SMPL.D_4067290	CU PB SB ZN
FTBL-SS-B26-0-12-041917-R	1	25-Apr-2017 01:12	168SMPL.D_4067291	CU PB SB ZN
CCV 15	1	25-Apr-2017 01:16	169CCV.D_4067222	CU PB SB ZN
CCB 15	1	25-Apr-2017 01:21	170CCB.D_4067223	CU PB SB ZN
FTBL-SS-B31-0-12-041917-R	1	25-Apr-2017 01:26	171SMPL.D_4067294	CU PB SB ZN
FTBL-SS-B31-12-24-041917-R	1	25-Apr-2017 01:30	172SMPL.D_4067295	CU PB SB ZN
FTBL-SS-B32-0-12-041917-R	1	25-Apr-2017 01:35	173SMPL.D_4067296	CU PB SB ZN
FTBL-SS-B37-0-12-042017-R	1	25-Apr-2017 01:40	174SMPL.D_4067297	CU SB ZN
FTBL-SS-B37-12-24-042017-R	1	25-Apr-2017 01:44	175SMPL.D_4067298	CU SB ZN
FTBL-SS-B38-0-12-042017-R	1	25-Apr-2017 01:49	176SMPL.D_4067299	CU SB ZN
CCV 16	1	25-Apr-2017 01:54	177CCV.D_4067230	CU PB SB ZN
CCB 16	1	25-Apr-2017 01:58	178CCB.D_4067231	CU PB SB ZN
CCV 17	1	25-Apr-2017 02:41	187CCV.D_4067240	CU PB SB ZN
CCB 17	1	25-Apr-2017 02:45	188CCB.D_4067241	CU PB SB ZN
LLCCV2	1	25-Apr-2017 02:50	189SMPL.D_4067242	CU PB SB ZN
LLCCV5	1	25-Apr-2017 02:55	190SMPL.D_4067243	CU PB SB ZN
ICSA	1	25-Apr-2017 03:00	191SMPL.D_4067244	CU PB SB ZN
ICSAB	1	25-Apr-2017 03:05	192SMPL.D_4067245	CU PB SB ZN

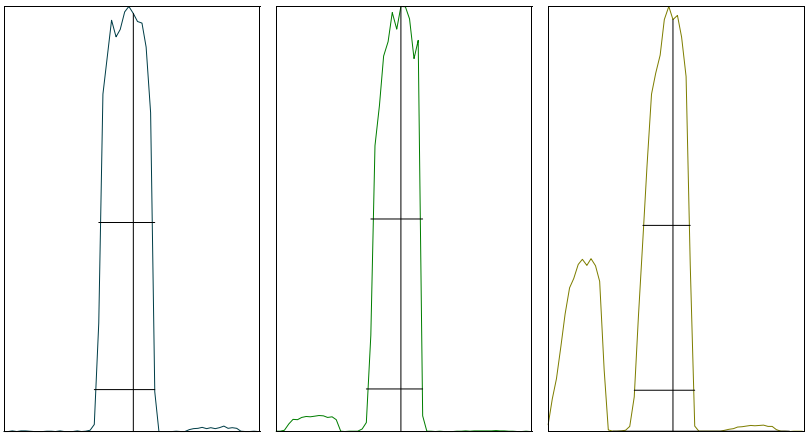
Tune Report

Tune File : 042417A5.u
Comment :



Integration Time:	0.1000 sec	
Sampling Period:	0.5100 sec	
n:	200	
Oxide:	156/140	0.509%
Doubly Charged:	70/140	1.001%

m/z	Range	Count	Mean	RSD%	Background
9	5,000	3108.0	3076.7	2.83	2.70
24	10,000	8609.0	8590.1	2.12	2.40
59	20,000	13808.0	14007.1	1.75	2.80
115	20,000	17209.0	17882.4	1.82	8.60
208	20,000	13361.0	13634.0	1.99	16.90



m/z:	9	59	208
Height:	3,026	13,992	13,372
Axis:	9.05	59.00	208.00
W-50%:	0.65	0.60	0.55
W-10%:	0.700	0.6500	0.700

Integration Time:	0.1000 sec
Acquisition Time:	22.6600 sec

Y axis : Linear

Generated : Apr 24, 2017 10:58:07
Printed : Apr 24, 2017 10:58:10

Tune Report

Tune File : 042417A5.u
Comment :

Tuning Parameters

===Plasma Condition===				===Ion Lenses===				===Q-Pole Parameters===			
RF Power	:	1600	W	Extract 1	:	0	V	AMU Gain	:	137	
RF Matching	:	1.2	V	Extract 2	:	-200	V	AMU Offset	:	123	
Smpl Depth	:	8	mm	Omega Bias	:	-100	V	Axis Gain	:	0.9932	
Torch-H	:	0.1	mm	Omega Lens	:	10.2	V	Axis Offset	:	0.03	
Torch-V	:	0	mm	Cell Entrance	:	-30	V	QP Bias	:	-3	V
Carrier Gas	:	0.35	L/min	Cell Exit	:	-50	V				
Dilution Mode	:	ON		Deflect	:	14.8	V	===Detector Parameters===			
Dilution Gas	:	0.5	L/min	Plate Bias	:	-40	V	Discriminator	:	4.5	mV
Optional Gas	:	---	%	===Octopole Parameters===				Analog HV	:	2158	V
Nebulizer Pump	:	0.1	rps	OctP RF	:	180	V	Pulse HV	:	1522	V
Sample Pump	:	---	rps	OctP Bias	:	-8	V				
S/C Temp	:	2	degC								

===Reaction Cell===

Reaction Mode	:	OFF									
H2 Gas	:	---	mL/min	He Gas	:	0	mL/min	Optional Gas	:	---	%

Generated : Apr 24, 2017 10:58:07
Printed : Apr 24, 2017 10:58:13

Calibration Blank Report

Sample Name	CAL BLK
Data File Name	003CALB.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 12:22:00
Type	CalBlk
VialNumber	1101
Dilution	1
Comment	
Operator	JUSTIN ENNIS ICPMS04
Current Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	58254	1.25
Be	9	6	1	130	15.60
B	11	6	1	16785	1.61
Na	23	72	1	339249	8.00
Na	23	72	2	12415	0.51
Mg	24	72	1	41146	39.33
Al	27	72	1	72436	47.74
P	31	72	1	41502	1.96
K	39	72	1	5580379	0.28
Ca	44	72	1	140989	6.72
Ca	44	72	2	483	17.41
Ti	47	72	1	277	13.58
Ti	47	72	2	2	86.60
V	51	72	1	2232337	1.22
V	51	72	2	4543	2.89
Cr	52	72	1	51867	0.14
Cr	52	72	2	1018	8.61
Mn	55	72	1	25405	6.29
Mn	55	72	2	282	27.35
Fe	56	72	1	2769042	1.07
Fe	56	72	2	10040	3.75
Co	59	72	1	494	31.98
Co	59	72	2	42	59.25
Ni	60	72	1	226	31.84
Ni	60	72	2	71	39.03
Cu	63	72	1	1650	14.70
Cu	63	72	2	450	17.64
Cu	65	72	1	732	9.33
Zn	66	72	1	1965	11.79
Zn	68	72	1	1460	8.91
As	75	72	1	186209	1.64
As	75	72	2	112	12.42
Se	78	72	1	17247	0.65
Se	78	72	2	24	27.27
Se	82	72	1	704	2.05
Sr	88	72	1	2217	55.10
Mo	95	72	1	430	26.45
Mo	97	72	1	332	32.11
Ag	107	72	1	354	3.80
Ag	109	72	1	341	17.60
Cd	111	115	1	30	11.12
Cd	114	115	1	87	50.88
Sn	118	72	1	1087	7.44
Sn	119	72	1	391	10.41
Sb	121	72	1	6143	5.83
Sb	121	72	2	1363	4.21

Calibration Blank Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	123	72	1	4619	6.27
Ba	135	115	1	144	54.53
Ba	137	115	1	234	44.79
Tl	203	209	1	5494	8.88
Tl	205	209	1	13084	8.84
Pb	206	209	1	713	31.32
Pb	207	209	1	609	26.32
Pb	208	209	1	2690	27.72

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Li	6	1	651501	1.38
Ge	72	1	3129453	0.07
Ge	72	2	416984	0.29
In	115	1	3134428	0.89
Bi	209	1	2939886	1.37

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	2/10/200
Data File Name	004CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 12:26
Type	CalStd
VialNumber	1102
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	78667	0.60
Be	9	6	1	9326	1.72
B	11	6	1	39819	2.25
Na	23	72	1	3915610	1.14
Na	23	72	2	104182	0.97
Mg	24	72	1	2685361	0.69
Al	27	72	1	114946	29.40
P	31	72	1	54276	1.21
K	39	72	1	8830820	0.13
Ca	44	72	1	235714	3.74
Ca	44	72	2	2828	5.30
Ti	47	72	1	3298	3.25
Ti	47	72	2	200	7.64
V	51	72	1	2245758	2.54
V	51	72	2	10617	1.90
Cr	52	72	1	91831	1.39
Cr	52	72	2	8896	4.65
Mn	55	72	1	75692	3.00
Mn	55	72	2	4382	1.58
Fe	56	72	1	7074738	0.63
Fe	56	72	2	642895	0.36
Co	59	72	1	45660	1.80
Co	59	72	2	11567	1.40
Ni	60	72	1	10511	3.51
Ni	60	72	2	3059	5.88
Cu	63	72	1	26418	1.67
Cu	63	72	2	8664	3.79
Cu	65	72	1	12497	0.69
Zn	66	72	1	9391	3.83
Zn	68	72	1	6593	2.43
As	75	72	1	192013	2.44
As	75	72	2	1588	2.76
Se	78	72	1	18220	0.22
Se	78	72	2	101	16.26
Se	82	72	1	1200	8.03
Sr	88	72	1	60456	1.90
Mo	95	72	1	11463	4.65
Mo	97	72	1	6902	3.79
Ag	107	72	1	29697	0.79
Ag	109	72	1	28715	1.51
Cd	111	115	1	6446	1.65
Cd	114	115	1	15483	0.79
Sn	118	72	1	17572	1.56
Sn	119	72	1	6789	2.58

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	31461	1.20
Sb	121	72	2	7765	1.06
Sb	123	72	1	24183	0.73
Ba	135	115	1	5541	5.73
Ba	137	115	1	9195	2.32
Tl	203	209	1	26601	1.93
Tl	205	209	1	62518	1.96
Pb	206	209	1	19237	1.48
Pb	207	209	1	17307	2.32
Pb	208	209	1	77827	1.55

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	640460	1.44	651501	98.3	70	125	
Ge	72	1	3085259	1.27	3129453	98.6	70	125	
Ge	72	2	415043	0.21	416984	99.5	70	125	
In	115	1	3119552	1.20	3134428	99.5	70	125	
Bi	209	1	2930919	1.63	2939886	99.7	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	5/25/500
Data File Name	005CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 12:31
Type	CalStd
VialNumber	1103
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	109117	0.30
Be	9	6	1	22922	0.66
B	11	6	1	76604	1.45
Na	23	72	1	9257136	0.33
Na	23	72	2	238342	0.87
Mg	24	72	1	6591584	0.55
Al	27	72	1	163130	21.71
P	31	72	1	74002	0.75
K	39	72	1	13850496	0.17
Ca	44	72	1	383365	2.35
Ca	44	72	2	5927	4.69
Ti	47	72	1	8187	5.45
Ti	47	72	2	427	13.62
V	51	72	1	2411219	1.55
V	51	72	2	19476	1.02
Cr	52	72	1	153209	1.01
Cr	52	72	2	20074	0.95
Mn	55	72	1	151022	1.17
Mn	55	72	2	10262	1.72
Fe	56	72	1	13493942	0.16
Fe	56	72	2	1603525	0.97
Co	59	72	1	111549	1.18
Co	59	72	2	28226	0.92
Ni	60	72	1	25551	0.49
Ni	60	72	2	7678	2.22
Cu	63	72	1	62774	2.13
Cu	63	72	2	20558	1.20
Cu	65	72	1	30129	0.38
Zn	66	72	1	20884	0.81
Zn	68	72	1	14738	3.70
As	75	72	1	215889	1.77
As	75	72	2	3628	2.64
Se	78	72	1	19901	0.96
Se	78	72	2	220	9.75
Se	82	72	1	1904	2.28
Sr	88	72	1	148017	0.33
Mo	95	72	1	28048	1.17
Mo	97	72	1	17459	0.55
Ag	107	72	1	73905	1.65
Ag	109	72	1	71200	1.51
Cd	111	115	1	16017	1.69
Cd	114	115	1	37636	1.81
Sn	118	72	1	42691	1.24
Sn	119	72	1	16747	2.50

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	69904	0.94
Sb	121	72	2	17557	0.49
Sb	123	72	1	53385	0.88
Ba	135	115	1	13624	1.58
Ba	137	115	1	23893	1.19
Tl	203	209	1	59053	2.01
Tl	205	209	1	141248	1.53
Pb	206	209	1	47468	0.38
Pb	207	209	1	42604	1.17
Pb	208	209	1	191682	1.19

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	638200	1.66	651501	98.0	70	125	
Ge	72	1	3093222	1.18	3129453	98.8	70	125	
Ge	72	2	409938	0.46	416984	98.3	70	125	
In	115	1	3102737	1.18	3134428	99.0	70	125	
Bi	209	1	2927294	1.63	2939886	99.6	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	10/50/1000
Data File Name	006CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 12:35
Type	CalStd
VialNumber	1104
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	162063	0.66
Be	9	6	1	46107	1.30
B	11	6	1	138348	0.88
Na	23	72	1	18190428	0.41
Na	23	72	2	468854	0.61
Mg	24	72	1	13098944	0.94
Al	27	72	1	252282	13.52
P	31	72	1	107813	0.27
K	39	72	1	21915384	0.19
Ca	44	72	1	629376	1.15
Ca	44	72	2	11648	1.14
Ti	47	72	1	15895	1.93
Ti	47	72	2	962	3.47
V	51	72	1	2584891	1.42
V	51	72	2	34787	2.38
Cr	52	72	1	254491	0.32
Cr	52	72	2	40179	1.10
Mn	55	72	1	278156	0.55
Mn	55	72	2	20195	3.04
Fe	56	72	1	24206764	0.22
Fe	56	72	2	3186386	0.93
Co	59	72	1	222942	0.28
Co	59	72	2	57746	1.25
Ni	60	72	1	50766	1.87
Ni	60	72	2	15256	1.06
Cu	63	72	1	124499	0.95
Cu	63	72	2	41951	0.71
Cu	65	72	1	59388	0.71
Zn	66	72	1	39812	1.01
Zn	68	72	1	28318	2.44
As	75	72	1	246284	1.90
As	75	72	2	7263	2.16
Se	78	72	1	22842	1.03
Se	78	72	2	380	6.79
Se	82	72	1	2923	0.30
Sr	88	72	1	292855	0.48
Mo	95	72	1	55872	0.52
Mo	97	72	1	34793	1.04
Ag	107	72	1	145649	1.40
Ag	109	72	1	140523	1.18
Cd	111	115	1	31467	1.75
Cd	114	115	1	76247	1.09
Sn	118	72	1	84385	1.10
Sn	119	72	1	32868	0.94

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	129940	1.81
Sb	121	72	2	33095	1.01
Sb	123	72	1	99083	1.71
Ba	135	115	1	27052	2.56
Ba	137	115	1	47212	0.65
Tl	203	209	1	115273	1.23
Tl	205	209	1	273332	0.70
Pb	206	209	1	93013	0.21
Pb	207	209	1	86038	0.92
Pb	208	209	1	380610	0.55

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	623870	0.75	651501	95.8	70	125	
Ge	72	1	3050661	1.34	3129453	97.5	70	125	
Ge	72	2	408377	0.68	416984	97.9	70	125	
In	115	1	3064252	0.24	3134428	97.8	70	125	
Bi	209	1	2845083	1.23	2939886	96.8	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	100/500/10K
Data File Name	007CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 12:40
Type	CalStd
VialNumber	1105
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	1056125	2.92
Be	9	6	1	441077	0.32
B	11	6	1	1227465	1.76
Na	23	72	1	168729963	0.67
Na	23	72	2	4319451	0.81
Mg	24	72	1	122478779	0.49
Al	27	72	1	1789813	2.09
P	31	72	1	647299	0.65
K	39	72	1	160294171	0.39
Ca	44	72	1	4746084	0.94
Ca	44	72	2	106379	0.76
Ti	47	72	1	150065	0.85
Ti	47	72	2	8641	3.36
V	51	72	1	3957965	0.27
V	51	72	2	287730	0.59
Cr	52	72	1	1955554	0.16
Cr	52	72	2	367038	0.70
Mn	55	72	1	2368838	1.95
Mn	55	72	2	189129	0.62
Fe	56	72	1	203991024	0.41
Fe	56	72	2	29754569	0.36
Co	59	72	1	2069824	2.84
Co	59	72	2	534201	0.26
Ni	60	72	1	466266	0.63
Ni	60	72	2	145452	0.68
Cu	63	72	1	1144992	0.25
Cu	63	72	2	387022	0.70
Cu	65	72	1	543816	0.66
Zn	66	72	1	360435	1.41
Zn	68	72	1	253175	0.33
As	75	72	1	618453	0.40
As	75	72	2	68548	0.33
Se	78	72	1	70254	0.88
Se	78	72	2	3873	1.21
Se	82	72	1	22367	1.10
Sr	88	72	1	2762448	0.95
Mo	95	72	1	529604	0.58
Mo	97	72	1	329230	0.58
Ag	107	72	1	1378815	1.83
Ag	109	72	1	1327770	0.20
Cd	111	115	1	297461	0.32
Cd	114	115	1	717797	0.09
Sn	118	72	1	798281	0.65
Sn	119	72	1	311438	0.38

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	1110728	3.59
Sb	121	72	2	296269	0.38
Sb	123	72	1	848957	3.70
Ba	135	115	1	259770	0.65
Ba	137	115	1	441818	0.49
Tl	203	209	1	1069745	0.38
Tl	205	209	1	2604234	0.36
Pb	206	209	1	875199	0.29
Pb	207	209	1	793816	0.43
Pb	208	209	1	3604590	0.54

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	585787	1.46	651501	89.9	70	125	
Ge	72	1	3016472	1.66	3129453	96.4	70	125	
Ge	72	2	402539	0.56	416984	96.5	70	125	
In	115	1	3005326	2.16	3134428	95.9	70	125	
Bi	209	1	2819458	1.63	2939886	95.9	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	200/1000/20K
Data File Name	008CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 12:44
Type	CalStd
VialNumber	1106
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	2044121	0.28
Be	9	6	1	871002	0.27
B	11	6	1	2442035	0.69
Na	23	72	1	331849648	0.77
Na	23	72	2	8378893	0.43
Mg	24	72	1	239494570	0.93
Al	27	72	1	3343650	0.94
P	31	72	1	1264496	1.04
K	39	72	1	308417975	1.14
Ca	44	72	1	9100171	0.47
Ca	44	72	2	205417	0.31
Ti	47	72	1	295815	0.83
Ti	47	72	2	16649	1.67
V	51	72	1	5741476	1.44
V	51	72	2	559568	0.07
Cr	52	72	1	3731140	1.23
Cr	52	72	2	713866	0.12
Mn	55	72	1	4632142	0.28
Mn	55	72	2	363963	0.16
Fe	56	72	1	397618247	0.12
Fe	56	72	2	57824577	0.29
Co	59	72	1	4026879	0.10
Co	59	72	2	1042065	0.15
Ni	60	72	1	912227	0.40
Ni	60	72	2	280169	0.57
Cu	63	72	1	2240122	0.66
Cu	63	72	2	744282	0.89
Cu	65	72	1	1050747	0.36
Zn	66	72	1	698834	0.55
Zn	68	72	1	494430	0.66
As	75	72	1	1041102	0.63
As	75	72	2	132853	0.18
Se	78	72	1	121733	0.38
Se	78	72	2	7341	0.54
Se	82	72	1	42625	0.40
Sr	88	72	1	5382879	0.28
Mo	95	72	1	1046612	0.68
Mo	97	72	1	644811	0.09
Ag	107	72	1	2684404	0.52
Ag	109	72	1	2601795	0.24
Cd	111	115	1	583783	0.21
Cd	114	115	1	1405416	0.64
Sn	118	72	1	1586647	0.13
Sn	119	72	1	610135	0.69

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	2324206	1.67
Sb	121	72	2	593636	0.56
Sb	123	72	1	1767115	2.09
Ba	135	115	1	505212	1.15
Ba	137	115	1	869965	0.12
Tl	203	209	1	2149994	1.14
Tl	205	209	1	5054895	0.31
Pb	206	209	1	1757179	0.56
Pb	207	209	1	1590870	0.87
Pb	208	209	1	7130946	0.39

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	495051	12.98	651501	76.0	70	125	
Ge	72	1	2764346	12.10	3129453	88.3	70	125	
Ge	72	2	396816	0.46	416984	95.2	70	125	
In	115	1	2720048	11.88	3134428	86.8	70	125	
Bi	209	1	2574832	11.96	2939886	87.6	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	010SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 12:52
Sample Name	LLICV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	5.538	5.538	0.43
Be	9	6	1	ppb	4.924	4.924	3.47
B	11	6	1	ppb	33.657	33.657	1.78
Na	23	72	1	ppb	486.960	486.960	1.84
Na	23	72	2	ppb	526.562	526.562	1.03
Mg	24	72	1	ppb	488.722	488.722	1.69
Al	27	72	1	ppb	6.701	6.701	20.94
P	31	72	1	ppb	26.811	26.811	3.21
K	39	72	1	ppb	510.760	510.760	3.85
Ca	44	72	1	ppb	462.877	462.877	1.36
Ca	44	72	2	ppb	520.964	520.964	3.97
Ti	47	72	1	ppb	4.810	4.810	0.60
Ti	47	72	2	ppb	5.223	5.223	7.80
V	51	72	1	ppb	-59.227	-59.227	-3.91
V	51	72	2	ppb	4.052	4.052	3.21
Cr	52	72	1	ppb	4.169	4.169	4.20
Cr	52	72	2	ppb	5.208	5.208	0.35
Mn	55	72	1	ppb	4.979	4.979	1.85
Mn	55	72	2	ppb	5.395	5.395	1.73
Fe	56	72	1	ppb	472.034	472.034	2.90
Fe	56	72	2	ppb	540.855	540.855	1.36
Co	59	72	1	ppb	4.948	4.948	2.41
Co	59	72	2	ppb	5.301	5.301	1.71
Ni	60	72	1	ppb	5.003	5.003	3.21
Ni	60	72	2	ppb	5.194	5.194	2.42
Cu	63	72	1	ppb	4.919	4.919	2.47
Cu	63	72	2	ppb	5.311	5.311	1.59
Cu	65	72	1	ppb	4.991	4.991	1.69
Zn	66	72	1	ppb	5.701	5.701	0.61
Zn	66	72	2	ppb	5.051	5.051	3.62
Zn	68	72	1	ppb	4.961	4.961	2.08
As	75	72	1	ppb	-6.006	-6.006	-7.34
As	75	72	2	ppb	5.090	5.090	3.88
Se	78	72	1	ppb	4.677	4.677	20.73
Se	78	72	2	ppb	4.993	4.993	14.95
Se	82	72	1	ppb	4.209	4.209	4.44
Sr	88	72	1	ppb	4.865	4.865	1.75
Mo	95	72	1	ppb	4.960	4.960	1.77
Mo	97	72	1	ppb	4.996	4.996	1.53
Rh	103	115	1	ppb	-10.555	-10.555	-287.66
Pd	105	115	1	ppb	5.407	5.407	234.61
Ag	107	72	1	ppb	5.198	5.198	2.88
Ag	109	72	1	ppb	5.223	5.223	1.68
Cd	111	115	1	ppb	4.792	4.792	2.51

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	4.750	4.750	1.68
Sn	118	72	1	ppb	4.999	4.999	2.02
Sn	119	72	1	ppb	5.015	5.015	2.51
Sb	121	72	1	ppb	6.237	6.237	3.55
Sb	121	72	2	ppb	6.032	6.032	1.54
Sb	123	72	1	ppb	6.258	6.258	3.79
Ba	135	115	1	ppb	4.798	4.798	1.54
Ba	137	115	1	ppb	4.764	4.764	2.19
W	182	209	1	ppb	13.010	13.010	91.35
Pt	195	209	1	ppb	-896.896	-896.896	-90.10
Au	197	209	1	ppb	-878.535	-878.535	-74.37
Tl	203	209	1	ppb	5.512	5.512	1.32
Tl	205	209	1	ppb	5.439	5.439	1.83
Pb	206	209	1	ppb	4.734	4.734	0.98
Pb	207	209	1	ppb	4.651	4.651	1.70
Pb	208	209	1	ppb	4.688	4.688	0.93
U	238	209	1	ppb	4.391	4.391	1.71

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	603,607	1.72	651501	92.6	70	125	
1	Ge	72	2,961,244	1.90	3129453	94.6	70	125	
2	Ge	72	396,878	0.40	416984	95.2	70	125	
1	In	115	3,006,078	1.60	3134428	95.9	70	125	
1	Bi	209	2,866,210	0.90	2939886	97.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	011SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 12:57
Sample Name	LLICV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	2.228	2.228	3.78
Be	9	6	1	ppb	1.981	1.981	2.45
B	11	6	1	ppb	14.034	14.034	3.44
Na	23	72	1	ppb	194.803	194.803	1.66
Na	23	72	2	ppb	207.173	207.173	1.26
Mg	24	72	1	ppb	196.794	196.794	1.56
Al	27	72	1	ppb	3.912	3.912	47.59
P	31	72	1	ppb	10.884	10.884	4.92
K	39	72	1	ppb	216.419	216.419	4.14
Ca	44	72	1	ppb	162.779	162.779	5.84
Ca	44	72	2	ppb	201.955	201.955	1.65
Ti	47	72	1	ppb	2.003	2.003	7.42
Ti	47	72	2	ppb	2.464	2.464	18.32
V	51	72	1	ppb	-44.038	-44.038	-2.80
V	51	72	2	ppb	1.026	1.026	11.07
Cr	52	72	1	ppb	1.628	1.628	3.00
Cr	52	72	2	ppb	2.094	2.094	1.50
Mn	55	72	1	ppb	2.008	2.008	2.08
Mn	55	72	2	ppb	2.116	2.116	4.34
Fe	56	72	1	ppb	181.677	181.677	1.56
Fe	56	72	2	ppb	209.235	209.235	0.43
Co	59	72	1	ppb	1.992	1.992	1.90
Co	59	72	2	ppb	2.118	2.118	1.29
Ni	60	72	1	ppb	1.989	1.989	2.54
Ni	60	72	2	ppb	2.179	2.179	2.40
Cu	63	72	1	ppb	1.963	1.963	2.28
Cu	63	72	2	ppb	2.099	2.099	3.06
Cu	65	72	1	ppb	2.028	2.028	1.25
Zn	66	72	1	ppb	2.650	2.650	1.34
Zn	66	72	2	ppb	1.694	1.694	5.04
Zn	68	72	1	ppb	1.988	1.988	3.72
As	75	72	1	ppb	-5.525	-5.525	-4.64
As	75	72	2	ppb	2.038	2.038	5.09
Se	78	72	1	ppb	2.105	2.105	16.66
Se	78	72	2	ppb	1.966	1.966	15.21
Se	82	72	1	ppb	2.161	2.161	14.19
Sr	88	72	1	ppb	1.970	1.970	0.49
Mo	95	72	1	ppb	2.004	2.004	5.15
Mo	97	72	1	ppb	1.944	1.944	1.19
Rh	103	115	1	ppb	-30.658	-30.658	-49.43
Pd	105	115	1	ppb	-7.279	-7.279	-551.47
Ag	107	72	1	ppb	2.039	2.039	1.87
Ag	109	72	1	ppb	2.090	2.090	1.19
Cd	111	115	1	ppb	1.893	1.893	0.95

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	1.895	1.895	1.69
Sn	118	72	1	ppb	1.989	1.989	2.81
Sn	119	72	1	ppb	2.003	2.003	2.78
Sb	121	72	1	ppb	2.441	2.441	3.41
Sb	121	72	2	ppb	2.340	2.340	2.97
Sb	123	72	1	ppb	2.473	2.473	3.69
Ba	135	115	1	ppb	1.838	1.838	3.61
Ba	137	115	1	ppb	1.915	1.915	1.90
W	182	209	1	ppb	-27.855	-27.855	-49.84
Pt	195	209	1	ppb	-1318.268	-1318.268	-32.92
Au	197	209	1	ppb	-740.963	-740.963	-33.98
Tl	203	209	1	ppb	2.054	2.054	4.78
Tl	205	209	1	ppb	1.985	1.985	4.40
Pb	206	209	1	ppb	1.867	1.867	1.52
Pb	207	209	1	ppb	1.853	1.853	4.10
Pb	208	209	1	ppb	1.864	1.864	1.27
U	238	209	1	ppb	1.717	1.717	1.39

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	606,375	1.68	651501	93.1	70	125	
1	Ge	72	2,951,419	1.61	3129453	94.3	70	125	
2	Ge	72	396,175	0.52	416984	95.0	70	125	
1	In	115	2,985,479	1.57	3134428	95.2	70	125	
1	Bi	209	2,875,066	1.52	2939886	97.8	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	012SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 13:01
Sample Name	ICB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.203	0.203	12.47
Be	9	6	1	ppb	0.020	0.020	9.72
B	11	6	1	ppb	2.629	2.629	4.99
Na	23	72	1	ppb	-0.658	-0.658	-248.52
Na	23	72	2	ppb	-1.713	-1.713	-22.80
Mg	24	72	1	ppb	0.182	0.182	698.67
Al	27	72	1	ppb	1.936	1.936	149.41
P	31	72	1	ppb	0.642	0.642	128.86
K	39	72	1	ppb	22.229	22.229	12.27
Ca	44	72	1	ppb	-46.483	-46.483	-37.60
Ca	44	72	2	ppb	4.502	4.502	44.36
Ti	47	72	1	ppb	0.010	0.010	262.16
Ti	47	72	2	ppb	0.108	0.108	118.52
V	51	72	1	ppb	-31.524	-31.524	-3.94
V	51	72	2	ppb	-0.748	-0.748	-7.04
Cr	52	72	1	ppb	-0.054	-0.054	-38.08
Cr	52	72	2	ppb	0.000	0.000	-11223.27
Mn	55	72	1	ppb	0.012	0.012	820.83
Mn	55	72	2	ppb	-0.003	-0.003	-954.05
Fe	56	72	1	ppb	-10.904	-10.904	-29.58
Fe	56	72	2	ppb	0.420	0.420	49.93
Co	59	72	1	ppb	0.005	0.005	121.79
Co	59	72	2	ppb	0.008	0.008	71.73
Ni	60	72	1	ppb	0.012	0.012	38.75
Ni	60	72	2	ppb	0.007	0.007	319.52
Cu	63	72	1	ppb	0.032	0.032	34.31
Cu	63	72	2	ppb	0.055	0.055	27.51
Cu	65	72	1	ppb	0.035	0.035	35.67
Zn	66	72	1	ppb	0.757	0.757	8.39
Zn	66	72	2	ppb	-0.366	-0.366	-16.73
Zn	68	72	1	ppb	0.078	0.078	89.08
As	75	72	1	ppb	-3.843	-3.843	-10.45
As	75	72	2	ppb	-0.043	-0.043	-24.06
Se	78	72	1	ppb	0.371	0.371	88.38
Se	78	72	2	ppb	-0.106	-0.106	-172.19
Se	82	72	1	ppb	0.348	0.348	107.55
Sr	88	72	1	ppb	0.012	0.012	377.10
Mo	95	72	1	ppb	0.012	0.012	254.63
Mo	97	72	1	ppb	0.002	0.002	816.30
Rh	103	115	1	ppb	-24.072	-24.072	-29.41
Pd	105	115	1	ppb	1.269	1.269	3487.42
Ag	107	72	1	ppb	0.000	0.000	1362.41
Ag	109	72	1	ppb	0.003	0.003	150.64
Cd	111	115	1	ppb	0.004	0.004	52.35

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.001	0.001	239.17
Sn	118	72	1	ppb	0.033	0.033	24.67
Sn	119	72	1	ppb	0.046	0.046	11.04
Sb	121	72	1	ppb	-0.015	-0.015	-76.90
Sb	121	72	2	ppb	0.065	0.065	40.81
Sb	123	72	1	ppb	-0.006	-0.006	-344.50
Ba	135	115	1	ppb	0.020	0.020	125.12
Ba	137	115	1	ppb	0.001	0.001	4497.13
W	182	209	1	ppb	-11.084	-11.084	-141.48
Pt	195	209	1	ppb	-687.894	-687.894	-183.55
Au	197	209	1	ppb	-353.402	-353.402	-223.80
Tl	203	209	1	ppb	0.010	0.010	543.41
Tl	205	209	1	ppb	0.002	0.002	2527.49
Pb	206	209	1	ppb	0.003	0.003	651.30
Pb	207	209	1	ppb	-0.004	-0.004	-598.48
Pb	208	209	1	ppb	0.002	0.002	1046.04
U	238	209	1	ppb	0.002	0.002	54.73

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	602,804	0.75	651501	92.5	70	125	
1	Ge	72	2,952,222	0.44	3129453	94.3	70	125	
2	Ge	72	394,435	0.46	416984	94.6	70	125	
1	In	115	2,969,288	0.84	3134428	94.7	70	125	
1	Bi	209	2,816,483	0.73	2939886	95.8	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	013SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 13:08
Sample Name	ICV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	106.680	106.680	1.63
Be	9	6	1	ppb	105.537	105.537	0.97
B	11	6	1	ppb	530.064	530.064	2.13
Na	23	72	1	ppb	9516.443	9516.443	0.91
Na	23	72	2	ppb	10162.832	10162.832	0.27
Mg	24	72	1	ppb	9568.769	9568.769	1.01
Al	27	72	1	ppb	96.611	96.611	2.88
P	31	72	1	ppb	466.417	466.417	0.30
K	39	72	1	ppb	9483.738	9483.738	0.69
Ca	44	72	1	ppb	9557.901	9557.901	0.92
Ca	44	72	2	ppb	10282.244	10282.244	1.20
Ti	47	72	1	ppb	93.871	93.871	1.44
Ti	47	72	2	ppb	100.111	100.111	2.25
V	51	72	1	ppb	76.417	76.417	4.27
V	51	72	2	ppb	100.664	100.664	1.15
Cr	52	72	1	ppb	95.580	95.580	1.19
Cr	52	72	2	ppb	102.035	102.035	0.77
Mn	55	72	1	ppb	95.012	95.012	2.05
Mn	55	72	2	ppb	102.153	102.153	0.73
Fe	56	72	1	ppb	9498.831	9498.831	0.92
Fe	56	72	2	ppb	10206.509	10206.509	1.14
Co	59	72	1	ppb	95.935	95.935	2.21
Co	59	72	2	ppb	101.169	101.169	0.99
Ni	60	72	1	ppb	95.832	95.832	1.04
Ni	60	72	2	ppb	102.419	102.419	0.99
Cu	63	72	1	ppb	94.831	94.831	0.67
Cu	63	72	2	ppb	102.655	102.655	0.28
Cu	65	72	1	ppb	96.345	96.345	0.75
Zn	66	72	1	ppb	94.996	94.996	0.77
Zn	66	72	2	ppb	101.593	101.593	0.74
Zn	68	72	1	ppb	95.197	95.197	0.51
As	75	72	1	ppb	91.617	91.617	1.29
As	75	72	2	ppb	100.622	100.622	0.40
Se	78	72	1	ppb	94.949	94.949	2.53
Se	78	72	2	ppb	100.094	100.094	0.47
Se	82	72	1	ppb	95.069	95.069	1.63
Sr	88	72	1	ppb	95.256	95.256	2.41
Mo	95	72	1	ppb	93.849	93.849	1.23
Mo	97	72	1	ppb	93.950	93.950	1.14
Rh	103	115	1	ppb	60.690	60.690	30.31
Pd	105	115	1	ppb	85.554	85.554	32.63
Ag	107	72	1	ppb	100.045	100.045	1.67
Ag	109	72	1	ppb	100.409	100.409	1.95
Cd	111	115	1	ppb	94.626	94.626	2.00

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	94.576	94.576	1.75
Sn	118	72	1	ppb	94.573	94.573	1.12
Sn	119	72	1	ppb	95.337	95.337	1.06
Sb	121	72	1	ppb	102.212	102.212	3.81
Sb	121	72	2	ppb	101.899	101.899	0.66
Sb	123	72	1	ppb	102.140	102.140	4.06
Ba	135	115	1	ppb	95.220	95.220	1.84
Ba	137	115	1	ppb	94.610	94.610	1.63
W	182	209	1	ppb	74.562	74.562	19.02
Pt	195	209	1	ppb	-869.183	-869.183	-59.76
Au	197	209	1	ppb	-366.466	-366.466	-138.73
Tl	203	209	1	ppb	101.675	101.675	2.61
Tl	205	209	1	ppb	102.340	102.340	1.81
Pb	206	209	1	ppb	94.108	94.108	2.38
Pb	207	209	1	ppb	94.298	94.298	2.19
Pb	208	209	1	ppb	95.629	95.629	1.58
U	238	209	1	ppb	102.950	102.950	0.94

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	556,219	0.97	651501	85.4	70	125	
1	Ge	72	2,913,453	1.11	3129453	93.1	70	125	
2	Ge	72	389,087	0.33	416984	93.3	70	125	
1	In	115	2,885,600	2.09	3134428	92.1	70	125	
1	Bi	209	2,712,843	2.30	2939886	92.3	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	014SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 13:14
Sample Name	ICSA	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.924	0.924	3.30
Be	9	6	1	ppb	0.044	0.044	20.35
B	11	6	1	ppb	5.116	5.116	4.86
Na	23	72	1	ppb	92220.617	92220.617	1.17
Na	23	72	2	ppb	100225.735	100225.735	0.76
Mg	24	72	1	ppb	92155.241	92155.241	1.13
Al	27	72	1	ppb	84761.413	84761.413	1.28
P	31	72	1	ppb	86154.710	86154.710	1.05
K	39	72	1	ppb	92125.059	92125.059	0.98
Ca	44	72	1	ppb	91504.405	91504.405	1.15
Ca	44	72	2	ppb	93424.883	93424.883	0.50
Ti	47	72	1	ppb	1880.772	1880.772	1.28
Ti	47	72	2	ppb	2010.437	2010.437	0.71
V	51	72	1	ppb	-70.813	-70.813	-0.53
V	51	72	2	ppb	-1.244	-1.244	-0.82
Cr	52	72	1	ppb	1.005	1.005	1.78
Cr	52	72	2	ppb	1.344	1.344	6.35
Mn	55	72	1	ppb	0.069	0.069	104.77
Mn	55	72	2	ppb	0.222	0.222	8.05
Fe	56	72	1	ppb	91697.707	91697.707	1.07
Fe	56	72	2	ppb	96621.884	96621.884	0.71
Co	59	72	1	ppb	0.150	0.150	1.80
Co	59	72	2	ppb	0.056	0.056	13.91
Ni	60	72	1	ppb	0.605	0.605	4.94
Ni	60	72	2	ppb	0.167	0.167	8.87
Cu	63	72	1	ppb	1.490	1.490	17.04
Cu	63	72	2	ppb	0.455	0.455	7.20
Cu	65	72	1	ppb	1.244	1.244	2.00
Zn	66	72	1	ppb	1.931	1.931	2.24
Zn	66	72	2	ppb	0.084	0.084	132.70
Zn	68	72	1	ppb	0.436	0.436	3.63
As	75	72	1	ppb	-12.269	-12.269	-1.86
As	75	72	2	ppb	0.070	0.070	60.84
Se	78	72	1	ppb	4.202	4.202	39.31
Se	78	72	2	ppb	0.140	0.140	72.90
Se	82	72	1	ppb	0.200	0.200	64.56
Sr	88	72	1	ppb	0.866	0.866	1.47
Mo	95	72	1	ppb	1867.436	1867.436	1.88
Mo	97	72	1	ppb	1860.497	1860.497	1.61
Rh	103	115	1	ppb	-16.614	-16.614	-150.96
Pd	105	115	1	ppb	-1.926	-1.926	-1626.55
Ag	107	72	1	ppb	0.224	0.224	35.28
Ag	109	72	1	ppb	0.227	0.227	37.24
Cd	111	115	1	ppb	0.877	0.877	3.02

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.628	0.628	2.44
Sn	118	72	1	ppb	0.139	0.139	9.82
Sn	119	72	1	ppb	0.133	0.133	25.24
Sb	121	72	1	ppb	0.586	0.586	8.49
Sb	121	72	2	ppb	0.588	0.588	2.21
Sb	123	72	1	ppb	0.594	0.594	6.51
Ba	135	115	1	ppb	0.078	0.078	19.61
Ba	137	115	1	ppb	0.082	0.082	8.51
W	182	209	1	ppb	1134.995	1134.995	6.75
Pt	195	209	1	ppb	648.450	648.450	171.86
Au	197	209	1	ppb	221.938	221.938	495.07
Tl	203	209	1	ppb	0.065	0.065	65.31
Tl	205	209	1	ppb	0.050	0.050	78.66
Pb	206	209	1	ppb	0.103	0.103	13.33
Pb	207	209	1	ppb	0.091	0.091	8.39
Pb	208	209	1	ppb	0.099	0.099	8.54
U	238	209	1	ppb	0.019	0.019	42.43

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	593,702	0.39	651501	91.1	70	125	
1	Ge	72	2,875,067	0.44	3129453	91.9	70	125	
2	Ge	72	392,899	0.66	416984	94.2	70	125	
1	In	115	2,835,742	0.44	3134428	90.5	70	125	
1	Bi	209	2,714,165	0.54	2939886	92.3	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	015SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 13:19
Sample Name	ICSAB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	99.013	99.013	1.02
Be	9	6	1	ppb	92.891	92.891	1.49
B	11	6	1	ppb	483.481	483.481	2.10
Na	23	72	1	ppb	104546.656	104546.656	1.63
Na	23	72	2	ppb	112290.479	112290.479	0.37
Mg	24	72	1	ppb	103538.453	103538.453	2.25
Al	27	72	1	ppb	87148.501	87148.501	2.57
P	31	72	1	ppb	87077.608	87077.608	1.96
K	39	72	1	ppb	102792.960	102792.960	1.89
Ca	44	72	1	ppb	101568.427	101568.427	2.33
Ca	44	72	2	ppb	104086.349	104086.349	0.69
Ti	47	72	1	ppb	1972.339	1972.339	2.79
Ti	47	72	2	ppb	2117.143	2117.143	0.71
V	51	72	1	ppb	43.280	43.280	5.49
V	51	72	2	ppb	97.019	97.019	0.62
Cr	52	72	1	ppb	90.635	90.635	2.95
Cr	52	72	2	ppb	96.958	96.958	0.26
Mn	55	72	1	ppb	90.981	90.981	1.50
Mn	55	72	2	ppb	95.088	95.088	0.40
Fe	56	72	1	ppb	102644.230	102644.230	2.42
Fe	56	72	2	ppb	108273.544	108273.544	0.23
Co	59	72	1	ppb	91.192	91.192	2.37
Co	59	72	2	ppb	96.091	96.091	0.30
Ni	60	72	1	ppb	89.985	89.985	2.07
Ni	60	72	2	ppb	94.990	94.990	0.64
Cu	63	72	1	ppb	89.865	89.865	2.33
Cu	63	72	2	ppb	94.609	94.609	0.43
Cu	65	72	1	ppb	89.572	89.572	1.64
Zn	66	72	1	ppb	92.470	92.470	2.39
Zn	66	72	2	ppb	96.282	96.282	1.39
Zn	68	72	1	ppb	90.629	90.629	2.43
As	75	72	1	ppb	80.224	80.224	2.51
As	75	72	2	ppb	97.080	97.080	0.30
Se	78	72	1	ppb	100.780	100.780	3.40
Se	78	72	2	ppb	94.378	94.378	2.06
Se	82	72	1	ppb	91.157	91.157	1.48
Sr	88	72	1	ppb	91.288	91.288	2.43
Mo	95	72	1	ppb	1981.099	1981.099	2.97
Mo	97	72	1	ppb	1982.889	1982.889	2.64
Rh	103	115	1	ppb	57.193	57.193	16.26
Pd	105	115	1	ppb	59.204	59.204	103.85
Ag	107	72	1	ppb	90.822	90.822	2.33
Ag	109	72	1	ppb	91.439	91.439	2.01
Cd	111	115	1	ppb	90.831	90.831	1.35

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	90.844	90.844	1.62
Sn	118	72	1	ppb	90.092	90.092	2.48
Sn	119	72	1	ppb	90.668	90.668	2.04
Sb	121	72	1	ppb	109.461	109.461	3.25
Sb	121	72	2	ppb	99.550	99.550	0.21
Sb	123	72	1	ppb	109.480	109.480	2.84
Ba	135	115	1	ppb	90.479	90.479	1.47
Ba	137	115	1	ppb	90.664	90.664	1.36
W	182	209	1	ppb	1358.185	1358.185	4.85
Pt	195	209	1	ppb	-889.019	-889.019	-42.77
Au	197	209	1	ppb	716.117	716.117	141.70
Tl	203	209	1	ppb	83.916	83.916	3.24
Tl	205	209	1	ppb	84.228	84.228	4.16
Pb	206	209	1	ppb	86.309	86.309	1.31
Pb	207	209	1	ppb	86.537	86.537	0.99
Pb	208	209	1	ppb	88.262	88.262	1.35
U	238	209	1	ppb	97.813	97.813	1.65

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	597,954	0.78	651501	91.8	70	125	
1	Ge	72	2,943,024	1.05	3129453	94.0	70	125	
2	Ge	72	404,017	0.07	416984	96.9	70	125	
1	In	115	2,904,759	0.31	3134428	92.7	70	125	
1	Bi	209	2,752,418	0.71	2939886	93.6	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	026SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 14:10
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	103.942	103.942	1.61
Be	9	6	1	ppb	100.395	100.395	1.68
B	11	6	1	ppb	518.508	518.508	2.91
Na	23	72	1	ppb	9467.435	9467.435	2.15
Na	23	72	2	ppb	10328.681	10328.681	0.79
Mg	24	72	1	ppb	9509.821	9509.821	1.90
Al	27	72	1	ppb	96.859	96.859	0.72
P	31	72	1	ppb	447.552	447.552	1.44
K	39	72	1	ppb	9331.182	9331.182	0.76
Ca	44	72	1	ppb	9407.451	9407.451	1.38
Ca	44	72	2	ppb	9799.324	9799.324	0.64
Ti	47	72	1	ppb	93.264	93.264	1.39
Ti	47	72	2	ppb	100.005	100.005	1.31
V	51	72	1	ppb	23.646	23.646	5.53
V	51	72	2	ppb	100.038	100.038	0.32
Cr	52	72	1	ppb	93.303	93.303	1.52
Cr	52	72	2	ppb	103.135	103.135	0.23
Mn	55	72	1	ppb	96.313	96.313	0.80
Mn	55	72	2	ppb	100.751	100.751	0.75
Fe	56	72	1	ppb	9482.987	9482.987	1.64
Fe	56	72	2	ppb	10246.529	10246.529	0.40
Co	59	72	1	ppb	95.789	95.789	1.40
Co	59	72	2	ppb	103.576	103.576	0.39
Ni	60	72	1	ppb	94.159	94.159	1.05
Ni	60	72	2	ppb	104.319	104.319	1.29
Cu	63	72	1	ppb	93.974	93.974	1.12
Cu	63	72	2	ppb	104.742	104.742	0.89
Cu	65	72	1	ppb	94.979	94.979	1.86
Zn	66	72	1	ppb	96.153	96.153	1.45
Zn	66	72	2	ppb	102.186	102.186	0.39
Zn	68	72	1	ppb	95.141	95.141	1.79
As	75	72	1	ppb	73.840	73.840	1.36
As	75	72	2	ppb	100.805	100.805	0.96
Se	78	72	1	ppb	94.516	94.516	0.93
Se	78	72	2	ppb	96.839	96.839	2.37
Se	82	72	1	ppb	95.520	95.520	2.24
Sr	88	72	1	ppb	94.873	94.873	0.87
Mo	95	72	1	ppb	94.392	94.392	1.37
Mo	97	72	1	ppb	94.815	94.815	1.57
Rh	103	115	1	ppb	28.953	28.953	83.56
Pd	105	115	1	ppb	120.891	120.891	8.99
Ag	107	72	1	ppb	101.628	101.628	1.82
Ag	109	72	1	ppb	101.708	101.708	1.74
Cd	111	115	1	ppb	92.938	92.938	2.53

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	93.573	93.573	1.88
Sn	118	72	1	ppb	98.678	98.678	2.91
Sn	119	72	1	ppb	96.788	96.788	1.77
Sb	121	72	1	ppb	106.937	106.937	4.43
Sb	121	72	2	ppb	101.910	101.910	1.31
Sb	123	72	1	ppb	107.023	107.023	4.23
Ba	135	115	1	ppb	94.343	94.343	2.78
Ba	137	115	1	ppb	94.844	94.844	2.14
W	182	209	1	ppb	58.607	58.607	43.45
Pt	195	209	1	ppb	-406.144	-406.144	-70.23
Au	197	209	1	ppb	-447.451	-447.451	-122.48
Tl	203	209	1	ppb	97.900	97.900	1.42
Tl	205	209	1	ppb	98.533	98.533	2.44
Pb	206	209	1	ppb	91.966	91.966	1.85
Pb	207	209	1	ppb	92.368	92.368	1.09
Pb	208	209	1	ppb	93.652	93.652	1.42
U	238	209	1	ppb	101.687	101.687	1.48

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	566,943	1.26	651501	87.0	70	125	
1	Ge	72	2,882,436	1.25	3129453	92.1	70	125	
2	Ge	72	378,913	0.22	416984	90.9	70	125	
1	In	115	2,944,723	1.60	3134428	93.9	70	125	
1	Bi	209	2,855,425	1.17	2939886	97.1	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**027CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 14:15**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	(b) (6) **ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Pass**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.29	20.72	ppb	2.5	
Be	9	6	1	0.05	21.91	ppb	1	
B	11	6	1	3.42	20.18	ppb	5	
Na	23	72	1	6.98	16.35	ppb	250	
Na	23	72	2	5.17	20.84	ppb	250	
Mg	24	72	1	3.82	11.13	ppb	250	
Al	27	72	1	2.61	61.48	ppb	5	
P	31	72	1	1.98	31.47	ppb	5	
K	39	72	1	29.38	14.74	ppb	250	
Ca	44	72	1	-102.39	-12.64	ppb	250	
Ca	44	72	2	15.71	11.42	ppb	250	
Ti	47	72	1	0.09	41.78	ppb	2.5	
Ti	47	72	2	0.17	39.48	ppb	2.5	
V	51	72	1	-86.59	-0.23	ppb	2.5	
V	51	72	2	-1.46	-2.99	ppb	2.5	
Cr	52	72	1	-1.28	-2.31	ppb	2.5	
Cr	52	72	2	0.03	162.32	ppb	2.5	
Mn	55	72	1	0.26	31.55	ppb	2.5	
Mn	55	72	2	0.17	22.75	ppb	2.5	
Fe	56	72	1	-2.22	-87.87	ppb	100	
Fe	56	72	2	6.30	1.50	ppb	100	
Co	59	72	1	0.04	4.14	ppb	2.5	
Co	59	72	2	0.07	11.40	ppb	2.5	
Ni	60	72	1	0.04	15.80	ppb	2.5	
Ni	60	72	2	0.06	21.47	ppb	2.5	
Cu	63	72	1	0.08	1.39	ppb	2.5	
Cu	63	72	2	0.11	5.47	ppb	2.5	
Cu	65	72	1	0.12	18.11	ppb	2.5	
Zn	66	72	1	0.77	9.41	ppb	2.5	
Zn	66	72	2	-0.21	-13.21	ppb	2.5	
Zn	68	72	1	0.08	87.86	ppb	2.5	
As	75	72	1	-20.27	-2.71	ppb	2.5	
As	75	72	2	-0.02	-73.55	ppb	2.5	
Se	78	72	1	0.15	203.35	ppb	2.5	
Se	78	72	2	-0.15	-133.71	ppb	2.5	
Se	82	72	1	-0.21	-11.75	ppb	2.5	
Sr	88	72	1	0.07	36.12	ppb	2.5	
Mo	95	72	1	0.16	3.33	ppb	2.5	
Mo	97	72	1	0.15	6.43	ppb	2.5	
Ag	107	72	1	0.04	16.00	ppb	2.5	
Ag	109	72	1	0.04	7.52	ppb	2.5	
Cd	111	115	1	0.04	31.47	ppb	2.5	
Cd	114	115	1	0.04	30.77	ppb	2.5	
Sn	118	72	1	0.11	8.36	ppb	2.5	
Sn	119	72	1	0.09	43.44	ppb	2.5	
Sb	121	72	1	0.76	1.21	ppb	2.5	
Sb	121	72	2	0.62	4.61	ppb	2.5	
Sb	123	72	1	0.76	2.57	ppb	2.5	
Ba	135	115	1	0.05	14.83	ppb	2.5	
Ba	137	115	1	0.06	24.30	ppb	2.5	
Tl	203	209	1	0.38	12.02	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.37	11.94	ppb	2.5	
Pb	206	209	1	0.10	19.78	ppb	2.5	
Pb	207	209	1	0.10	30.41	ppb	2.5	
Pb	208	209	1	0.10	19.58	ppb	2.5	
U	238	209	1	0.04	12.63	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	628371	0.63	651501	96.4	70	125	
Ge	72	1	2986234	0.41	3129453	95.4	70	125	
Ge	72	2	401404	0.68	416984	96.3	70	125	
In	115	1	3053021	1.58	3134428	97.4	70	125	
Bi	209	1	2916069	1.61	2939886	99.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	036SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 14:55
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	106.112	106.112	2.51
Be	9	6	1	ppb	105.930	105.930	2.46
B	11	6	1	ppb	543.402	543.402	3.97
Na	23	72	1	ppb	9228.325	9228.325	1.51
Na	23	72	2	ppb	9996.764	9996.764	1.26
Mg	24	72	1	ppb	9272.396	9272.396	1.54
Al	27	72	1	ppb	94.834	94.834	1.10
P	31	72	1	ppb	450.699	450.699	1.85
K	39	72	1	ppb	9201.136	9201.136	1.46
Ca	44	72	1	ppb	9199.380	9199.380	0.93
Ca	44	72	2	ppb	9745.875	9745.875	0.81
Ti	47	72	1	ppb	92.256	92.256	1.05
Ti	47	72	2	ppb	98.562	98.562	1.99
V	51	72	1	ppb	21.868	21.868	7.75
V	51	72	2	ppb	98.480	98.480	0.34
Cr	52	72	1	ppb	91.852	91.852	1.25
Cr	52	72	2	ppb	100.182	100.182	0.61
Mn	55	72	1	ppb	94.049	94.049	2.07
Mn	55	72	2	ppb	99.053	99.053	1.07
Fe	56	72	1	ppb	9288.372	9288.372	1.56
Fe	56	72	2	ppb	10012.529	10012.529	0.24
Co	59	72	1	ppb	94.139	94.139	2.10
Co	59	72	2	ppb	100.428	100.428	0.40
Ni	60	72	1	ppb	92.038	92.038	1.54
Ni	60	72	2	ppb	100.853	100.853	0.84
Cu	63	72	1	ppb	92.066	92.066	1.20
Cu	63	72	2	ppb	102.341	102.341	0.50
Cu	65	72	1	ppb	93.363	93.363	1.20
Zn	66	72	1	ppb	93.848	93.848	1.14
Zn	66	72	2	ppb	101.298	101.298	2.14
Zn	68	72	1	ppb	94.361	94.361	0.88
As	75	72	1	ppb	73.099	73.099	1.62
As	75	72	2	ppb	99.908	99.908	0.47
Se	78	72	1	ppb	91.588	91.588	1.27
Se	78	72	2	ppb	95.204	95.204	5.01
Se	82	72	1	ppb	94.110	94.110	0.79
Sr	88	72	1	ppb	94.541	94.541	1.31
Mo	95	72	1	ppb	93.491	93.491	1.82
Mo	97	72	1	ppb	93.492	93.492	2.91
Rh	103	115	1	ppb	17.551	17.551	80.69
Pd	105	115	1	ppb	130.639	130.639	55.44
Ag	107	72	1	ppb	99.533	99.533	1.32
Ag	109	72	1	ppb	100.223	100.223	2.25
Cd	111	115	1	ppb	93.242	93.242	1.97

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	93.662	93.662	1.95
Sn	118	72	1	ppb	93.990	93.990	0.85
Sn	119	72	1	ppb	94.914	94.914	0.73
Sb	121	72	1	ppb	107.095	107.095	3.29
Sb	121	72	2	ppb	102.006	102.006	1.38
Sb	123	72	1	ppb	106.935	106.935	3.09
Ba	135	115	1	ppb	93.816	93.816	2.01
Ba	137	115	1	ppb	94.328	94.328	2.02
W	182	209	1	ppb	77.505	77.505	46.40
Pt	195	209	1	ppb	-259.689	-259.689	-456.03
Au	197	209	1	ppb	-468.978	-468.978	-71.86
Tl	203	209	1	ppb	98.153	98.153	1.15
Tl	205	209	1	ppb	98.281	98.281	1.65
Pb	206	209	1	ppb	92.300	92.300	0.71
Pb	207	209	1	ppb	91.829	91.829	0.57
Pb	208	209	1	ppb	93.303	93.303	0.77
U	238	209	1	ppb	101.473	101.473	1.18

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	563,727	1.71	651501	86.5	70	125	
1	Ge	72	3,014,319	1.81	3129453	96.3	70	125	
2	Ge	72	391,000	0.16	416984	93.8	70	125	
1	In	115	3,011,312	1.74	3134428	96.1	70	125	
1	Bi	209	2,901,256	1.19	2939886	98.7	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**037CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 15:00**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Pass**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.38	11.41	ppb	2.5	
Be	9	6	1	0.06	15.08	ppb	1	
B	11	6	1	4.64	5.43	ppb	5	
Na	23	72	1	4.49	8.57	ppb	250	
Na	23	72	2	4.32	10.93	ppb	250	
Mg	24	72	1	3.85	6.07	ppb	250	
Al	27	72	1	2.43	62.56	ppb	5	
P	31	72	1	1.75	10.42	ppb	5	
K	39	72	1	6.63	179.01	ppb	250	
Ca	44	72	1	-123.05	-8.01	ppb	250	
Ca	44	72	2	14.37	34.66	ppb	250	
Ti	47	72	1	0.07	6.52	ppb	2.5	
Ti	47	72	2	0.16	71.25	ppb	2.5	
V	51	72	1	-86.54	-0.62	ppb	2.5	
V	51	72	2	-1.42	-2.81	ppb	2.5	
Cr	52	72	1	-1.28	-1.59	ppb	2.5	
Cr	52	72	2	0.04	41.52	ppb	2.5	
Mn	55	72	1	0.21	23.64	ppb	2.5	
Mn	55	72	2	0.11	15.14	ppb	2.5	
Fe	56	72	1	-11.36	-37.38	ppb	100	
Fe	56	72	2	8.92	5.77	ppb	100	
Co	59	72	1	0.04	8.19	ppb	2.5	
Co	59	72	2	0.09	17.30	ppb	2.5	
Ni	60	72	1	0.05	28.08	ppb	2.5	
Ni	60	72	2	0.07	15.40	ppb	2.5	
Cu	63	72	1	0.08	9.84	ppb	2.5	
Cu	63	72	2	0.12	2.09	ppb	2.5	
Cu	65	72	1	0.08	20.88	ppb	2.5	
Zn	66	72	1	0.83	6.02	ppb	2.5	
Zn	66	72	2	-0.23	-24.40	ppb	2.5	
Zn	68	72	1	0.04	143.48	ppb	2.5	
As	75	72	1	-20.12	-0.65	ppb	2.5	
As	75	72	2	0.02	238.27	ppb	2.5	
Se	78	72	1	-1.35	-27.73	ppb	2.5	
Se	78	72	2	0.06	205.96	ppb	2.5	
Se	82	72	1	-0.30	-36.11	ppb	2.5	
Sr	88	72	1	0.07	47.12	ppb	2.5	
Mo	95	72	1	0.14	6.53	ppb	2.5	
Mo	97	72	1	0.14	6.21	ppb	2.5	
Ag	107	72	1	0.05	15.28	ppb	2.5	
Ag	109	72	1	0.04	13.51	ppb	2.5	
Cd	111	115	1	0.04	14.44	ppb	2.5	
Cd	114	115	1	0.04	19.27	ppb	2.5	
Sn	118	72	1	0.08	13.02	ppb	2.5	
Sn	119	72	1	0.09	8.75	ppb	2.5	
Sb	121	72	1	0.70	9.82	ppb	2.5	
Sb	121	72	2	0.69	4.65	ppb	2.5	
Sb	123	72	1	0.71	10.26	ppb	2.5	
Ba	135	115	1	0.05	18.16	ppb	2.5	
Ba	137	115	1	0.06	25.90	ppb	2.5	
Tl	203	209	1	0.53	13.97	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.51	13.25	ppb	2.5	
Pb	206	209	1	0.05	27.75	ppb	2.5	
Pb	207	209	1	0.05	15.93	ppb	2.5	
Pb	208	209	1	0.05	15.55	ppb	2.5	
U	238	209	1	0.04	19.90	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	629994	2.81	651501	96.7	70	125	
Ge	72	1	3138660	4.32	3129453	100.3	70	125	
Ge	72	2	407597	0.69	416984	97.7	70	125	
In	115	1	3149264	3.94	3134428	100.5	70	125	
Bi	209	1	3038113	3.67	2939886	103.3	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	045SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 15:35
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	107.363	107.363	1.42
Be	9	6	1	ppb	103.702	103.702	0.64
B	11	6	1	ppb	534.908	534.908	0.62
Na	23	72	1	ppb	8978.423	8978.423	0.59
Na	23	72	2	ppb	9681.735	9681.735	3.05
Mg	24	72	1	ppb	9041.525	9041.525	0.72
Al	27	72	1	ppb	93.468	93.468	0.99
P	31	72	1	ppb	424.805	424.805	0.47
K	39	72	1	ppb	8901.420	8901.420	0.46
Ca	44	72	1	ppb	8926.258	8926.258	0.29
Ca	44	72	2	ppb	9593.996	9593.996	2.00
Ti	47	72	1	ppb	90.407	90.407	0.86
Ti	47	72	2	ppb	96.618	96.618	3.31
V	51	72	1	ppb	21.132	21.132	7.64
V	51	72	2	ppb	97.271	97.271	3.11
Cr	52	72	1	ppb	90.630	90.630	0.67
Cr	52	72	2	ppb	98.816	98.816	3.26
Mn	55	72	1	ppb	93.313	93.313	0.85
Mn	55	72	2	ppb	98.795	98.795	3.63
Fe	56	72	1	ppb	9268.064	9268.064	0.87
Fe	56	72	2	ppb	9960.912	9960.912	1.96
Co	59	72	1	ppb	93.389	93.389	1.32
Co	59	72	2	ppb	100.731	100.731	1.70
Ni	60	72	1	ppb	92.072	92.072	0.30
Ni	60	72	2	ppb	100.214	100.214	2.11
Cu	63	72	1	ppb	91.482	91.482	0.59
Cu	63	72	2	ppb	101.048	101.048	1.18
Cu	65	72	1	ppb	92.425	92.425	0.36
Zn	66	72	1	ppb	93.057	93.057	0.99
Zn	66	72	2	ppb	100.847	100.847	0.47
Zn	68	72	1	ppb	93.082	93.082	0.62
As	75	72	1	ppb	71.959	71.959	0.44
As	75	72	2	ppb	99.262	99.262	0.36
Se	78	72	1	ppb	92.313	92.313	0.62
Se	78	72	2	ppb	94.780	94.780	3.18
Se	82	72	1	ppb	93.070	93.070	1.43
Sr	88	72	1	ppb	93.866	93.866	0.83
Mo	95	72	1	ppb	93.356	93.356	0.99
Mo	97	72	1	ppb	93.129	93.129	1.37
Rh	103	115	1	ppb	17.243	17.243	54.27
Pd	105	115	1	ppb	116.815	116.815	35.13
Ag	107	72	1	ppb	100.976	100.976	0.80
Ag	109	72	1	ppb	99.117	99.117	1.23
Cd	111	115	1	ppb	94.576	94.576	0.58

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	94.300	94.300	0.21
Sn	118	72	1	ppb	93.247	93.247	0.19
Sn	119	72	1	ppb	93.845	93.845	0.80
Sb	121	72	1	ppb	107.454	107.454	2.03
Sb	121	72	2	ppb	101.409	101.409	2.17
Sb	123	72	1	ppb	107.461	107.461	2.47
Ba	135	115	1	ppb	94.639	94.639	1.74
Ba	137	115	1	ppb	95.235	95.235	0.92
W	182	209	1	ppb	20.728	20.728	68.22
Pt	195	209	1	ppb	-942.708	-942.708	-55.72
Au	197	209	1	ppb	-705.662	-705.662	-33.74
Tl	203	209	1	ppb	97.923	97.923	0.67
Tl	205	209	1	ppb	98.440	98.440	0.95
Pb	206	209	1	ppb	91.982	91.982	0.19
Pb	207	209	1	ppb	92.123	92.123	0.86
Pb	208	209	1	ppb	93.489	93.489	0.17
U	238	209	1	ppb	101.084	101.084	0.30

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	558,744	0.93	651501	85.8	70	125	
1	Ge	72	3,089,900	1.01	3129453	98.7	70	125	
2	Ge	72	409,033	3.41	416984	98.1	70	125	
1	In	115	3,044,170	0.64	3134428	97.1	70	125	
1	Bi	209	2,959,976	0.51	2939886	100.7	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**046CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 15:40**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	**(b) (6) ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.62	10.12	ppb	2.5	
Be	9	6	1	0.09	9.87	ppb	1	
B	11	6	1	6.21	8.40	ppb	5	>2.2*DL
Na	23	72	1	0.88	93.58	ppb	250	
Na	23	72	2	-2.16	-12.62	ppb	250	
Mg	24	72	1	6.82	4.89	ppb	250	
Al	27	72	1	2.89	33.82	ppb	5	
P	31	72	1	-1.87	-31.04	ppb	5	
K	39	72	1	-13.98	-32.29	ppb	250	
Ca	44	72	1	-145.70	-5.06	ppb	250	
Ca	44	72	2	25.99	11.46	ppb	250	
Ti	47	72	1	0.09	41.90	ppb	2.5	
Ti	47	72	2	0.19	11.32	ppb	2.5	
V	51	72	1	-84.31	-0.89	ppb	2.5	
V	51	72	2	-1.36	-3.14	ppb	2.5	
Cr	52	72	1	-1.34	-1.21	ppb	2.5	
Cr	52	72	2	0.00	371.99	ppb	2.5	
Mn	55	72	1	0.12	44.14	ppb	2.5	
Mn	55	72	2	0.19	9.50	ppb	2.5	
Fe	56	72	1	-17.02	-12.46	ppb	100	
Fe	56	72	2	9.44	7.18	ppb	100	
Co	59	72	1	0.05	14.22	ppb	2.5	
Co	59	72	2	0.07	5.77	ppb	2.5	
Ni	60	72	1	0.05	30.26	ppb	2.5	
Ni	60	72	2	0.07	15.09	ppb	2.5	
Cu	63	72	1	0.14	13.23	ppb	2.5	
Cu	63	72	2	0.14	2.98	ppb	2.5	
Cu	65	72	1	0.15	7.48	ppb	2.5	
Zn	66	72	1	0.85	1.31	ppb	2.5	
Zn	66	72	2	-0.19	-20.35	ppb	2.5	
Zn	68	72	1	0.09	17.72	ppb	2.5	
As	75	72	1	-20.53	-0.54	ppb	2.5	
As	75	72	2	0.02	27.74	ppb	2.5	
Se	78	72	1	-0.15	-485.81	ppb	2.5	
Se	78	72	2	0.01	928.66	ppb	2.5	
Se	82	72	1	-0.20	-64.21	ppb	2.5	
Sr	88	72	1	0.08	29.71	ppb	2.5	
Mo	95	72	1	0.15	14.95	ppb	2.5	
Mo	97	72	1	0.15	13.90	ppb	2.5	
Ag	107	72	1	0.06	15.30	ppb	2.5	
Ag	109	72	1	0.06	14.24	ppb	2.5	
Cd	111	115	1	0.06	9.59	ppb	2.5	
Cd	114	115	1	0.05	9.21	ppb	2.5	
Sn	118	72	1	0.10	8.03	ppb	2.5	
Sn	119	72	1	0.09	9.77	ppb	2.5	
Sb	121	72	1	0.58	4.72	ppb	2.5	
Sb	121	72	2	0.52	8.62	ppb	2.5	
Sb	123	72	1	0.57	5.73	ppb	2.5	
Ba	135	115	1	0.10	20.50	ppb	2.5	
Ba	137	115	1	0.09	8.67	ppb	2.5	
Tl	203	209	1	1.01	14.41	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.98	15.98	ppb	2.5	
Pb	206	209	1	0.07	27.71	ppb	2.5	
Pb	207	209	1	0.06	28.96	ppb	2.5	
Pb	208	209	1	0.06	18.46	ppb	2.5	
U	238	209	1	0.05	7.47	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	615488	1.71	651501	94.5	70	125	
Ge	72	1	3153701	1.84	3129453	100.8	70	125	
Ge	72	2	417050	0.91	416984	100.0	70	125	
In	115	1	3187462	1.08	3134428	101.7	70	125	
Bi	209	1	3023756	1.80	2939886	102.9	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	055SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 16:29
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	113.728	113.728	4.24
Be	9	6	1	ppb	106.388	106.388	4.88
B	11	6	1	ppb	562.648	562.648	5.07
Na	23	72	1	ppb	9200.402	9200.402	5.23
Na	23	72	2	ppb	9534.372	9534.372	0.36
Mg	24	72	1	ppb	9308.180	9308.180	5.18
Al	27	72	1	ppb	112.262	112.262	5.55
P	31	72	1	ppb	440.499	440.499	6.00
K	39	72	1	ppb	9270.693	9270.693	6.01
Ca	44	72	1	ppb	9397.799	9397.799	4.64
Ca	44	72	2	ppb	9488.635	9488.635	1.00
Ti	47	72	1	ppb	92.079	92.079	5.39
Ti	47	72	2	ppb	97.232	97.232	2.06
V	51	72	1	ppb	17.921	17.921	36.45
V	51	72	2	ppb	96.059	96.059	1.01
Cr	52	72	1	ppb	92.533	92.533	4.29
Cr	52	72	2	ppb	98.212	98.212	0.62
Mn	55	72	1	ppb	95.692	95.692	4.81
Mn	55	72	2	ppb	96.449	96.449	0.47
Fe	56	72	1	ppb	9529.299	9529.299	4.31
Fe	56	72	2	ppb	9730.047	9730.047	0.26
Co	59	72	1	ppb	95.234	95.234	3.96
Co	59	72	2	ppb	98.145	98.145	0.36
Ni	60	72	1	ppb	93.807	93.807	4.99
Ni	60	72	2	ppb	99.107	99.107	0.42
Cu	63	72	1	ppb	95.271	95.271	4.73
Cu	63	72	2	ppb	100.569	100.569	0.38
Cu	65	72	1	ppb	96.060	96.060	5.27
Zn	66	72	1	ppb	96.301	96.301	4.75
Zn	66	72	2	ppb	98.434	98.434	1.13
Zn	68	72	1	ppb	95.614	95.614	4.31
As	75	72	1	ppb	72.868	72.868	7.37
As	75	72	2	ppb	97.744	97.744	0.33
Se	78	72	1	ppb	98.083	98.083	6.37
Se	78	72	2	ppb	94.979	94.979	0.49
Se	82	72	1	ppb	96.706	96.706	6.02
Sr	88	72	1	ppb	97.798	97.798	5.25
Mo	95	72	1	ppb	95.205	95.205	4.15
Mo	97	72	1	ppb	95.776	95.776	4.12
Rh	103	115	1	ppb	32.734	32.734	42.77
Pd	105	115	1	ppb	140.470	140.470	4.10
Ag	107	72	1	ppb	104.695	104.695	5.28
Ag	109	72	1	ppb	103.875	103.875	4.99
Cd	111	115	1	ppb	97.016	97.016	4.74

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	96.936	96.936	4.86
Sn	118	72	1	ppb	97.620	97.620	4.77
Sn	119	72	1	ppb	96.922	96.922	5.07
Sb	121	72	1	ppb	113.701	113.701	3.55
Sb	121	72	2	ppb	101.055	101.055	0.39
Sb	123	72	1	ppb	113.556	113.556	3.90
Ba	135	115	1	ppb	98.471	98.471	5.31
Ba	137	115	1	ppb	99.130	99.130	5.37
W	182	209	1	ppb	47.495	47.495	64.28
Pt	195	209	1	ppb	-1119.669	-1119.669	-22.81
Au	197	209	1	ppb	-832.060	-832.060	-53.53
Tl	203	209	1	ppb	101.108	101.108	3.66
Tl	205	209	1	ppb	102.175	102.175	3.43
Pb	206	209	1	ppb	149.503	149.503	9.93
Pb	207	209	1	ppb	143.616	143.616	6.90
Pb	208	209	1	ppb	147.321	147.321	7.45
U	238	209	1	ppb	104.768	104.768	3.09

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	546,887	4.69	651501	83.9	70	125	
1	Ge	72	3,106,820	4.84	3129453	99.3	70	125	
2	Ge	72	425,255	0.28	416984	102.0	70	125	
1	In	115	3,082,936	4.86	3134428	98.4	70	125	
1	Bi	209	2,955,195	3.24	2939886	100.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**056CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 16:33**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.69	4.66	ppb	2.5	
Be	9	6	1	0.10	15.76	ppb	1	
B	11	6	1	10.28	5.96	ppb	5	>2.2*DL
Na	23	72	1	3.57	7.47	ppb	250	
Na	23	72	2	0.58	42.46	ppb	250	
Mg	24	72	1	14.98	9.57	ppb	250	
Al	27	72	1	4.58	19.81	ppb	5	
P	31	72	1	-4.34	-16.87	ppb	5	
K	39	72	1	-25.20	-24.54	ppb	250	
Ca	44	72	1	-148.00	-3.73	ppb	250	
Ca	44	72	2	38.23	20.38	ppb	250	
Ti	47	72	1	0.09	28.18	ppb	2.5	
Ti	47	72	2	0.17	49.91	ppb	2.5	
V	51	72	1	-92.13	-0.47	ppb	2.5	
V	51	72	2	-1.49	-0.56	ppb	2.5	
Cr	52	72	1	-1.51	-1.17	ppb	2.5	
Cr	52	72	2	0.03	26.54	ppb	2.5	
Mn	55	72	1	0.05	103.19	ppb	2.5	
Mn	55	72	2	0.32	19.24	ppb	2.5	
Fe	56	72	1	-22.62	-9.48	ppb	100	
Fe	56	72	2	19.03	1.60	ppb	100	
Co	59	72	1	0.06	2.15	ppb	2.5	
Co	59	72	2	0.09	11.72	ppb	2.5	
Ni	60	72	1	0.06	25.05	ppb	2.5	
Ni	60	72	2	0.08	17.41	ppb	2.5	
Cu	63	72	1	0.45	4.02	ppb	2.5	
Cu	63	72	2	0.55	6.10	ppb	2.5	
Cu	65	72	1	0.42	1.62	ppb	2.5	
Zn	66	72	1	0.92	0.28	ppb	2.5	
Zn	66	72	2	-0.05	-100.12	ppb	2.5	
Zn	68	72	1	0.20	23.56	ppb	2.5	
As	75	72	1	-23.67	-0.48	ppb	2.5	
As	75	72	2	0.00	-23627.00	ppb	2.5	
Se	78	72	1	0.92	55.22	ppb	2.5	
Se	78	72	2	0.01	1464.41	ppb	2.5	
Se	82	72	1	-0.42	-31.07	ppb	2.5	
Sr	88	72	1	0.10	19.07	ppb	2.5	
Mo	95	72	1	0.15	9.89	ppb	2.5	
Mo	97	72	1	0.14	9.06	ppb	2.5	
Ag	107	72	1	0.07	14.30	ppb	2.5	
Ag	109	72	1	0.07	11.11	ppb	2.5	
Cd	111	115	1	0.06	14.74	ppb	2.5	
Cd	114	115	1	0.06	29.11	ppb	2.5	
Sn	118	72	1	0.12	16.38	ppb	2.5	
Sn	119	72	1	0.09	16.00	ppb	2.5	
Sb	121	72	1	0.59	4.97	ppb	2.5	
Sb	121	72	2	0.51	2.59	ppb	2.5	
Sb	123	72	1	0.57	5.78	ppb	2.5	
Ba	135	115	1	0.15	13.64	ppb	2.5	
Ba	137	115	1	0.14	8.93	ppb	2.5	
Tl	203	209	1	0.89	12.30	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.86	11.51	ppb	2.5	
Pb	206	209	1	14.66	6.18	ppb	2.5	>2.2*DL
Pb	207	209	1	13.78	5.26	ppb	2.5	>2.2*DL
Pb	208	209	1	14.12	5.58	ppb	2.5	>2.2*DL
U	238	209	1	0.05	11.36	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	626958	1.76	651501	96.2	70	125	
Ge	72	1	3267861	1.59	3129453	104.4	70	125	
Ge	72	2	424223	0.23	416984	101.7	70	125	
In	115	1	3277118	1.59	3134428	104.6	70	125	
Bi	209	1	3135068	2.09	2939886	106.6	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	061SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 16:56
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	106.791	106.791	3.57
Be	9	6	1	ppb	102.380	102.380	2.85
B	11	6	1	ppb	543.911	543.911	4.20
Na	23	72	1	ppb	8489.506	8489.506	1.66
Na	23	72	2	ppb	9364.640	9364.640	0.79
Mg	24	72	1	ppb	8572.249	8572.249	1.71
Al	27	72	1	ppb	93.235	93.235	1.58
P	31	72	1	ppb	409.408	409.408	0.73
K	39	72	1	ppb	8636.318	8636.318	1.44
Ca	44	72	1	ppb	8672.202	8672.202	1.86
Ca	44	72	2	ppb	9247.749	9247.749	0.75
Ti	47	72	1	ppb	85.717	85.717	1.59
Ti	47	72	2	ppb	92.964	92.964	0.92
V	51	72	1	ppb	16.796	16.796	5.96
V	51	72	2	ppb	95.581	95.581	0.99
Cr	52	72	1	ppb	85.347	85.347	1.31
Cr	52	72	2	ppb	95.936	95.936	1.16
Mn	55	72	1	ppb	89.741	89.741	1.45
Mn	55	72	2	ppb	95.091	95.091	1.18
Fe	56	72	1	ppb	8926.170	8926.170	1.73
Fe	56	72	2	ppb	9602.696	9602.696	1.31
Co	59	72	1	ppb	88.883	88.883	1.69
Co	59	72	2	ppb	98.524	98.524	0.92
Ni	60	72	1	ppb	87.001	87.001	0.85
Ni	60	72	2	ppb	98.738	98.738	0.87
Cu	63	72	1	ppb	87.143	87.143	1.27
Cu	63	72	2	ppb	98.962	98.962	0.25
Cu	65	72	1	ppb	88.500	88.500	1.49
Zn	66	72	1	ppb	89.884	89.884	1.80
Zn	66	72	2	ppb	97.441	97.441	0.87
Zn	68	72	1	ppb	89.507	89.507	1.16
As	75	72	1	ppb	71.012	71.012	0.53
As	75	72	2	ppb	97.057	97.057	1.33
Se	78	72	1	ppb	93.373	93.373	2.75
Se	78	72	2	ppb	93.928	93.928	2.72
Se	82	72	1	ppb	90.576	90.576	3.22
Sr	88	72	1	ppb	92.094	92.094	2.41
Mo	95	72	1	ppb	89.408	89.408	2.17
Mo	97	72	1	ppb	89.553	89.553	2.32
Rh	103	115	1	ppb	15.998	15.998	130.96
Pd	105	115	1	ppb	149.846	149.846	8.45
Ag	107	72	1	ppb	97.776	97.776	2.83
Ag	109	72	1	ppb	96.128	96.128	2.88
Cd	111	115	1	ppb	91.178	91.178	1.52

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	92.459	92.459	1.22
Sn	118	72	1	ppb	92.014	92.014	1.90
Sn	119	72	1	ppb	91.626	91.626	2.25
Sb	121	72	1	ppb	108.176	108.176	3.50
Sb	121	72	2	ppb	101.822	101.822	1.21
Sb	123	72	1	ppb	108.170	108.170	3.07
Ba	135	115	1	ppb	93.540	93.540	1.34
Ba	137	115	1	ppb	93.604	93.604	1.58
W	182	209	1	ppb	41.497	41.497	85.86
Pt	195	209	1	ppb	-1433.362	-1433.362	-30.46
Au	197	209	1	ppb	-1207.716	-1207.716	-34.09
Tl	203	209	1	ppb	93.546	93.546	2.43
Tl	205	209	1	ppb	94.832	94.832	2.64
Pb	206	209	1	ppb	100.904	100.904	1.46
Pb	207	209	1	ppb	100.074	100.074	1.49
Pb	208	209	1	ppb	102.518	102.518	1.62
U	238	209	1	ppb	98.482	98.482	1.35

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	539,676	2.86	651501	82.8	70	125	
1	Ge	72	3,193,626	1.93	3129453	102.1	70	125	
2	Ge	72	411,776	0.86	416984	98.8	70	125	
1	In	115	3,153,182	1.47	3134428	100.6	70	125	
1	Bi	209	3,042,186	1.78	2939886	103.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**062CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 17:00**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	(b) (6) **ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.58	22.08	ppb	2.5	
Be	9	6	1	0.11	6.65	ppb	1	
B	11	6	1	10.21	19.60	ppb	5	>2.2*DL
Na	23	72	1	4.01	59.73	ppb	250	
Na	23	72	2	0.46	42.88	ppb	250	
Mg	24	72	1	20.30	11.45	ppb	250	
Al	27	72	1	4.24	41.09	ppb	5	
P	31	72	1	-1.23	-206.55	ppb	5	
K	39	72	1	-0.73	-3050.47	ppb	250	
Ca	44	72	1	-146.79	-14.06	ppb	250	
Ca	44	72	2	34.62	29.15	ppb	250	
Ti	47	72	1	0.16	28.56	ppb	2.5	
Ti	47	72	2	0.06	35.50	ppb	2.5	
V	51	72	1	-87.19	-1.88	ppb	2.5	
V	51	72	2	-1.46	-2.67	ppb	2.5	
Cr	52	72	1	-1.25	-7.55	ppb	2.5	
Cr	52	72	2	0.02	61.42	ppb	2.5	
Mn	55	72	1	0.05	304.76	ppb	2.5	
Mn	55	72	2	0.28	21.68	ppb	2.5	
Fe	56	72	1	7.40	111.33	ppb	100	
Fe	56	72	2	15.23	2.84	ppb	100	
Co	59	72	1	0.08	9.08	ppb	2.5	
Co	59	72	2	0.10	2.90	ppb	2.5	
Ni	60	72	1	0.07	12.28	ppb	2.5	
Ni	60	72	2	0.08	5.09	ppb	2.5	
Cu	63	72	1	0.28	10.80	ppb	2.5	
Cu	63	72	2	0.30	3.35	ppb	2.5	
Cu	65	72	1	0.26	13.42	ppb	2.5	
Zn	66	72	1	0.92	8.43	ppb	2.5	
Zn	66	72	2	-0.15	-47.65	ppb	2.5	
Zn	68	72	1	0.19	22.22	ppb	2.5	
As	75	72	1	-18.94	-9.65	ppb	2.5	
As	75	72	2	0.03	82.90	ppb	2.5	
Se	78	72	1	5.09	39.36	ppb	2.5	>2.2*DL
Se	78	72	2	-0.05	-157.69	ppb	2.5	
Se	82	72	1	-0.15	-267.48	ppb	2.5	
Sr	88	72	1	0.14	23.27	ppb	2.5	
Mo	95	72	1	0.17	15.83	ppb	2.5	
Mo	97	72	1	0.16	19.75	ppb	2.5	
Ag	107	72	1	0.08	13.29	ppb	2.5	
Ag	109	72	1	0.07	5.73	ppb	2.5	
Cd	111	115	1	0.08	15.18	ppb	2.5	
Cd	114	115	1	0.07	13.41	ppb	2.5	
Sn	118	72	1	0.13	21.71	ppb	2.5	
Sn	119	72	1	0.14	31.47	ppb	2.5	
Sb	121	72	1	0.57	14.31	ppb	2.5	
Sb	121	72	2	0.44	8.95	ppb	2.5	
Sb	123	72	1	0.56	21.27	ppb	2.5	
Ba	135	115	1	0.15	15.46	ppb	2.5	
Ba	137	115	1	0.15	10.69	ppb	2.5	
Tl	203	209	1	0.83	7.75	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.81	6.77	ppb	2.5	
Pb	206	209	1	4.67	14.72	ppb	2.5	>2.2*DL
Pb	207	209	1	4.39	14.54	ppb	2.5	>2.2*DL
Pb	208	209	1	4.51	14.76	ppb	2.5	>2.2*DL
U	238	209	1	0.07	11.16	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	585909	6.38	651501	89.9	70	125	
Ge	72	1	3133684	6.65	3129453	100.1	70	125	
Ge	72	2	430370	0.57	416984	103.2	70	125	
In	115	1	3133885	7.37	3134428	100.0	70	125	
Bi	209	1	2923677	6.45	2939886	99.4	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Blank Report

Sample Name	CAL BLK
Data File Name	070CALB.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 17:42:00
Type	CalBlk
VialNumber	1101
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
Current Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	52922	5.86
Be	9	6	1	139	1.39
B	11	6	1	25643	2.12
Na	23	72	1	222829	7.38
Na	23	72	2	7774	0.84
Mg	24	72	1	116080	13.81
Al	27	72	1	67038	56.15
P	31	72	1	37231	5.44
K	39	72	1	5389684	0.69
Ca	44	72	1	49946	11.93
Ca	44	72	2	376	9.57
Ti	47	72	1	222	9.99
Ti	47	72	2	10	57.72
V	51	72	1	558827	2.63
V	51	72	2	950	11.83
Cr	52	72	1	26522	1.98
Cr	52	72	2	767	8.26
Mn	55	72	1	22780	9.69
Mn	55	72	2	296	18.34
Fe	56	72	1	2824577	2.39
Fe	56	72	2	10569	2.14
Co	59	72	1	452	11.52
Co	59	72	2	72	18.66
Ni	60	72	1	148	18.23
Ni	60	72	2	80	41.03
Cu	63	72	1	1804	11.11
Cu	63	72	2	549	5.51
Cu	65	72	1	878	7.35
Zn	66	72	1	1728	5.49
Zn	68	72	1	1338	5.75
As	75	72	1	98502	3.43
As	75	72	2	60	17.67
Se	78	72	1	20277	2.06
Se	78	72	2	22	54.38
Se	82	72	1	646	4.59
Sr	88	72	1	2047	47.45
Mo	95	72	1	242	37.37
Mo	97	72	1	182	29.18
Ag	107	72	1	144	4.81
Ag	109	72	1	120	12.73
Cd	111	115	1	17	59.99
Cd	114	115	1	67	40.93
Sn	118	72	1	788	8.13
Sn	119	72	1	339	14.76
Sb	121	72	1	2360	15.03
Sb	121	72	2	500	5.97

Calibration Blank Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	123	72	1	1706	14.44
Ba	135	115	1	129	32.13
Ba	137	115	1	256	41.25
Tl	203	209	1	2737	6.02
Tl	205	209	1	6471	3.83
Pb	206	209	1	16068	7.15
Pb	207	209	1	13676	8.00
Pb	208	209	1	62512	7.53

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Li	6	1	580973	5.25
Ge	72	1	3057757	5.35
Ge	72	2	407880	0.64
In	115	1	3088743	5.12
Bi	209	1	2922576	6.06

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	2/10/200
Data File Name	071CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 17:46
Type	CalStd
VialNumber	1102
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	070CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	74050	1.13
Be	9	6	1	8714	2.99
B	11	6	1	49326	2.96
Na	23	72	1	3634548	1.28
Na	23	72	2	93094	0.61
Mg	24	72	1	2628505	0.88
Al	27	72	1	122419	18.92
P	31	72	1	49724	0.57
K	39	72	1	8599142	0.39
Ca	44	72	1	149006	3.93
Ca	44	72	2	2661	3.95
Ti	47	72	1	3266	3.81
Ti	47	72	2	194	30.87
V	51	72	1	600065	1.20
V	51	72	2	7048	4.34
Cr	52	72	1	66160	1.82
Cr	52	72	2	8368	1.72
Mn	55	72	1	72341	3.79
Mn	55	72	2	3952	4.53
Fe	56	72	1	7147161	0.77
Fe	56	72	2	615070	1.05
Co	59	72	1	43694	1.82
Co	59	72	2	11292	4.45
Ni	60	72	1	9961	0.87
Ni	60	72	2	3056	6.19
Cu	63	72	1	25872	1.83
Cu	63	72	2	8486	1.94
Cu	65	72	1	12331	0.82
Zn	66	72	1	9402	1.84
Zn	68	72	1	6831	1.59
As	75	72	1	107170	1.81
As	75	72	2	1407	5.61
Se	78	72	1	21472	0.49
Se	78	72	2	91	4.95
Se	82	72	1	1098	6.95
Sr	88	72	1	61538	1.74
Mo	95	72	1	11361	0.31
Mo	97	72	1	7090	1.62
Ag	107	72	1	29389	1.66
Ag	109	72	1	28528	0.26
Cd	111	115	1	6265	1.33
Cd	114	115	1	15460	1.90
Sn	118	72	1	17905	1.58
Sn	119	72	1	6946	0.86

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	29858	0.13
Sb	121	72	2	7164	1.15
Sb	123	72	1	22817	1.06
Ba	135	115	1	5572	4.43
Ba	137	115	1	9863	2.36
Tl	203	209	1	22881	2.30
Tl	205	209	1	53637	2.83
Pb	206	209	1	35199	2.99
Pb	207	209	1	30302	1.62
Pb	208	209	1	138299	2.35

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	599265	1.61	580973	103.1	70	125	
Ge	72	1	3185858	1.48	3057757	104.2	70	125	
Ge	72	2	412940	0.21	407880	101.2	70	125	
In	115	1	3199943	1.39	3088743	103.6	70	125	
Bi	209	1	3035571	1.11	2922576	103.9	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	5/25/500
Data File Name	072CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 17:51
Type	CalStd
VialNumber	1103
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	070CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	104944	0.73
Be	9	6	1	21662	2.61
B	11	6	1	90968	1.27
Na	23	72	1	8770298	1.29
Na	23	72	2	221245	0.66
Mg	24	72	1	6352081	0.78
Al	27	72	1	149495	14.79
P	31	72	1	70904	0.41
K	39	72	1	13496917	0.36
Ca	44	72	1	295512	1.93
Ca	44	72	2	5593	1.82
Ti	47	72	1	7910	1.39
Ti	47	72	2	460	15.69
V	51	72	1	698573	0.74
V	51	72	2	15581	0.52
Cr	52	72	1	124826	0.13
Cr	52	72	2	19801	1.72
Mn	55	72	1	146906	0.49
Mn	55	72	2	9491	3.64
Fe	56	72	1	13582671	0.93
Fe	56	72	2	1565948	0.50
Co	59	72	1	108354	0.73
Co	59	72	2	28035	0.93
Ni	60	72	1	24870	0.92
Ni	60	72	2	7661	2.39
Cu	63	72	1	61902	0.86
Cu	63	72	2	20867	1.47
Cu	65	72	1	29923	1.84
Zn	66	72	1	20811	2.93
Zn	68	72	1	14907	1.09
As	75	72	1	127638	1.32
As	75	72	2	3703	2.48
Se	78	72	1	23097	0.48
Se	78	72	2	208	9.19
Se	82	72	1	1806	2.17
Sr	88	72	1	149327	0.98
Mo	95	72	1	28347	1.76
Mo	97	72	1	17432	1.37
Ag	107	72	1	74177	1.45
Ag	109	72	1	71299	1.08
Cd	111	115	1	16206	2.40
Cd	114	115	1	38079	0.54
Sn	118	72	1	43701	0.43
Sn	119	72	1	17250	1.02

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	72433	0.83
Sb	121	72	2	17326	2.03
Sb	123	72	1	55122	1.57
Ba	135	115	1	14495	1.50
Ba	137	115	1	24196	1.64
Tl	203	209	1	54032	2.15
Tl	205	209	1	127955	2.07
Pb	206	209	1	63816	1.32
Pb	207	209	1	56274	0.98
Pb	208	209	1	254352	1.45

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	599054	1.40	580973	103.1	70	125	
Ge	72	1	3199376	0.90	3057757	104.6	70	125	
Ge	72	2	416317	0.45	407880	102.1	70	125	
In	115	1	3218643	1.79	3088743	104.2	70	125	
Bi	209	1	3058583	2.02	2922576	104.7	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	10/50/1000
Data File Name	073CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 17:56
Type	CalStd
VialNumber	1104
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	070CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	154826	0.93
Be	9	6	1	44204	0.45
B	11	6	1	155966	1.01
Na	23	72	1	17305695	1.35
Na	23	72	2	434576	0.30
Mg	24	72	1	12558409	0.60
Al	27	72	1	230598	9.94
P	31	72	1	103338	0.63
K	39	72	1	21418317	0.41
Ca	44	72	1	535278	1.28
Ca	44	72	2	10856	1.53
Ti	47	72	1	15601	1.81
Ti	47	72	2	818	3.65
V	51	72	1	841382	0.81
V	51	72	2	30008	1.09
Cr	52	72	1	225146	0.90
Cr	52	72	2	38539	1.15
Mn	55	72	1	271584	0.86
Mn	55	72	2	19433	1.68
Fe	56	72	1	24369384	1.00
Fe	56	72	2	3101867	0.43
Co	59	72	1	217311	1.08
Co	59	72	2	57551	1.59
Ni	60	72	1	50428	1.12
Ni	60	72	2	15063	1.84
Cu	63	72	1	122949	0.51
Cu	63	72	2	41969	0.73
Cu	65	72	1	58429	1.26
Zn	66	72	1	39880	0.83
Zn	68	72	1	28397	2.28
As	75	72	1	156224	0.99
As	75	72	2	7223	0.39
Se	78	72	1	25805	0.68
Se	78	72	2	439	5.84
Se	82	72	1	2967	1.46
Sr	88	72	1	299215	0.07
Mo	95	72	1	56831	0.42
Mo	97	72	1	35067	0.64
Ag	107	72	1	150330	0.84
Ag	109	72	1	143715	0.30
Cd	111	115	1	32487	1.68
Cd	114	115	1	78582	0.41
Sn	118	72	1	88051	0.22
Sn	119	72	1	33800	1.61

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	144326	0.64
Sb	121	72	2	33957	0.45
Sb	123	72	1	109882	0.85
Ba	135	115	1	28693	1.25
Ba	137	115	1	49410	1.63
Tl	203	209	1	110095	2.14
Tl	205	209	1	261364	2.91
Pb	206	209	1	112125	1.24
Pb	207	209	1	100708	1.40
Pb	208	209	1	454947	1.37

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	596368	1.72	580973	102.6	70	125	
Ge	72	1	3199073	1.45	3057757	104.6	70	125	
Ge	72	2	417506	0.20	407880	102.4	70	125	
In	115	1	3182974	1.33	3088743	103.1	70	125	
Bi	209	1	3055819	0.82	2922576	104.6	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	100/500/10K
Data File Name	074CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 18:00
Type	CalStd
VialNumber	1105
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	070CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	1017778	1.53
Be	9	6	1	409809	0.83
B	11	6	1	1213880	2.43
Na	23	72	1	156940363	0.97
Na	23	72	2	3923294	0.15
Mg	24	72	1	114206806	0.72
Al	27	72	1	1621666	1.34
P	31	72	1	596777	0.98
K	39	72	1	150726871	0.62
Ca	44	72	1	4447030	1.18
Ca	44	72	2	94131	0.72
Ti	47	72	1	141742	0.29
Ti	47	72	2	7759	2.62
V	51	72	1	2642261	1.14
V	51	72	2	268848	0.68
Cr	52	72	1	1835965	0.60
Cr	52	72	2	343587	0.47
Mn	55	72	1	2357657	0.88
Mn	55	72	2	172317	0.55
Fe	56	72	1	199461253	0.63
Fe	56	72	2	27945945	0.72
Co	59	72	1	2015063	0.97
Co	59	72	2	511243	0.64
Ni	60	72	1	447689	0.33
Ni	60	72	2	138671	0.87
Cu	63	72	1	1091017	0.19
Cu	63	72	2	372110	0.37
Cu	65	72	1	522857	0.69
Zn	66	72	1	353139	0.66
Zn	68	72	1	250852	0.81
As	75	72	1	537069	0.51
As	75	72	2	65489	0.24
Se	78	72	1	73155	1.06
Se	78	72	2	3469	1.62
Se	82	72	1	22043	0.50
Sr	88	72	1	2771892	0.35
Mo	95	72	1	521695	0.61
Mo	97	72	1	323982	0.72
Ag	107	72	1	1393782	2.67
Ag	109	72	1	1331427	0.38
Cd	111	115	1	301613	0.68
Cd	114	115	1	729525	0.56
Sn	118	72	1	816830	0.59
Sn	119	72	1	315388	0.78

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	1238255	1.28
Sb	121	72	2	299698	0.23
Sb	123	72	1	940538	1.39
Ba	135	115	1	265413	0.46
Ba	137	115	1	458762	0.28
Tl	203	209	1	1069822	1.42
Tl	205	209	1	2638013	1.55
Pb	206	209	1	922822	0.45
Pb	207	209	1	835074	0.96
Pb	208	209	1	3830537	0.93

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	530164	2.22	580973	91.3	70	125	
Ge	72	1	3078075	1.82	3057757	100.7	70	125	
Ge	72	2	393289	0.45	407880	96.4	70	125	
In	115	1	3060463	0.79	3088743	99.1	70	125	
Bi	209	1	2967668	0.96	2922576	101.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	200/1000/20K
Data File Name	075CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 18:05
Type	CalStd
VialNumber	1106
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	070CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	1906221	0.86
Be	9	6	1	799180	0.65
B	11	6	1	2324259	1.05
Na	23	72	1	302928811	0.31
Na	23	72	2	7607957	0.42
Mg	24	72	1	219869737	0.39
Al	27	72	1	3021042	0.09
P	31	72	1	1161148	0.66
K	39	72	1	290523302	0.20
Ca	44	72	1	8637703	0.70
Ca	44	72	2	185359	0.78
Ti	47	72	1	277045	0.92
Ti	47	72	2	15330	2.57
V	51	72	1	4519919	0.63
V	51	72	2	527068	0.59
Cr	52	72	1	3514538	0.21
Cr	52	72	2	672468	0.56
Mn	55	72	1	4452501	0.76
Mn	55	72	2	335462	0.40
Fe	56	72	1	382786368	0.11
Fe	56	72	2	54269088	0.47
Co	59	72	1	3849795	0.69
Co	59	72	2	998198	0.64
Ni	60	72	1	855907	0.20
Ni	60	72	2	268272	1.56
Cu	63	72	1	2147484	0.24
Cu	63	72	2	721598	0.84
Cu	65	72	1	996301	1.03
Zn	66	72	1	679537	0.96
Zn	68	72	1	484303	0.69
As	75	72	1	941852	0.59
As	75	72	2	128898	0.79
Se	78	72	1	124671	1.35
Se	78	72	2	6716	1.08
Se	82	72	1	42751	1.01
Sr	88	72	1	5354200	0.90
Mo	95	72	1	1033692	0.87
Mo	97	72	1	637489	1.01
Ag	107	72	1	2723912	0.62
Ag	109	72	1	2638034	0.08
Cd	111	115	1	584742	0.44
Cd	114	115	1	1419134	1.92
Sn	118	72	1	1632475	0.12
Sn	119	72	1	611307	1.13

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	2571230	2.69
Sb	121	72	2	600712	0.59
Sb	123	72	1	1953521	1.77
Ba	135	115	1	518404	1.15
Ba	137	115	1	899100	1.26
Tl	203	209	1	2174438	1.63
Tl	205	209	1	5110753	1.29
Pb	206	209	1	1845776	1.15
Pb	207	209	1	1668057	1.34
Pb	208	209	1	7483551	0.88

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	481201	1.93	580973	82.8	70	125	
Ge	72	1	3000693	1.21	3057757	98.1	70	125	
Ge	72	2	387084	0.74	407880	94.9	70	125	
In	115	1	2963163	1.88	3088743	95.9	70	125	
Bi	209	1	2903859	0.89	2922576	99.4	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	076SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 18:09
Sample Name	ICCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	94.527	94.527	2.88
Be	9	6	1	ppb	105.905	105.905	2.95
B	11	6	1	ppb	479.447	479.447	2.94
Na	23	72	1	ppb	9942.723	9942.723	3.30
Na	23	72	2	ppb	10053.724	10053.724	0.45
Mg	24	72	1	ppb	9877.882	9877.882	3.39
Al	27	72	1	ppb	103.788	103.788	2.06
P	31	72	1	ppb	504.546	504.546	3.36
K	39	72	1	ppb	9870.278	9870.278	3.33
Ca	44	72	1	ppb	9763.392	9763.392	3.08
Ca	44	72	2	ppb	9956.840	9956.840	0.47
Ti	47	72	1	ppb	100.126	100.126	2.79
Ti	47	72	2	ppb	96.406	96.406	4.02
V	51	72	1	ppb	93.119	93.119	2.92
V	51	72	2	ppb	102.293	102.293	0.94
Cr	52	72	1	ppb	102.548	102.548	2.97
Cr	52	72	2	ppb	102.586	102.586	0.32
Mn	55	72	1	ppb	103.108	103.108	2.60
Mn	55	72	2	ppb	103.427	103.427	0.52
Fe	56	72	1	ppb	9900.841	9900.841	3.01
Fe	56	72	2	ppb	9868.108	9868.108	0.33
Co	59	72	1	ppb	104.040	104.040	3.95
Co	59	72	2	ppb	103.394	103.394	0.65
Ni	60	72	1	ppb	104.199	104.199	3.21
Ni	60	72	2	ppb	104.212	104.212	0.75
Cu	63	72	1	ppb	101.382	101.382	3.50
Cu	63	72	2	ppb	101.871	101.871	0.55
Cu	65	72	1	ppb	103.439	103.439	3.41
Zn	66	72	1	ppb	102.892	102.892	3.69
Zn	66	72	2	ppb	103.553	103.553	0.50
Zn	68	72	1	ppb	102.662	102.662	3.77
As	75	72	1	ppb	97.207	97.207	2.65
As	75	72	2	ppb	102.989	102.989	0.33
Se	78	72	1	ppb	101.217	101.217	5.11
Se	78	72	2	ppb	106.184	106.184	1.69
Se	82	72	1	ppb	102.065	102.065	2.77
Sr	88	72	1	ppb	99.724	99.724	2.92
Mo	95	72	1	ppb	99.344	99.344	3.55
Mo	97	72	1	ppb	99.494	99.494	3.72
Rh	103	115	1	ppb	94.185	94.185	6.00
Pd	105	115	1	ppb	53.042	53.042	55.85
Ag	107	72	1	ppb	103.289	103.289	4.11
Ag	109	72	1	ppb	101.946	101.946	5.06
Cd	111	115	1	ppb	99.982	99.982	2.78

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	98.975	98.975	2.58
Sn	118	72	1	ppb	96.358	96.358	3.72
Sn	119	72	1	ppb	98.757	98.757	3.80
Sb	121	72	1	ppb	109.567	109.567	3.79
Sb	121	72	2	ppb	108.273	108.273	0.24
Sb	123	72	1	ppb	110.048	110.048	3.42
Ba	135	115	1	ppb	100.117	100.117	2.24
Ba	137	115	1	ppb	99.870	99.870	2.49
W	182	209	1	ppb	78.905	78.905	59.37
Pt	195	209	1	ppb	-428.644	-428.644	-136.39
Au	197	209	1	ppb	124.526	124.526	73.66
Tl	203	209	1	ppb	106.748	106.748	2.36
Tl	205	209	1	ppb	107.251	107.251	2.74
Pb	206	209	1	ppb	103.110	103.110	1.78
Pb	207	209	1	ppb	94.533	94.533	1.93
Pb	208	209	1	ppb	100.899	100.899	1.88
U	238	209	1	ppb	97.963	97.963	2.00

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	527,651	2.45	580973	90.8	70	125	
1	Ge	72	3,176,519	3.08	3057757	103.9	70	125	
2	Ge	72	403,877	0.39	407880	99.0	70	125	
1	In	115	3,181,711	1.68	3088743	103.0	70	125	
1	Bi	209	3,018,330	1.63	2922576	103.3	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	077SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 18:13
Sample Name	LLCCV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	4.788	4.788	0.77
Be	9	6	1	ppb	4.832	4.832	3.45
B	11	6	1	ppb	25.442	25.442	2.24
Na	23	72	1	ppb	536.859	536.859	1.42
Na	23	72	2	ppb	529.212	529.212	1.22
Mg	24	72	1	ppb	537.758	537.758	1.18
Al	27	72	1	ppb	5.208	5.208	28.50
P	31	72	1	ppb	26.377	26.377	0.65
K	39	72	1	ppb	511.273	511.273	1.70
Ca	44	72	1	ppb	541.449	541.449	1.02
Ca	44	72	2	ppb	537.686	537.686	2.79
Ti	47	72	1	ppb	5.202	5.202	2.95
Ti	47	72	2	ppb	5.178	5.178	11.83
V	51	72	1	ppb	-7.722	-7.722	-8.74
V	51	72	2	ppb	4.966	4.966	1.78
Cr	52	72	1	ppb	4.845	4.845	2.12
Cr	52	72	2	ppb	5.181	5.181	2.06
Mn	55	72	1	ppb	5.246	5.246	0.75
Mn	55	72	2	ppb	5.446	5.446	1.26
Fe	56	72	1	ppb	497.757	497.757	1.56
Fe	56	72	2	ppb	544.100	544.100	0.49
Co	59	72	1	ppb	5.300	5.300	0.82
Co	59	72	2	ppb	5.364	5.364	1.20
Ni	60	72	1	ppb	5.559	5.559	1.66
Ni	60	72	2	ppb	5.279	5.279	4.47
Cu	63	72	1	ppb	5.379	5.379	0.47
Cu	63	72	2	ppb	5.387	5.387	1.80
Cu	65	72	1	ppb	5.535	5.535	1.09
Zn	66	72	1	ppb	5.145	5.145	2.37
Zn	66	72	2	ppb	5.012	5.012	1.40
Zn	68	72	1	ppb	5.276	5.276	2.03
As	75	72	1	ppb	-0.751	-0.751	-21.87
As	75	72	2	ppb	5.297	5.297	1.31
Se	78	72	1	ppb	4.391	4.391	13.97
Se	78	72	2	ppb	4.932	4.932	11.46
Se	82	72	1	ppb	5.272	5.272	2.70
Sr	88	72	1	ppb	5.193	5.193	1.04
Mo	95	72	1	ppb	5.282	5.282	1.31
Mo	97	72	1	ppb	5.324	5.324	3.98
Rh	103	115	1	ppb	4.267	4.267	223.87
Pd	105	115	1	ppb	-0.788	-0.788	-4776.32
Ag	107	72	1	ppb	5.188	5.188	1.80
Ag	109	72	1	ppb	5.224	5.224	0.38
Cd	111	115	1	ppb	5.183	5.183	0.97

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	5.133	5.133	1.86
Sn	118	72	1	ppb	5.176	5.176	2.70
Sn	119	72	1	ppb	5.297	5.297	1.64
Sb	121	72	1	ppb	5.759	5.759	1.85
Sb	121	72	2	ppb	5.762	5.762	0.61
Sb	123	72	1	ppb	5.740	5.740	1.30
Ba	135	115	1	ppb	5.072	5.072	0.82
Ba	137	115	1	ppb	5.045	5.045	1.17
W	182	209	1	ppb	0.357	0.357	9082.06
Pt	195	209	1	ppb	143.114	143.114	65.08
Au	197	209	1	ppb	174.754	174.754	175.63
Tl	203	209	1	ppb	6.218	6.218	4.87
Tl	205	209	1	ppb	5.958	5.958	4.37
Pb	206	209	1	ppb	4.779	4.779	1.82
Pb	207	209	1	ppb	4.851	4.851	0.26
Pb	208	209	1	ppb	4.819	4.819	0.58
U	238	209	1	ppb	4.309	4.309	1.98

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	593,676	1.06	580973	102.2	70	125	
1	Ge	72	3,176,683	0.94	3057757	103.9	70	125	
2	Ge	72	412,432	0.58	407880	101.1	70	125	
1	In	115	3,203,245	0.72	3088743	103.7	70	125	
1	Bi	209	3,071,352	1.27	2922576	105.1	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	078SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 18:18
Sample Name	LLCCV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	2.044	2.044	9.62
Be	9	6	1	ppb	2.019	2.019	7.41
B	11	6	1	ppb	11.846	11.846	7.30
Na	23	72	1	ppb	222.404	222.404	5.78
Na	23	72	2	ppb	211.706	211.706	0.87
Mg	24	72	1	ppb	223.098	223.098	6.13
Al	27	72	1	ppb	2.806	2.806	65.00
P	31	72	1	ppb	14.904	14.904	18.96
K	39	72	1	ppb	220.573	220.573	13.75
Ca	44	72	1	ppb	238.360	238.360	12.74
Ca	44	72	2	ppb	229.900	229.900	0.45
Ti	47	72	1	ppb	2.233	2.233	5.78
Ti	47	72	2	ppb	1.936	1.936	11.21
V	51	72	1	ppb	-4.980	-4.980	-30.11
V	51	72	2	ppb	1.898	1.898	2.22
Cr	52	72	1	ppb	1.981	1.981	12.29
Cr	52	72	2	ppb	2.104	2.104	4.75
Mn	55	72	1	ppb	2.236	2.236	11.63
Mn	55	72	2	ppb	2.156	2.156	2.71
Fe	56	72	1	ppb	202.200	202.200	9.33
Fe	56	72	2	ppb	210.560	210.560	0.54
Co	59	72	1	ppb	2.202	2.202	5.00
Co	59	72	2	ppb	2.186	2.186	2.88
Ni	60	72	1	ppb	2.306	2.306	5.84
Ni	60	72	2	ppb	2.133	2.133	1.24
Cu	63	72	1	ppb	2.312	2.312	5.92
Cu	63	72	2	ppb	2.134	2.134	1.59
Cu	65	72	1	ppb	2.322	2.322	5.60
Zn	66	72	1	ppb	1.996	1.996	11.30
Zn	66	72	2	ppb	1.791	1.791	6.39
Zn	68	72	1	ppb	2.278	2.278	11.52
As	75	72	1	ppb	-0.396	-0.396	-404.58
As	75	72	2	ppb	2.095	2.095	2.88
Se	78	72	1	ppb	2.099	2.099	95.49
Se	78	72	2	ppb	2.403	2.403	14.37
Se	82	72	1	ppb	2.099	2.099	12.58
Sr	88	72	1	ppb	2.203	2.203	6.88
Mo	95	72	1	ppb	2.183	2.183	6.29
Mo	97	72	1	ppb	2.165	2.165	2.29
Rh	103	115	1	ppb	16.989	16.989	56.46
Pd	105	115	1	ppb	38.083	38.083	122.72
Ag	107	72	1	ppb	2.142	2.142	4.67
Ag	109	72	1	ppb	2.164	2.164	3.88
Cd	111	115	1	ppb	2.106	2.106	8.33

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	2.120	2.120	7.82
Sn	118	72	1	ppb	2.660	2.660	26.71
Sn	119	72	1	ppb	2.191	2.191	7.03
Sb	121	72	1	ppb	2.411	2.411	4.89
Sb	121	72	2	ppb	2.312	2.312	1.78
Sb	123	72	1	ppb	2.441	2.441	4.44
Ba	135	115	1	ppb	2.080	2.080	9.93
Ba	137	115	1	ppb	2.128	2.128	7.33
W	182	209	1	ppb	4.061	4.061	482.88
Pt	195	209	1	ppb	30.019	30.019	434.01
Au	197	209	1	ppb	129.232	129.232	425.89
Tl	203	209	1	ppb	2.686	2.686	2.30
Tl	205	209	1	ppb	2.549	2.549	2.61
Pb	206	209	1	ppb	1.923	1.923	20.51
Pb	207	209	1	ppb	1.944	1.944	21.16
Pb	208	209	1	ppb	1.922	1.922	20.38
U	238	209	1	ppb	1.785	1.785	7.53

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	595,391	5.53	580973	102.5	70	125	
1	Ge	72	3,150,309	4.98	3057757	103.0	70	125	
2	Ge	72	422,832	0.62	407880	103.7	70	125	
1	In	115	3,168,902	5.91	3088743	102.6	70	125	
1	Bi	209	2,975,040	7.38	2922576	101.8	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	079SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 18:22
Sample Name	ICCB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.122	0.122	27.23
Be	9	6	1	ppb	0.030	0.030	10.40
B	11	6	1	ppb	4.473	4.473	21.74
Na	23	72	1	ppb	1.397	1.397	60.95
Na	23	72	2	ppb	1.689	1.689	46.26
Mg	24	72	1	ppb	-1.788	-1.788	-54.30
Al	27	72	1	ppb	-0.839	-0.839	-157.73
P	31	72	1	ppb	2.618	2.618	36.54
K	39	72	1	ppb	-15.591	-15.591	-30.41
Ca	44	72	1	ppb	-0.274	-0.274	-4318.50
Ca	44	72	2	ppb	3.633	3.633	39.15
Ti	47	72	1	ppb	0.005	0.005	582.33
Ti	47	72	2	ppb	0.007	0.007	1131.00
V	51	72	1	ppb	-6.797	-6.797	-4.51
V	51	72	2	ppb	-0.215	-0.215	-12.82
Cr	52	72	1	ppb	-0.202	-0.202	-5.25
Cr	52	72	2	ppb	-0.006	-0.006	-190.02
Mn	55	72	1	ppb	-0.039	-0.039	-180.88
Mn	55	72	2	ppb	0.005	0.005	304.54
Fe	56	72	1	ppb	-17.648	-17.648	-4.40
Fe	56	72	2	ppb	0.471	0.471	22.00
Co	59	72	1	ppb	0.003	0.003	69.02
Co	59	72	2	ppb	0.006	0.006	122.44
Ni	60	72	1	ppb	0.016	0.016	34.03
Ni	60	72	2	ppb	-0.001	-0.001	-1182.15
Cu	63	72	1	ppb	0.110	0.110	23.74
Cu	63	72	2	ppb	0.079	0.079	19.55
Cu	65	72	1	ppb	0.097	0.097	31.46
Zn	66	72	1	ppb	-0.258	-0.258	-14.87
Zn	66	72	2	ppb	-0.193	-0.193	-26.63
Zn	68	72	1	ppb	0.035	0.035	213.42
As	75	72	1	ppb	-3.117	-3.117	-13.60
As	75	72	2	ppb	0.015	0.015	204.53
Se	78	72	1	ppb	-1.602	-1.602	-9.28
Se	78	72	2	ppb	0.271	0.271	67.00
Se	82	72	1	ppb	0.049	0.049	423.96
Sr	88	72	1	ppb	0.004	0.004	683.91
Mo	95	72	1	ppb	0.028	0.028	73.83
Mo	97	72	1	ppb	0.032	0.032	68.70
Rh	103	115	1	ppb	1.303	1.303	365.11
Pd	105	115	1	ppb	0.886	0.886	964.66
Ag	107	72	1	ppb	0.009	0.009	43.66
Ag	109	72	1	ppb	0.011	0.011	40.86
Cd	111	115	1	ppb	0.006	0.006	75.37

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.008	0.008	48.02
Sn	118	72	1	ppb	0.066	0.066	4.43
Sn	119	72	1	ppb	0.055	0.055	21.67
Sb	121	72	1	ppb	0.068	0.068	20.05
Sb	121	72	2	ppb	0.102	0.102	6.99
Sb	123	72	1	ppb	0.088	0.088	7.08
Ba	135	115	1	ppb	0.017	0.017	79.61
Ba	137	115	1	ppb	0.008	0.008	243.31
W	182	209	1	ppb	-21.755	-21.755	-143.72
Pt	195	209	1	ppb	-6.793	-6.793	-2804.80
Au	197	209	1	ppb	49.151	49.151	518.35
Tl	203	209	1	ppb	0.431	0.431	19.20
Tl	205	209	1	ppb	0.410	0.410	20.25
Pb	206	209	1	ppb	-0.333	-0.333	-40.34
Pb	207	209	1	ppb	-0.324	-0.324	-38.67
Pb	208	209	1	ppb	-0.325	-0.325	-35.50
U	238	209	1	ppb	0.003	0.003	37.19

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	628,486	1.64	580973	108.2	70	125	
1	Ge	72	3,283,732	1.11	3057757	107.4	70	125	
2	Ge	72	427,990	0.24	407880	104.9	70	125	
1	In	115	3,316,758	2.10	3088743	107.4	70	125	
1	Bi	209	3,123,541	1.09	2922576	106.9	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	080SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 18:27
Sample Name	ICSA	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.618	0.618	8.35
Be	9	6	1	ppb	0.034	0.034	49.77
B	11	6	1	ppb	5.107	5.107	12.71
Na	23	72	1	ppb	99111.093	99111.093	1.28
Na	23	72	2	ppb	99273.605	99273.605	0.60
Mg	24	72	1	ppb	98658.420	98658.420	1.38
Al	27	72	1	ppb	94621.344	94621.344	1.08
P	31	72	1	ppb	94606.916	94606.916	0.80
K	39	72	1	ppb	100098.204	100098.204	0.80
Ca	44	72	1	ppb	98526.780	98526.780	0.49
Ca	44	72	2	ppb	94293.520	94293.520	0.26
Ti	47	72	1	ppb	2046.122	2046.122	0.79
Ti	47	72	2	ppb	1983.104	1983.104	0.70
V	51	72	1	ppb	-4.000	-4.000	-1.83
V	51	72	2	ppb	-0.116	-0.116	-15.96
Cr	52	72	1	ppb	1.659	1.659	0.73
Cr	52	72	2	ppb	1.274	1.274	3.66
Mn	55	72	1	ppb	-0.005	-0.005	-1466.56
Mn	55	72	2	ppb	0.179	0.179	5.44
Fe	56	72	1	ppb	100413.964	100413.964	0.73
Fe	56	72	2	ppb	97670.704	97670.704	0.40
Co	59	72	1	ppb	0.102	0.102	9.69
Co	59	72	2	ppb	0.017	0.017	39.29
Ni	60	72	1	ppb	0.693	0.693	11.61
Ni	60	72	2	ppb	0.143	0.143	21.27
Cu	63	72	1	ppb	2.295	2.295	1.81
Cu	63	72	2	ppb	1.553	1.553	1.49
Cu	65	72	1	ppb	2.204	2.204	5.91
Zn	66	72	1	ppb	0.894	0.894	10.07
Zn	66	72	2	ppb	0.205	0.205	67.06
Zn	68	72	1	ppb	0.472	0.472	3.21
As	75	72	1	ppb	-0.717	-0.717	-39.24
As	75	72	2	ppb	0.099	0.099	19.52
Se	78	72	1	ppb	4.067	4.067	25.03
Se	78	72	2	ppb	-0.009	-0.009	-1774.47
Se	82	72	1	ppb	0.208	0.208	45.43
Sr	88	72	1	ppb	0.911	0.911	3.71
Mo	95	72	1	ppb	2012.123	2012.123	1.28
Mo	97	72	1	ppb	2021.963	2021.963	1.14
Rh	103	115	1	ppb	14.625	14.625	89.89
Pd	105	115	1	ppb	-2.942	-2.942	-1792.09
Ag	107	72	1	ppb	0.214	0.214	52.82
Ag	109	72	1	ppb	0.229	0.229	53.91
Cd	111	115	1	ppb	0.882	0.882	6.63

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.599	0.599	3.25
Sn	118	72	1	ppb	0.117	0.117	1.82
Sn	119	72	1	ppb	0.087	0.087	12.69
Sb	121	72	1	ppb	0.187	0.187	5.73
Sb	121	72	2	ppb	0.202	0.202	1.99
Sb	123	72	1	ppb	0.197	0.197	6.81
Ba	135	115	1	ppb	0.081	0.081	33.82
Ba	137	115	1	ppb	0.065	0.065	50.86
W	182	209	1	ppb	1289.552	1289.552	5.31
Pt	195	209	1	ppb	-118.224	-118.224	-158.50
Au	197	209	1	ppb	631.367	631.367	7.53
Tl	203	209	1	ppb	0.225	0.225	25.04
Tl	205	209	1	ppb	0.216	0.216	22.13
Pb	206	209	1	ppb	0.052	0.052	35.41
Pb	207	209	1	ppb	0.020	0.020	195.42
Pb	208	209	1	ppb	0.031	0.031	21.44
U	238	209	1	ppb	0.004	0.004	38.49

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	554,557	0.63	580973	95.5	70	125	
1	Ge	72	3,032,134	0.24	3057757	99.2	70	125	
2	Ge	72	400,722	0.27	407880	98.2	70	125	
1	In	115	3,028,253	0.10	3088743	98.0	70	125	
1	Bi	209	2,897,922	0.47	2922576	99.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	081SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 18:32
Sample Name	ICSAB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	91.650	91.650	0.86
Be	9	6	1	ppb	93.629	93.629	0.81
B	11	6	1	ppb	452.795	452.795	0.72
Na	23	72	1	ppb	112581.103	112581.103	0.98
Na	23	72	2	ppb	111619.714	111619.714	0.55
Mg	24	72	1	ppb	111825.336	111825.336	1.15
Al	27	72	1	ppb	97701.950	97701.950	1.45
P	31	72	1	ppb	96391.064	96391.064	0.72
K	39	72	1	ppb	112854.341	112854.341	0.78
Ca	44	72	1	ppb	111991.677	111991.677	1.39
Ca	44	72	2	ppb	105754.482	105754.482	0.90
Ti	47	72	1	ppb	2213.089	2213.089	1.48
Ti	47	72	2	ppb	2125.579	2125.579	0.86
V	51	72	1	ppb	105.580	105.580	1.90
V	51	72	2	ppb	98.901	98.901	1.38
Cr	52	72	1	ppb	101.997	101.997	1.90
Cr	52	72	2	ppb	97.859	97.859	0.87
Mn	55	72	1	ppb	99.402	99.402	1.05
Mn	55	72	2	ppb	96.868	96.868	0.73
Fe	56	72	1	ppb	112557.313	112557.313	0.49
Fe	56	72	2	ppb	108895.844	108895.844	0.52
Co	59	72	1	ppb	99.823	99.823	0.70
Co	59	72	2	ppb	97.616	97.616	0.70
Ni	60	72	1	ppb	98.865	98.865	0.77
Ni	60	72	2	ppb	96.085	96.085	0.29
Cu	63	72	1	ppb	98.223	98.223	1.11
Cu	63	72	2	ppb	95.964	95.964	0.61
Cu	65	72	1	ppb	100.459	100.459	0.83
Zn	66	72	1	ppb	101.986	101.986	1.06
Zn	66	72	2	ppb	98.075	98.075	1.77
Zn	68	72	1	ppb	100.167	100.167	0.92
As	75	72	1	ppb	101.794	101.794	1.85
As	75	72	2	ppb	98.059	98.059	0.74
Se	78	72	1	ppb	107.672	107.672	0.93
Se	78	72	2	ppb	98.770	98.770	1.37
Se	82	72	1	ppb	100.242	100.242	1.10
Sr	88	72	1	ppb	101.382	101.382	1.30
Mo	95	72	1	ppb	2193.783	2193.783	0.80
Mo	97	72	1	ppb	2188.461	2188.461	0.30
Rh	103	115	1	ppb	82.990	82.990	8.22
Pd	105	115	1	ppb	73.907	73.907	74.91
Ag	107	72	1	ppb	93.002	93.002	0.84
Ag	109	72	1	ppb	93.718	93.718	1.06
Cd	111	115	1	ppb	98.427	98.427	1.23

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	97.678	97.678	0.66
Sn	118	72	1	ppb	97.469	97.469	0.96
Sn	119	72	1	ppb	99.043	99.043	0.95
Sb	121	72	1	ppb	105.847	105.847	0.87
Sb	121	72	2	ppb	100.189	100.189	0.51
Sb	123	72	1	ppb	105.770	105.770	0.89
Ba	135	115	1	ppb	97.399	97.399	1.75
Ba	137	115	1	ppb	97.185	97.185	1.33
W	182	209	1	ppb	1411.834	1411.834	5.50
Pt	195	209	1	ppb	-297.297	-297.297	-114.26
Au	197	209	1	ppb	610.219	610.219	82.73
Tl	203	209	1	ppb	86.389	86.389	4.02
Tl	205	209	1	ppb	87.425	87.425	4.32
Pb	206	209	1	ppb	95.406	95.406	0.79
Pb	207	209	1	ppb	95.336	95.336	0.78
Pb	208	209	1	ppb	97.271	97.271	0.84
U	238	209	1	ppb	99.966	99.966	0.90

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	538,786	1.08	580973	92.7	70	125	
1	Ge	72	3,061,177	1.53	3057757	100.1	70	125	
2	Ge	72	405,927	0.33	407880	99.5	70	125	
1	In	115	3,046,606	1.51	3088743	98.6	70	125	
1	Bi	209	2,863,613	1.17	2922576	98.0	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**091CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/24/2017 19:16**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	(b) (6) **ICPMS04**
ISTDRefDataFileName	**070CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	98.49	0.82	ppb	100	98.5	90	110	
Na	23	72	2	9138.80	1.18	ppb	10000	91.4	90	110	
Mg	24	72	1	9379.41	2.40	ppb	10000	93.8	90	110	
K	39	72	1	9674.04	2.02	ppb	10000	96.7	90	110	
Cr	52	72	2	93.78	0.70	ppb	100	93.8	90	110	
Mn	55	72	2	94.46	0.68	ppb	100	94.5	90	110	
Fe	56	72	2	9312.28	1.05	ppb	10000	93.1	90	110	
Co	59	72	2	96.96	0.74	ppb	100	97.0	90	110	
Ni	60	72	2	95.98	1.80	ppb	100	96.0	90	110	
Cu	63	72	2	95.56	0.29	ppb	100	95.6	90	110	
Zn	66	72	2	96.07	0.54	ppb	100	96.1	90	110	
As	75	72	2	99.92	1.53	ppb	100	99.9	90	110	
Se	78	72	2	95.57	1.90	ppb	100	95.6	90	110	
Mo	95	72	1	99.77	3.63	ppb	100	99.8	90	110	
Ag	107	72	1	103.77	2.33	ppb	100	103.8	90	110	
Cd	111	115	1	100.84	1.15	ppb	100	100.8	90	110	
Sb	121	72	2	101.84	1.01	ppb	100	101.8	90	110	
Ba	135	115	1	102.84	0.77	ppb	100	102.8	90	110	
Tl	203	209	1	99.86	1.70	ppb	100	99.9	90	110	
Pb	208	209	1	100.72	1.35	ppb	100	100.7	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	487084	0.46	580973	**83.8**	70	125	
Ge	72	1	3211189	1.82	3057757	**105.0**	70	125	
Ge	72	2	431392	0.82	407880	**105.8**	70	125	
In	115	1	3266442	0.73	3088743	**105.8**	70	125	
Bi	209	1	3203298	0.81	2922576	**109.6**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**092CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 19:21**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**070CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.43	18.59	ppb	2.5	
Be	9	6	1	0.09	10.19	ppb	1	
B	11	6	1	6.16	16.68	ppb	5	>2.2*DL
Na	23	72	1	7.80	13.32	ppb	250	
Na	23	72	2	5.84	13.54	ppb	250	
Mg	24	72	1	9.23	13.00	ppb	250	
Al	27	72	1	1.43	100.86	ppb	5	
P	31	72	1	-0.75	-26.28	ppb	5	
K	39	72	1	-20.46	-22.57	ppb	250	
Ca	44	72	1	44.82	21.24	ppb	250	
Ca	44	72	2	44.78	23.90	ppb	250	
Ti	47	72	1	0.15	41.78	ppb	2.5	
Ti	47	72	2	0.16	90.47	ppb	2.5	
V	51	72	1	-8.76	-3.06	ppb	2.5	
V	51	72	2	-0.22	-6.66	ppb	2.5	
Cr	52	72	1	-0.29	-9.95	ppb	2.5	
Cr	52	72	2	0.01	188.41	ppb	2.5	
Mn	55	72	1	-0.19	-38.85	ppb	2.5	
Mn	55	72	2	0.08	16.43	ppb	2.5	
Fe	56	72	1	-16.24	-4.37	ppb	100	
Fe	56	72	2	5.67	4.82	ppb	100	
Co	59	72	1	0.02	18.35	ppb	2.5	
Co	59	72	2	0.02	12.17	ppb	2.5	
Ni	60	72	1	0.09	4.00	ppb	2.5	
Ni	60	72	2	0.07	25.00	ppb	2.5	
Cu	63	72	1	0.40	10.84	ppb	2.5	
Cu	63	72	2	0.31	4.60	ppb	2.5	
Cu	65	72	1	0.49	3.37	ppb	2.5	
Zn	66	72	1	-0.10	-43.61	ppb	2.5	
Zn	66	72	2	-0.22	-31.19	ppb	2.5	
Zn	68	72	1	0.08	45.11	ppb	2.5	
As	75	72	1	-6.47	-5.58	ppb	2.5	
As	75	72	2	0.01	252.71	ppb	2.5	
Se	78	72	1	19.56	4.51	ppb	2.5	>2.2*DL
Se	78	72	2	0.45	50.31	ppb	2.5	
Se	82	72	1	0.01	1148.89	ppb	2.5	
Sr	88	72	1	0.09	31.27	ppb	2.5	
Mo	95	72	1	0.15	1.71	ppb	2.5	
Mo	97	72	1	0.15	6.26	ppb	2.5	
Ag	107	72	1	0.07	13.80	ppb	2.5	
Ag	109	72	1	0.07	14.69	ppb	2.5	
Cd	111	115	1	0.04	11.29	ppb	2.5	
Cd	114	115	1	0.03	22.50	ppb	2.5	
Sn	118	72	1	0.11	5.48	ppb	2.5	
Sn	119	72	1	0.09	20.97	ppb	2.5	
Sb	121	72	1	0.50	3.08	ppb	2.5	
Sb	121	72	2	0.42	1.96	ppb	2.5	
Sb	123	72	1	0.50	1.76	ppb	2.5	
Ba	135	115	1	0.08	50.24	ppb	2.5	
Ba	137	115	1	0.08	11.99	ppb	2.5	
Tl	203	209	1	0.95	8.20	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.91	7.11	ppb	2.5	
Pb	206	209	1	-0.84	-15.18	ppb	2.5	
Pb	207	209	1	-0.78	-15.81	ppb	2.5	
Pb	208	209	1	-0.78	-15.21	ppb	2.5	
U	238	209	1	0.03	11.55	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	551616	0.77	580973	94.9	70	125	
Ge	72	1	3217638	0.85	3057757	105.2	70	125	
Ge	72	2	428784	0.20	407880	105.1	70	125	
In	115	1	3315901	1.12	3088743	107.4	70	125	
Bi	209	1	3131748	0.59	2922576	107.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**103CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/24/2017 20:10**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**070CALB.D**
SamplePassFail	**Fail**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	105.13	1.22	ppb	100	105.1	90	110	
Na	23	72	2	8778.11	0.81	ppb	10000	87.8	90	110	CCV Main2 Failed
Mg	24	72	1	9218.91	0.86	ppb	10000	92.2	90	110	
K	39	72	1	9807.46	0.83	ppb	10000	98.1	90	110	
Cr	52	72	2	91.46	0.17	ppb	100	91.5	90	110	
Mn	55	72	2	94.36	0.56	ppb	100	94.4	90	110	
Fe	56	72	2	9133.33	0.63	ppb	10000	91.3	90	110	
Co	59	72	2	94.87	0.92	ppb	100	94.9	90	110	
Ni	60	72	2	91.90	1.03	ppb	100	91.9	90	110	
Cu	63	72	2	91.50	1.19	ppb	100	91.5	90	110	
Zn	66	72	2	95.42	0.65	ppb	100	95.4	90	110	
As	75	72	2	99.99	0.61	ppb	100	100.0	90	110	
Se	78	72	2	100.72	1.08	ppb	100	100.7	90	110	
Mo	95	72	1	98.29	1.60	ppb	100	98.3	90	110	
Ag	107	72	1	97.75	1.88	ppb	100	97.8	90	110	
Cd	111	115	1	98.43	0.81	ppb	100	98.4	90	110	
Sb	121	72	2	103.91	0.36	ppb	100	103.9	90	110	
Ba	135	115	1	101.48	0.91	ppb	100	101.5	90	110	
Tl	203	209	1	99.48	1.68	ppb	100	99.5	90	110	
Pb	208	209	1	100.92	0.42	ppb	100	100.9	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	437006	0.90	580973	**75.2**	70	125	
Ge	72	1	3065927	1.05	3057757	**100.3**	70	125	
Ge	72	2	408781	0.28	407880	**100.2**	70	125	
In	115	1	3080118	0.79	3088743	**99.7**	70	125	
Bi	209	1	2882154	0.38	2922576	**98.6**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**104CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 20:14**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**070CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.68	6.52	ppb	2.5	
Be	9	6	1	0.11	4.89	ppb	1	
B	11	6	1	5.05	20.96	ppb	5	>2.2*DL
Na	23	72	1	3.45	29.27	ppb	250	
Na	23	72	2	1.60	61.54	ppb	250	
Mg	24	72	1	14.23	7.93	ppb	250	
Al	27	72	1	2.17	111.77	ppb	5	
P	31	72	1	0.71	127.67	ppb	5	
K	39	72	1	-6.17	-54.73	ppb	250	
Ca	44	72	1	21.75	39.08	ppb	250	
Ca	44	72	2	34.48	12.30	ppb	250	
Ti	47	72	1	0.13	10.14	ppb	2.5	
Ti	47	72	2	0.07	119.16	ppb	2.5	
V	51	72	1	-8.77	-3.09	ppb	2.5	
V	51	72	2	-0.15	-12.92	ppb	2.5	
Cr	52	72	1	-0.22	-9.22	ppb	2.5	
Cr	52	72	2	0.03	38.26	ppb	2.5	
Mn	55	72	1	-0.10	-67.37	ppb	2.5	
Mn	55	72	2	0.13	17.65	ppb	2.5	
Fe	56	72	1	-4.30	-26.14	ppb	100	
Fe	56	72	2	7.71	6.64	ppb	100	
Co	59	72	1	0.04	6.39	ppb	2.5	
Co	59	72	2	0.05	11.27	ppb	2.5	
Ni	60	72	1	0.09	6.83	ppb	2.5	
Ni	60	72	2	0.07	24.82	ppb	2.5	
Cu	63	72	1	0.17	1.52	ppb	2.5	
Cu	63	72	2	0.18	14.18	ppb	2.5	
Cu	65	72	1	0.19	11.46	ppb	2.5	
Zn	66	72	1	-0.12	-3.88	ppb	2.5	
Zn	66	72	2	-0.09	-21.14	ppb	2.5	
Zn	68	72	1	0.16	60.93	ppb	2.5	
As	75	72	1	-4.24	-3.49	ppb	2.5	
As	75	72	2	0.05	29.20	ppb	2.5	
Se	78	72	1	25.66	3.74	ppb	2.5	>2.2*DL
Se	78	72	2	0.70	56.57	ppb	2.5	
Se	82	72	1	0.41	55.72	ppb	2.5	
Sr	88	72	1	0.10	24.76	ppb	2.5	
Mo	95	72	1	0.16	21.66	ppb	2.5	
Mo	97	72	1	0.15	16.88	ppb	2.5	
Ag	107	72	1	0.05	2.34	ppb	2.5	
Ag	109	72	1	0.05	3.08	ppb	2.5	
Cd	111	115	1	0.05	7.96	ppb	2.5	
Cd	114	115	1	0.05	15.72	ppb	2.5	
Sn	118	72	1	0.16	6.81	ppb	2.5	
Sn	119	72	1	0.14	12.45	ppb	2.5	
Sb	121	72	1	0.44	6.07	ppb	2.5	
Sb	121	72	2	0.43	5.58	ppb	2.5	
Sb	123	72	1	0.46	6.38	ppb	2.5	
Ba	135	115	1	0.09	37.89	ppb	2.5	
Ba	137	115	1	0.06	22.33	ppb	2.5	
Tl	203	209	1	1.02	5.85	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.98	7.32	ppb	2.5	
Pb	206	209	1	-1.04	-11.55	ppb	2.5	
Pb	207	209	1	-0.97	-10.23	ppb	2.5	
Pb	208	209	1	-0.98	-11.29	ppb	2.5	
U	238	209	1	0.03	17.65	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	473582	0.79	580973	81.5	70	125	
Ge	72	1	3056314	1.09	3057757	100.0	70	125	
Ge	72	2	398782	0.53	407880	97.8	70	125	
In	115	1	3091077	0.82	3088743	100.1	70	125	
Bi	209	1	2849796	0.91	2922576	97.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Blank Report

Sample Name	CAL BLK
Data File Name	106CALB.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 20:23:00
Type	CalBlk
VialNumber	1101
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
Current Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	46454	0.72
Be	9	6	1	181	15.65
B	11	6	1	17926	2.18
Na	23	72	1	152389	11.44
Na	23	72	2	5337	4.32
Mg	24	72	1	152936	10.83
Al	27	72	1	70018	42.10
P	31	72	1	34970	1.65
K	39	72	1	5130775	0.58
Ca	44	72	1	45392	13.46
Ca	44	72	2	402	16.75
Ti	47	72	1	250	9.33
Ti	47	72	2	4	114.60
V	51	72	1	432609	0.50
V	51	72	2	811	6.02
Cr	52	72	1	23333	2.48
Cr	52	72	2	706	3.55
Mn	55	72	1	18919	7.20
Mn	55	72	2	287	15.99
Fe	56	72	1	2735423	2.10
Fe	56	72	2	11483	2.64
Co	59	72	1	499	24.68
Co	59	72	2	67	15.00
Ni	60	72	1	207	15.56
Ni	60	72	2	71	32.92
Cu	63	72	1	2718	5.60
Cu	63	72	2	835	10.30
Cu	65	72	1	1437	8.13
Zn	66	72	1	1951	13.43
Zn	68	72	1	1538	9.89
As	75	72	1	82111	1.27
As	75	72	2	38	24.25
Se	78	72	1	33790	0.72
Se	78	72	2	39	7.25
Se	82	72	1	656	4.37
Sr	88	72	1	2595	36.57
Mo	95	72	1	263	27.99
Mo	97	72	1	237	25.62
Ag	107	72	1	170	33.51
Ag	109	72	1	164	10.00
Cd	111	115	1	27	57.28
Cd	114	115	1	83	14.42
Sn	118	72	1	1121	5.68
Sn	119	72	1	387	6.51
Sb	121	72	1	1856	3.73
Sb	121	72	2	479	3.73

Calibration Blank Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	123	72	1	1378	9.63
Ba	135	115	1	213	27.64
Ba	137	115	1	328	42.11
Tl	203	209	1	3628	6.07
Tl	205	209	1	8438	7.85
Pb	206	209	1	4909	15.23
Pb	207	209	1	4193	20.57
Pb	208	209	1	19212	18.54

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Li	6	1	470219	0.90
Ge	72	1	2998920	0.56
Ge	72	2	398894	0.38
In	115	1	3039557	0.95
Bi	209	1	2809191	1.05

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	2/10/200
Data File Name	107CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 20:28
Type	CalStd
VialNumber	1102
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	106CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	62652	1.02
Be	9	6	1	7534	1.98
B	11	6	1	38360	2.03
Na	23	72	1	3188388	0.43
Na	23	72	2	78496	0.48
Mg	24	72	1	2352342	1.41
Al	27	72	1	123747	21.68
P	31	72	1	47342	1.26
K	39	72	1	8219947	0.33
Ca	44	72	1	140097	4.61
Ca	44	72	2	2365	5.22
Ti	47	72	1	3237	4.91
Ti	47	72	2	188	1.02
V	51	72	1	483603	0.47
V	51	72	2	6086	5.09
Cr	52	72	1	59299	0.81
Cr	52	72	2	7634	1.91
Mn	55	72	1	66455	2.65
Mn	55	72	2	3852	0.95
Fe	56	72	1	6847307	0.87
Fe	56	72	2	550540	0.40
Co	59	72	1	39588	2.01
Co	59	72	2	10629	2.45
Ni	60	72	1	9271	0.83
Ni	60	72	2	2784	3.23
Cu	63	72	1	24217	1.61
Cu	63	72	2	7705	1.53
Cu	65	72	1	11515	2.70
Zn	66	72	1	9051	3.70
Zn	68	72	1	6509	5.03
As	75	72	1	91779	0.61
As	75	72	2	1453	0.61
Se	78	72	1	34979	0.33
Se	78	72	2	102	13.81
Se	82	72	1	1063	4.80
Sr	88	72	1	60992	2.53
Mo	95	72	1	10857	2.26
Mo	97	72	1	6793	3.23
Ag	107	72	1	28566	1.94
Ag	109	72	1	27210	1.13
Cd	111	115	1	6215	0.61
Cd	114	115	1	14934	4.05
Sn	118	72	1	17608	3.84
Sn	119	72	1	6506	2.22

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	28778	0.42
Sb	121	72	2	7169	3.56
Sb	123	72	1	22112	0.45
Ba	135	115	1	5811	4.57
Ba	137	115	1	9898	1.86
Tl	203	209	1	22117	3.02
Tl	205	209	1	52746	3.27
Pb	206	209	1	23472	2.76
Pb	207	209	1	20928	4.44
Pb	208	209	1	94299	3.33

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	476957	0.66	470219	101.4	70	125	
Ge	72	1	3051677	0.96	2998920	101.8	70	125	
Ge	72	2	408509	0.61	398894	102.4	70	125	
In	115	1	3071503	1.34	3039557	101.1	70	125	
Bi	209	1	2878126	1.64	2809191	102.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	5/25/500
Data File Name	108CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 20:33
Type	CalStd
VialNumber	1103
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	106CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	89272	1.26
Be	9	6	1	19009	1.79
B	11	6	1	74254	2.65
Na	23	72	1	7890524	0.48
Na	23	72	2	193157	0.73
Mg	24	72	1	5752401	0.22
Al	27	72	1	164374	18.51
P	31	72	1	68271	1.80
K	39	72	1	12990393	0.11
Ca	44	72	1	280723	1.91
Ca	44	72	2	5209	1.40
Ti	47	72	1	7594	3.20
Ti	47	72	2	399	1.74
V	51	72	1	589372	0.38
V	51	72	2	14881	1.76
Cr	52	72	1	117618	0.78
Cr	52	72	2	18328	1.72
Mn	55	72	1	139564	1.22
Mn	55	72	2	9066	1.60
Fe	56	72	1	13194064	0.24
Fe	56	72	2	1430987	0.97
Co	59	72	1	102464	1.21
Co	59	72	2	26932	1.71
Ni	60	72	1	23376	1.60
Ni	60	72	2	7074	1.74
Cu	63	72	1	59153	0.18
Cu	63	72	2	19074	2.08
Cu	65	72	1	28098	0.24
Zn	66	72	1	20750	1.01
Zn	68	72	1	14711	1.63
As	75	72	1	112642	0.15
As	75	72	2	3692	1.20
Se	78	72	1	36301	0.64
Se	78	72	2	213	11.21
Se	82	72	1	1832	3.12
Sr	88	72	1	150780	0.93
Mo	95	72	1	27752	2.21
Mo	97	72	1	16978	3.27
Ag	107	72	1	71313	2.66
Ag	109	72	1	69344	1.68
Cd	111	115	1	15551	0.38
Cd	114	115	1	37889	1.70
Sn	118	72	1	43326	1.06
Sn	119	72	1	16727	2.05

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	71111	0.84
Sb	121	72	2	18000	0.69
Sb	123	72	1	54238	0.59
Ba	135	115	1	14688	1.68
Ba	137	115	1	24940	1.41
Tl	203	209	1	53374	3.11
Tl	205	209	1	125790	3.10
Pb	206	209	1	52181	1.58
Pb	207	209	1	45812	1.91
Pb	208	209	1	208388	1.52

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	492477	1.68	470219	104.7	70	125	
Ge	72	1	3168405	2.35	2998920	105.7	70	125	
Ge	72	2	416181	0.40	398894	104.3	70	125	
In	115	1	3185281	0.94	3039557	104.8	70	125	
Bi	209	1	2958331	1.61	2809191	105.3	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	10/50/1000
Data File Name	109CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 20:37
Type	CalStd
VialNumber	1104
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	106CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	131426	1.34
Be	9	6	1	39045	0.54
B	11	6	1	128438	0.96
Na	23	72	1	15651993	0.25
Na	23	72	2	386421	0.24
Mg	24	72	1	11457099	0.57
Al	27	72	1	230499	11.14
P	31	72	1	99296	1.15
K	39	72	1	20696281	0.81
Ca	44	72	1	512916	0.74
Ca	44	72	2	10218	2.97
Ti	47	72	1	14979	1.36
Ti	47	72	2	809	18.10
V	51	72	1	718940	1.20
V	51	72	2	29478	1.45
Cr	52	72	1	211624	1.41
Cr	52	72	2	35919	1.42
Mn	55	72	1	263831	0.71
Mn	55	72	2	18685	0.58
Fe	56	72	1	23644084	0.49
Fe	56	72	2	2875470	1.24
Co	59	72	1	205446	0.70
Co	59	72	2	54370	0.68
Ni	60	72	1	47279	0.59
Ni	60	72	2	14215	1.61
Cu	63	72	1	116194	1.72
Cu	63	72	2	38173	1.34
Cu	65	72	1	55807	0.97
Zn	66	72	1	39233	0.86
Zn	68	72	1	27998	0.78
As	75	72	1	139852	1.99
As	75	72	2	7302	1.38
Se	78	72	1	38918	0.59
Se	78	72	2	416	5.97
Se	82	72	1	3066	3.33
Sr	88	72	1	302650	1.18
Mo	95	72	1	55665	1.41
Mo	97	72	1	34157	2.03
Ag	107	72	1	146389	1.06
Ag	109	72	1	141858	1.06
Cd	111	115	1	32300	0.37
Cd	114	115	1	77450	0.72
Sn	118	72	1	87627	0.45
Sn	119	72	1	33274	1.69

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	143249	0.45
Sb	121	72	2	35484	0.55
Sb	123	72	1	109504	1.04
Ba	135	115	1	29207	1.66
Ba	137	115	1	50664	0.77
Tl	203	209	1	107423	2.28
Tl	205	209	1	255117	2.42
Pb	206	209	1	99420	2.00
Pb	207	209	1	88899	0.51
Pb	208	209	1	399774	0.88

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	486050	1.12	470219	103.4	70	125	
Ge	72	1	3120851	0.99	2998920	104.1	70	125	
Ge	72	2	417496	0.55	398894	104.7	70	125	
In	115	1	3163722	0.71	3039557	104.1	70	125	
Bi	209	1	2954982	0.55	2809191	105.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	100/500/10K
Data File Name	110CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 20:42
Type	CalStd
VialNumber	1105
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	106CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	848959	0.52
Be	9	6	1	365446	0.72
B	11	6	1	1053744	1.90
Na	23	72	1	145050192	0.61
Na	23	72	2	3594442	1.25
Mg	24	72	1	105730115	0.63
Al	27	72	1	1543677	0.68
P	31	72	1	591890	0.42
K	39	72	1	150942861	0.52
Ca	44	72	1	4352522	0.38
Ca	44	72	2	91801	1.72
Ti	47	72	1	140241	1.55
Ti	47	72	2	7455	1.40
V	51	72	1	2553231	0.90
V	51	72	2	270032	0.53
Cr	52	72	1	1795901	1.44
Cr	52	72	2	329528	1.01
Mn	55	72	1	2321725	1.17
Mn	55	72	2	168150	1.05
Fe	56	72	1	198232241	0.98
Fe	56	72	2	26483337	0.88
Co	59	72	1	1952463	0.58
Co	59	72	2	502622	0.50
Ni	60	72	1	433367	0.48
Ni	60	72	2	132190	0.71
Cu	63	72	1	1072026	0.48
Cu	63	72	2	350073	1.18
Cu	65	72	1	512493	1.14
Zn	66	72	1	353217	0.67
Zn	68	72	1	251638	0.93
As	75	72	1	537117	0.22
As	75	72	2	68666	1.19
Se	78	72	1	88566	0.38
Se	78	72	2	3551	5.27
Se	82	72	1	23275	0.51
Sr	88	72	1	2918291	0.56
Mo	95	72	1	530841	0.59
Mo	97	72	1	324539	1.41
Ag	107	72	1	1398187	2.18
Ag	109	72	1	1339073	0.61
Cd	111	115	1	304840	1.09
Cd	114	115	1	735910	0.43
Sn	118	72	1	839466	0.40
Sn	119	72	1	318172	1.21

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	1286393	1.64
Sb	121	72	2	320142	0.77
Sb	123	72	1	981110	1.40
Ba	135	115	1	279431	0.58
Ba	137	115	1	479162	1.37
Tl	203	209	1	1064443	1.29
Tl	205	209	1	2659847	1.63
Pb	206	209	1	906127	0.39
Pb	207	209	1	819628	0.71
Pb	208	209	1	3770555	0.17

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	449153	2.09	470219	95.5	70	125	
Ge	72	1	3110458	1.96	2998920	103.7	70	125	
Ge	72	2	407912	1.14	398894	102.3	70	125	
In	115	1	3134896	1.29	3039557	103.1	70	125	
Bi	209	1	2926276	1.54	2809191	104.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration Standard Report

Sample Name	200/1000/20K
Data File Name	111CALS.D
DataPath	C:\ICPMH\1\DATA\17D24m00.B
AcqDateTime	4/24/2017 20:47
Type	CalStd
VialNumber	1106
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	106CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	1660374	0.69
Be	9	6	1	709896	0.57
B	11	6	1	2042827	1.56
Na	23	72	1	281028691	0.30
Na	23	72	2	6936765	0.20
Mg	24	72	1	204060455	0.43
Al	27	72	1	2863037	0.93
P	31	72	1	1111787	1.34
K	39	72	1	286315436	0.70
Ca	44	72	1	8450540	0.65
Ca	44	72	2	179601	0.60
Ti	47	72	1	272556	0.53
Ti	47	72	2	14370	2.15
V	51	72	1	4379637	0.52
V	51	72	2	526549	0.96
Cr	52	72	1	3422609	0.26
Cr	52	72	2	643095	0.58
Mn	55	72	1	4435157	0.31
Mn	55	72	2	327028	0.26
Fe	56	72	1	379602057	0.18
Fe	56	72	2	51460686	0.28
Co	59	72	1	3691325	0.50
Co	59	72	2	970655	0.14
Ni	60	72	1	826470	0.28
Ni	60	72	2	254250	0.82
Cu	63	72	1	2088977	0.24
Cu	63	72	2	681902	0.90
Cu	65	72	1	971182	0.30
Zn	66	72	1	676044	0.57
Zn	68	72	1	477588	0.17
As	75	72	1	947041	0.29
As	75	72	2	133243	0.24
Se	78	72	1	140306	0.59
Se	78	72	2	6883	0.30
Se	82	72	1	43773	0.95
Sr	88	72	1	5531056	0.29
Mo	95	72	1	1023371	0.83
Mo	97	72	1	629910	0.79
Ag	107	72	1	2704302	1.22
Ag	109	72	1	2637582	0.56
Cd	111	115	1	585680	0.60
Cd	114	115	1	1461686	0.65
Sn	118	72	1	1684388	0.93
Sn	119	72	1	612242	0.58

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	2623867	0.56
Sb	121	72	2	634805	0.49
Sb	123	72	1	2026555	0.80
Ba	135	115	1	538675	0.27
Ba	137	115	1	921892	0.20
Tl	203	209	1	2153128	1.59
Tl	205	209	1	5030106	1.59
Pb	206	209	1	1829183	0.65
Pb	207	209	1	1652354	1.60
Pb	208	209	1	7357377	1.04

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	397497	1.64	470219	84.5	70	125	
Ge	72	1	2989039	1.70	2998920	99.7	70	125	
Ge	72	2	401744	0.59	398894	100.7	70	125	
In	115	1	2980865	1.46	3039557	98.1	70	125	
Bi	209	1	2813458	1.78	2809191	100.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	112SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 20:51
Sample Name	ICCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	91.382	91.382	0.81
Be	9	6	1	ppb	105.707	105.707	1.14
B	11	6	1	ppb	472.984	472.984	1.05
Na	23	72	1	ppb	9957.417	9957.417	1.68
Na	23	72	2	ppb	9974.055	9974.055	0.49
Mg	24	72	1	ppb	9892.766	9892.766	0.95
Al	27	72	1	ppb	103.579	103.579	2.06
P	31	72	1	ppb	515.249	515.249	1.26
K	39	72	1	ppb	9853.502	9853.502	0.95
Ca	44	72	1	ppb	9845.021	9845.021	1.14
Ca	44	72	2	ppb	9859.423	9859.423	1.12
Ti	47	72	1	ppb	98.457	98.457	1.72
Ti	47	72	2	ppb	101.876	101.876	3.65
V	51	72	1	ppb	95.309	95.309	2.34
V	51	72	2	ppb	101.900	101.900	0.71
Cr	52	72	1	ppb	102.219	102.219	1.02
Cr	52	72	2	ppb	101.662	101.662	0.31
Mn	55	72	1	ppb	102.193	102.193	1.15
Mn	55	72	2	ppb	102.839	102.839	0.93
Fe	56	72	1	ppb	9873.284	9873.284	1.05
Fe	56	72	2	ppb	9842.212	9842.212	0.36
Co	59	72	1	ppb	104.883	104.883	1.69
Co	59	72	2	ppb	103.252	103.252	0.29
Ni	60	72	1	ppb	104.241	104.241	1.08
Ni	60	72	2	ppb	104.031	104.031	0.75
Cu	63	72	1	ppb	100.732	100.732	0.94
Cu	63	72	2	ppb	102.343	102.343	0.34
Cu	65	72	1	ppb	103.309	103.309	0.86
Zn	66	72	1	ppb	102.281	102.281	0.89
Zn	66	72	2	ppb	101.667	101.667	0.44
Zn	68	72	1	ppb	102.359	102.359	1.39
As	75	72	1	ppb	98.137	98.137	1.39
As	75	72	2	ppb	103.586	103.586	1.16
Se	78	72	1	ppb	101.041	101.041	0.88
Se	78	72	2	ppb	104.177	104.177	1.54
Se	82	72	1	ppb	100.958	100.958	0.46
Sr	88	72	1	ppb	99.996	99.996	1.12
Mo	95	72	1	ppb	99.835	99.835	1.09
Mo	97	72	1	ppb	100.315	100.315	1.39
Rh	103	115	1	ppb	101.982	101.982	27.76
Pd	105	115	1	ppb	75.189	75.189	29.55
Ag	107	72	1	ppb	103.649	103.649	0.82
Ag	109	72	1	ppb	101.378	101.378	0.87
Cd	111	115	1	ppb	100.739	100.739	1.29

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	98.266	98.266	1.38
Sn	118	72	1	ppb	95.913	95.913	0.82
Sn	119	72	1	ppb	99.014	99.014	1.17
Sb	121	72	1	ppb	110.754	110.754	1.63
Sb	121	72	2	ppb	106.292	106.292	0.37
Sb	123	72	1	ppb	108.791	108.791	1.11
Ba	135	115	1	ppb	100.658	100.658	1.32
Ba	137	115	1	ppb	101.135	101.135	1.33
W	182	209	1	ppb	88.272	88.272	50.08
Pt	195	209	1	ppb	33.445	33.445	306.33
Au	197	209	1	ppb	262.525	262.525	56.28
Tl	203	209	1	ppb	108.090	108.090	1.39
Tl	205	209	1	ppb	107.833	107.833	1.83
Pb	206	209	1	ppb	102.506	102.506	2.03
Pb	207	209	1	ppb	94.745	94.745	1.50
Pb	208	209	1	ppb	101.268	101.268	2.05
U	238	209	1	ppb	99.477	99.477	1.46

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	439,132	0.75	470219	93.4	70	125	
1	Ge	72	3,130,036	0.88	2998920	104.4	70	125	
2	Ge	72	415,831	0.33	398894	104.2	70	125	
1	In	115	3,138,490	0.76	3039557	103.3	70	125	
1	Bi	209	2,879,829	1.94	2809191	102.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	113SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 20:56
Sample Name	LLCCV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	4.535	4.535	2.52
Be	9	6	1	ppb	4.847	4.847	2.15
B	11	6	1	ppb	26.751	26.751	1.53
Na	23	72	1	ppb	523.094	523.094	1.81
Na	23	72	2	ppb	523.883	523.883	1.01
Mg	24	72	1	ppb	514.820	514.820	2.01
Al	27	72	1	ppb	5.626	5.626	29.03
P	31	72	1	ppb	27.315	27.315	7.29
K	39	72	1	ppb	511.639	511.639	3.87
Ca	44	72	1	ppb	536.990	536.990	0.20
Ca	44	72	2	ppb	545.666	545.666	1.52
Ti	47	72	1	ppb	5.069	5.069	5.78
Ti	47	72	2	ppb	5.434	5.434	7.90
V	51	72	1	ppb	-0.112	-0.112	-922.25
V	51	72	2	ppb	4.883	4.883	0.33
Cr	52	72	1	ppb	4.950	4.950	3.26
Cr	52	72	2	ppb	5.194	5.194	1.62
Mn	55	72	1	ppb	5.147	5.147	2.06
Mn	55	72	2	ppb	5.369	5.369	1.54
Fe	56	72	1	ppb	498.601	498.601	3.25
Fe	56	72	2	ppb	531.107	531.107	0.92
Co	59	72	1	ppb	5.215	5.215	1.97
Co	59	72	2	ppb	5.256	5.256	3.44
Ni	60	72	1	ppb	5.235	5.235	3.57
Ni	60	72	2	ppb	5.436	5.436	1.48
Cu	63	72	1	ppb	5.184	5.184	3.08
Cu	63	72	2	ppb	5.269	5.269	0.22
Cu	65	72	1	ppb	5.314	5.314	1.50
Zn	66	72	1	ppb	4.977	4.977	1.13
Zn	66	72	2	ppb	4.863	4.863	3.87
Zn	68	72	1	ppb	5.273	5.273	1.06
As	75	72	1	ppb	3.088	3.088	27.16
As	75	72	2	ppb	5.292	5.292	3.51
Se	78	72	1	ppb	4.294	4.294	27.71
Se	78	72	2	ppb	4.745	4.745	12.94
Se	82	72	1	ppb	4.183	4.183	3.34
Sr	88	72	1	ppb	5.081	5.081	1.77
Mo	95	72	1	ppb	5.264	5.264	4.77
Mo	97	72	1	ppb	5.168	5.168	3.68
Rh	103	115	1	ppb	7.988	7.988	143.64
Pd	105	115	1	ppb	-87.504	-87.504	-141.13
Ag	107	72	1	ppb	5.112	5.112	2.94
Ag	109	72	1	ppb	5.231	5.231	3.43
Cd	111	115	1	ppb	5.109	5.109	3.59

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	4.869	4.869	1.59
Sn	118	72	1	ppb	5.062	5.062	2.53
Sn	119	72	1	ppb	5.114	5.114	3.99
Sb	121	72	1	ppb	5.604	5.604	3.57
Sb	121	72	2	ppb	5.524	5.524	0.64
Sb	123	72	1	ppb	5.600	5.600	3.09
Ba	135	115	1	ppb	5.034	5.034	1.52
Ba	137	115	1	ppb	4.937	4.937	1.04
W	182	209	1	ppb	-24.684	-24.684	-202.09
Pt	195	209	1	ppb	170.189	170.189	162.70
Au	197	209	1	ppb	78.992	78.992	386.92
Tl	203	209	1	ppb	5.815	5.815	5.91
Tl	205	209	1	ppb	5.541	5.541	4.87
Pb	206	209	1	ppb	4.989	4.989	0.67
Pb	207	209	1	ppb	4.905	4.905	1.20
Pb	208	209	1	ppb	4.926	4.926	0.28
U	238	209	1	ppb	4.221	4.221	1.54

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	484,958	0.98	470219	103.1	70	125	
1	Ge	72	3,098,040	1.86	2998920	103.3	70	125	
2	Ge	72	414,172	0.34	398894	103.8	70	125	
1	In	115	3,151,725	1.34	3039557	103.7	70	125	
1	Bi	209	2,899,973	0.82	2809191	103.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	114SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 21:00
Sample Name	LLCCV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	1.788	1.788	4.47
Be	9	6	1	ppb	1.923	1.923	1.67
B	11	6	1	ppb	11.897	11.897	4.40
Na	23	72	1	ppb	210.869	210.869	0.94
Na	23	72	2	ppb	208.775	208.775	0.78
Mg	24	72	1	ppb	206.187	206.187	0.71
Al	27	72	1	ppb	3.599	3.599	56.32
P	31	72	1	ppb	13.403	13.403	10.05
K	39	72	1	ppb	209.414	209.414	1.15
Ca	44	72	1	ppb	222.556	222.556	6.15
Ca	44	72	2	ppb	230.514	230.514	6.62
Ti	47	72	1	ppb	2.051	2.051	3.21
Ti	47	72	2	ppb	2.032	2.032	27.58
V	51	72	1	ppb	-1.351	-1.351	-6.61
V	51	72	2	ppb	1.825	1.825	2.22
Cr	52	72	1	ppb	1.983	1.983	3.50
Cr	52	72	2	ppb	2.163	2.163	3.82
Mn	55	72	1	ppb	2.136	2.136	4.77
Mn	55	72	2	ppb	2.089	2.089	7.52
Fe	56	72	1	ppb	203.752	203.752	1.40
Fe	56	72	2	ppb	206.854	206.854	0.32
Co	59	72	1	ppb	2.118	2.118	1.10
Co	59	72	2	ppb	2.078	2.078	1.35
Ni	60	72	1	ppb	2.116	2.116	2.26
Ni	60	72	2	ppb	2.146	2.146	0.78
Cu	63	72	1	ppb	2.113	2.113	2.89
Cu	63	72	2	ppb	2.078	2.078	2.07
Cu	65	72	1	ppb	2.067	2.067	3.13
Zn	66	72	1	ppb	1.820	1.820	1.55
Zn	66	72	2	ppb	1.776	1.776	9.34
Zn	68	72	1	ppb	2.055	2.055	3.52
As	75	72	1	ppb	1.117	1.117	18.52
As	75	72	2	ppb	2.098	2.098	2.22
Se	78	72	1	ppb	1.054	1.054	87.45
Se	78	72	2	ppb	1.680	1.680	26.68
Se	82	72	1	ppb	1.452	1.452	7.42
Sr	88	72	1	ppb	2.077	2.077	0.80
Mo	95	72	1	ppb	2.085	2.085	1.63
Mo	97	72	1	ppb	2.095	2.095	1.05
Rh	103	115	1	ppb	2.907	2.907	332.70
Pd	105	115	1	ppb	-49.846	-49.846	-66.80
Ag	107	72	1	ppb	2.069	2.069	0.66
Ag	109	72	1	ppb	2.062	2.062	1.12
Cd	111	115	1	ppb	2.061	2.061	2.02

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	2.010	2.010	3.14
Sn	118	72	1	ppb	2.039	2.039	3.37
Sn	119	72	1	ppb	2.077	2.077	3.51
Sb	121	72	1	ppb	2.236	2.236	0.92
Sb	121	72	2	ppb	2.226	2.226	1.91
Sb	123	72	1	ppb	2.228	2.228	2.04
Ba	135	115	1	ppb	2.025	2.025	4.44
Ba	137	115	1	ppb	1.986	1.986	1.17
W	182	209	1	ppb	5.035	5.035	1003.25
Pt	195	209	1	ppb	262.017	262.017	127.22
Au	197	209	1	ppb	36.462	36.462	872.01
Tl	203	209	1	ppb	2.312	2.312	3.30
Tl	205	209	1	ppb	2.201	2.201	4.68
Pb	206	209	1	ppb	1.964	1.964	6.00
Pb	207	209	1	ppb	2.006	2.006	7.22
Pb	208	209	1	ppb	1.993	1.993	6.14
U	238	209	1	ppb	1.694	1.694	1.10

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	483,977	0.58	470219	102.9	70	125	
1	Ge	72	3,080,447	0.37	2998920	102.7	70	125	
2	Ge	72	413,634	0.07	398894	103.7	70	125	
1	In	115	3,092,415	0.57	3039557	101.7	70	125	
1	Bi	209	2,850,915	1.85	2809191	101.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	115SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 21:05
Sample Name	ICCB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	-0.051	-0.051	-8.30
Be	9	6	1	ppb	0.031	0.031	30.46
B	11	6	1	ppb	2.985	2.985	0.03
Na	23	72	1	ppb	0.813	0.813	122.65
Na	23	72	2	ppb	0.508	0.508	63.67
Mg	24	72	1	ppb	-6.800	-6.800	-23.19
Al	27	72	1	ppb	-0.424	-0.424	-382.72
P	31	72	1	ppb	1.739	1.739	42.71
K	39	72	1	ppb	8.380	8.380	63.27
Ca	44	72	1	ppb	0.650	0.650	2134.64
Ca	44	72	2	ppb	5.146	5.146	106.91
Ti	47	72	1	ppb	0.003	0.003	416.62
Ti	47	72	2	ppb	0.075	0.075	105.64
V	51	72	1	ppb	-2.376	-2.376	-4.49
V	51	72	2	ppb	-0.231	-0.231	-14.64
Cr	52	72	1	ppb	-0.013	-0.013	-235.06
Cr	52	72	2	ppb	-0.018	-0.018	-53.93
Mn	55	72	1	ppb	0.062	0.062	74.40
Mn	55	72	2	ppb	-0.002	-0.002	-2715.03
Fe	56	72	1	ppb	-0.708	-0.708	-72.76
Fe	56	72	2	ppb	0.091	0.091	98.98
Co	59	72	1	ppb	0.003	0.003	174.40
Co	59	72	2	ppb	0.009	0.009	9.96
Ni	60	72	1	ppb	0.000	0.000	-10213.79
Ni	60	72	2	ppb	0.009	0.009	250.84
Cu	63	72	1	ppb	-0.002	-0.002	-180.32
Cu	63	72	2	ppb	-0.021	-0.021	-50.18
Cu	65	72	1	ppb	-0.021	-0.021	-97.72
Zn	66	72	1	ppb	-0.163	-0.163	-45.76
Zn	66	72	2	ppb	-0.260	-0.260	-12.70
Zn	68	72	1	ppb	0.032	0.032	217.97
As	75	72	1	ppb	-0.548	-0.548	-32.31
As	75	72	2	ppb	0.029	0.029	24.69
Se	78	72	1	ppb	-1.254	-1.254	-64.00
Se	78	72	2	ppb	-0.084	-0.084	-426.75
Se	82	72	1	ppb	-0.034	-0.034	-472.08
Sr	88	72	1	ppb	-0.003	-0.003	-1282.51
Mo	95	72	1	ppb	0.017	0.017	96.67
Mo	97	72	1	ppb	0.006	0.006	288.71
Rh	103	115	1	ppb	4.511	4.511	279.54
Pd	105	115	1	ppb	93.140	93.140	27.29
Ag	107	72	1	ppb	0.010	0.010	28.80
Ag	109	72	1	ppb	0.011	0.011	33.64
Cd	111	115	1	ppb	0.002	0.002	130.99

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.004	0.004	97.59
Sn	118	72	1	ppb	0.058	0.058	10.37
Sn	119	72	1	ppb	0.065	0.065	36.30
Sb	121	72	1	ppb	0.054	0.054	18.08
Sb	121	72	2	ppb	0.063	0.063	12.09
Sb	123	72	1	ppb	0.059	0.059	21.07
Ba	135	115	1	ppb	0.003	0.003	661.99
Ba	137	115	1	ppb	0.009	0.009	92.91
W	182	209	1	ppb	11.573	11.573	176.50
Pt	195	209	1	ppb	278.287	278.287	3.86
Au	197	209	1	ppb	87.594	87.594	461.83
Tl	203	209	1	ppb	0.224	0.224	33.40
Tl	205	209	1	ppb	0.204	0.204	29.14
Pb	206	209	1	ppb	-0.020	-0.020	-389.54
Pb	207	209	1	ppb	-0.042	-0.042	-188.39
Pb	208	209	1	ppb	-0.032	-0.032	-235.68
U	238	209	1	ppb	0.002	0.002	63.33

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	485,621	1.98	470219	103.3	70	125	
1	Ge	72	3,080,971	1.63	2998920	102.7	70	125	
2	Ge	72	406,335	0.58	398894	101.9	70	125	
1	In	115	3,116,434	2.20	3039557	102.5	70	125	
1	Bi	209	2,866,738	2.43	2809191	102.0	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**116CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/24/2017 21:10**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**106CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	99.07	0.18	ppb	100	99.1	90	110	
Na	23	72	2	10134.05	0.53	ppb	10000	101.3	90	110	
Mg	24	72	1	10116.57	0.65	ppb	10000	101.2	90	110	
K	39	72	1	10005.82	0.85	ppb	10000	100.1	90	110	
Cr	52	72	2	100.58	0.67	ppb	100	100.6	90	110	
Mn	55	72	2	101.82	0.11	ppb	100	101.8	90	110	
Fe	56	72	2	10028.56	0.40	ppb	10000	100.3	90	110	
Co	59	72	2	100.61	0.12	ppb	100	100.6	90	110	
Ni	60	72	2	101.16	0.79	ppb	100	101.2	90	110	
Cu	63	72	2	100.52	1.01	ppb	100	100.5	90	110	
Zn	66	72	2	100.48	0.47	ppb	100	100.5	90	110	
As	75	72	2	101.25	0.64	ppb	100	101.2	90	110	
Se	78	72	2	101.65	1.50	ppb	100	101.6	90	110	
Mo	95	72	1	99.62	1.40	ppb	100	99.6	90	110	
Ag	107	72	1	101.29	2.22	ppb	100	101.3	90	110	
Cd	111	115	1	99.55	0.80	ppb	100	99.5	90	110	
Sb	121	72	2	100.53	0.28	ppb	100	100.5	90	110	
Ba	135	115	1	98.89	1.43	ppb	100	98.9	90	110	
Tl	203	209	1	98.64	0.63	ppb	100	98.6	90	110	
Pb	208	209	1	100.47	0.22	ppb	100	100.5	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	451260	0.44	470219	**96.0**	70	125	
Ge	72	1	3101785	0.89	2998920	**103.4**	70	125	
Ge	72	2	415201	0.52	398894	**104.1**	70	125	
In	115	1	3118973	1.12	3039557	**102.6**	70	125	
Bi	209	1	2918161	1.05	2809191	**103.9**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**117CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 21:15**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**106CALB.D**
SamplePassFail	**Pass**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.09	14.48	ppb	2.5	
Be	9	6	1	0.09	3.75	ppb	1	
B	11	6	1	4.44	8.48	ppb	5	
Na	23	72	1	9.74	2.61	ppb	250	
Na	23	72	2	9.53	6.80	ppb	250	
Mg	24	72	1	-2.08	-26.75	ppb	250	
Al	27	72	1	0.97	152.46	ppb	5	
P	31	72	1	0.86	48.43	ppb	5	
K	39	72	1	0.54	1745.52	ppb	250	
Ca	44	72	1	19.32	49.56	ppb	250	
Ca	44	72	2	22.75	14.13	ppb	250	
Ti	47	72	1	0.06	57.77	ppb	2.5	
Ti	47	72	2	0.11	125.59	ppb	2.5	
V	51	72	1	-4.88	-5.49	ppb	2.5	
V	51	72	2	-0.21	-10.69	ppb	2.5	
Cr	52	72	1	-0.09	-12.75	ppb	2.5	
Cr	52	72	2	0.04	44.74	ppb	2.5	
Mn	55	72	1	0.12	24.35	ppb	2.5	
Mn	55	72	2	0.11	36.33	ppb	2.5	
Fe	56	72	1	-2.42	-100.13	ppb	100	
Fe	56	72	2	7.13	4.89	ppb	100	
Co	59	72	1	0.05	3.58	ppb	2.5	
Co	59	72	2	0.06	6.38	ppb	2.5	
Ni	60	72	1	0.08	29.24	ppb	2.5	
Ni	60	72	2	0.08	41.15	ppb	2.5	
Cu	63	72	1	-0.02	-92.44	ppb	2.5	
Cu	63	72	2	-0.02	-180.45	ppb	2.5	
Cu	65	72	1	-0.03	-48.17	ppb	2.5	
Zn	66	72	1	-0.09	-60.06	ppb	2.5	
Zn	66	72	2	-0.10	-16.32	ppb	2.5	
Zn	68	72	1	0.07	26.55	ppb	2.5	
As	75	72	1	-1.98	-6.34	ppb	2.5	
As	75	72	2	0.10	26.55	ppb	2.5	
Se	78	72	1	-1.66	-73.03	ppb	2.5	
Se	78	72	2	0.05	705.11	ppb	2.5	
Se	82	72	1	0.18	93.58	ppb	2.5	
Sr	88	72	1	0.07	33.31	ppb	2.5	
Mo	95	72	1	0.15	2.03	ppb	2.5	
Mo	97	72	1	0.13	5.64	ppb	2.5	
Ag	107	72	1	0.08	6.75	ppb	2.5	
Ag	109	72	1	0.07	2.83	ppb	2.5	
Cd	111	115	1	0.05	23.97	ppb	2.5	
Cd	114	115	1	0.05	21.54	ppb	2.5	
Sn	118	72	1	0.13	4.26	ppb	2.5	
Sn	119	72	1	0.14	12.71	ppb	2.5	
Sb	121	72	1	0.35	8.76	ppb	2.5	
Sb	121	72	2	0.33	5.51	ppb	2.5	
Sb	123	72	1	0.36	6.42	ppb	2.5	
Ba	135	115	1	0.06	31.49	ppb	2.5	
Ba	137	115	1	0.06	3.02	ppb	2.5	
Tl	203	209	1	0.80	12.37	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.75	9.81	ppb	2.5	
Pb	206	209	1	0.09	100.40	ppb	2.5	
Pb	207	209	1	0.08	91.55	ppb	2.5	
Pb	208	209	1	0.08	95.07	ppb	2.5	
U	238	209	1	0.04	3.43	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	483742	1.99	470219	102.9	70	125	
Ge	72	1	3075465	2.38	2998920	102.6	70	125	
Ge	72	2	407307	1.04	398894	102.1	70	125	
In	115	1	3117436	2.00	3039557	102.6	70	125	
Bi	209	1	2875072	1.33	2809191	102.3	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**126CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/24/2017 21:56**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**106CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	101.77	1.98	ppb	100	101.8	90	110	
Na	23	72	2	9890.54	0.47	ppb	10000	98.9	90	110	
Mg	24	72	1	9609.50	1.54	ppb	10000	96.1	90	110	
K	39	72	1	9780.70	1.62	ppb	10000	97.8	90	110	
Cr	52	72	2	98.79	0.39	ppb	100	98.8	90	110	
Mn	55	72	2	99.66	0.37	ppb	100	99.7	90	110	
Fe	56	72	2	9928.77	0.21	ppb	10000	99.3	90	110	
Co	59	72	2	100.19	0.36	ppb	100	100.2	90	110	
Ni	60	72	2	100.77	0.61	ppb	100	100.8	90	110	
Cu	63	72	2	100.92	0.55	ppb	100	100.9	90	110	
Zn	66	72	2	99.89	0.60	ppb	100	99.9	90	110	
As	75	72	2	98.79	0.67	ppb	100	98.8	90	110	
Se	78	72	2	100.86	2.83	ppb	100	100.9	90	110	
Mo	95	72	1	99.13	2.03	ppb	100	99.1	90	110	
Ag	107	72	1	99.16	1.42	ppb	100	99.2	90	110	
Cd	111	115	1	97.38	2.03	ppb	100	97.4	90	110	
Sb	121	72	2	100.54	0.19	ppb	100	100.5	90	110	
Ba	135	115	1	97.87	1.44	ppb	100	97.9	90	110	
Tl	203	209	1	97.87	2.44	ppb	100	97.9	90	110	
Pb	208	209	1	98.67	1.00	ppb	100	98.7	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	389019	0.76	470219	**82.7**	70	125	
Ge	72	1	2865074	1.04	2998920	**95.5**	70	125	
Ge	72	2	380587	0.23	398894	**95.4**	70	125	
In	115	1	2961482	1.09	3039557	**97.4**	70	125	
Bi	209	1	2794466	0.58	2809191	**99.5**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**127CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 22:01**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**106CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.32	7.36	ppb	2.5	
Be	9	6	1	0.13	11.91	ppb	1	
B	11	6	1	5.35	11.75	ppb	5	>2.2*DL
Na	23	72	1	12.96	7.64	ppb	250	
Na	23	72	2	12.44	6.02	ppb	250	
Mg	24	72	1	15.20	9.12	ppb	250	
Al	27	72	1	5.70	31.76	ppb	5	>2.2*DL
P	31	72	1	2.61	16.92	ppb	5	
K	39	72	1	9.24	51.76	ppb	250	
Ca	44	72	1	45.31	22.61	ppb	250	
Ca	44	72	2	66.72	5.43	ppb	250	
Ti	47	72	1	0.21	42.52	ppb	2.5	
Ti	47	72	2	0.23	36.68	ppb	2.5	
V	51	72	1	-6.35	-4.48	ppb	2.5	
V	51	72	2	-0.21	-19.86	ppb	2.5	
Cr	52	72	1	-0.09	-20.54	ppb	2.5	
Cr	52	72	2	0.07	41.26	ppb	2.5	
Mn	55	72	1	0.14	40.30	ppb	2.5	
Mn	55	72	2	0.23	8.52	ppb	2.5	
Fe	56	72	1	2.01	101.65	ppb	100	
Fe	56	72	2	14.90	0.70	ppb	100	
Co	59	72	1	0.07	5.84	ppb	2.5	
Co	59	72	2	0.07	13.59	ppb	2.5	
Ni	60	72	1	0.11	4.26	ppb	2.5	
Ni	60	72	2	0.10	13.81	ppb	2.5	
Cu	63	72	1	0.21	6.23	ppb	2.5	
Cu	63	72	2	0.23	12.15	ppb	2.5	
Cu	65	72	1	0.29	4.79	ppb	2.5	
Zn	66	72	1	0.18	30.53	ppb	2.5	
Zn	66	72	2	-0.01	-818.34	ppb	2.5	
Zn	68	72	1	0.25	33.94	ppb	2.5	
As	75	72	1	-2.57	-5.14	ppb	2.5	
As	75	72	2	0.10	10.42	ppb	2.5	
Se	78	72	1	5.24	13.53	ppb	2.5	>2.2*DL
Se	78	72	2	0.01	557.91	ppb	2.5	
Se	82	72	1	0.08	76.21	ppb	2.5	
Sr	88	72	1	0.13	20.34	ppb	2.5	
Mo	95	72	1	0.15	11.60	ppb	2.5	
Mo	97	72	1	0.14	15.09	ppb	2.5	
Ag	107	72	1	0.07	8.39	ppb	2.5	
Ag	109	72	1	0.07	6.43	ppb	2.5	
Cd	111	115	1	0.08	10.93	ppb	2.5	
Cd	114	115	1	0.06	12.00	ppb	2.5	
Sn	118	72	1	0.12	8.59	ppb	2.5	
Sn	119	72	1	0.13	49.19	ppb	2.5	
Sb	121	72	1	0.36	5.96	ppb	2.5	
Sb	121	72	2	0.34	2.93	ppb	2.5	
Sb	123	72	1	0.36	4.41	ppb	2.5	
Ba	135	115	1	0.12	12.82	ppb	2.5	
Ba	137	115	1	0.14	26.34	ppb	2.5	
Tl	203	209	1	0.64	6.06	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.62	9.41	ppb	2.5	
Pb	206	209	1	0.14	78.61	ppb	2.5	
Pb	207	209	1	0.11	113.90	ppb	2.5	
Pb	208	209	1	0.12	86.13	ppb	2.5	
U	238	209	1	0.05	2.91	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	418088	0.46	470219	88.9	70	125	
Ge	72	1	2846608	0.56	2998920	94.9	70	125	
Ge	72	2	379418	0.27	398894	95.1	70	125	
In	115	1	2917676	0.77	3039557	96.0	70	125	
Bi	209	1	2759969	0.72	2809191	98.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**137CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/24/2017 22:47**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**106CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	105.86	5.84	ppb	100	105.9	90	110	
Na	23	72	2	9864.52	0.43	ppb	10000	98.6	90	110	
Mg	24	72	1	9903.26	5.39	ppb	10000	99.0	90	110	
K	39	72	1	10182.72	5.82	ppb	10000	101.8	90	110	
Cr	52	72	2	98.77	0.40	ppb	100	98.8	90	110	
Mn	55	72	2	101.66	0.54	ppb	100	101.7	90	110	
Fe	56	72	2	9979.02	0.61	ppb	10000	99.8	90	110	
Co	59	72	2	99.84	0.75	ppb	100	99.8	90	110	
Ni	60	72	2	100.25	0.09	ppb	100	100.2	90	110	
Cu	63	72	2	100.45	0.46	ppb	100	100.4	90	110	
Zn	66	72	2	99.18	1.26	ppb	100	99.2	90	110	
As	75	72	2	100.28	0.43	ppb	100	100.3	90	110	
Se	78	72	2	98.50	1.79	ppb	100	98.5	90	110	
Mo	95	72	1	103.98	5.37	ppb	100	104.0	90	110	
Ag	107	72	1	103.48	5.75	ppb	100	103.5	90	110	
Cd	111	115	1	101.88	7.13	ppb	100	101.9	90	110	
Sb	121	72	2	100.65	0.45	ppb	100	100.6	90	110	
Ba	135	115	1	103.06	7.51	ppb	100	103.1	90	110	
Tl	203	209	1	102.12	6.14	ppb	100	102.1	90	110	
Pb	208	209	1	103.26	7.11	ppb	100	103.3	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	370943	5.93	470219	**78.9**	70	125	
Ge	72	1	2831284	5.76	2998920	**94.4**	70	125	
Ge	72	2	383953	0.29	398894	**96.3**	70	125	
In	115	1	2914524	6.44	3039557	**95.9**	70	125	
Bi	209	1	2733250	6.58	2809191	**97.3**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**138CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 22:52**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**106CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.72	10.75	ppb	2.5	
Be	9	6	1	0.18	8.29	ppb	1	
B	11	6	1	5.73	14.79	ppb	5	>2.2*DL
Na	23	72	1	11.75	7.80	ppb	250	
Na	23	72	2	12.17	9.79	ppb	250	
Mg	24	72	1	29.83	3.21	ppb	250	
Al	27	72	1	7.40	27.77	ppb	5	>2.2*DL
P	31	72	1	2.43	41.25	ppb	5	
K	39	72	1	8.19	65.60	ppb	250	
Ca	44	72	1	36.64	37.57	ppb	250	
Ca	44	72	2	60.13	5.41	ppb	250	
Ti	47	72	1	0.19	14.86	ppb	2.5	
Ti	47	72	2	0.19	75.86	ppb	2.5	
V	51	72	1	-6.20	-2.86	ppb	2.5	
V	51	72	2	-0.21	-5.94	ppb	2.5	
Cr	52	72	1	-0.09	-20.40	ppb	2.5	
Cr	52	72	2	0.07	21.58	ppb	2.5	
Mn	55	72	1	0.54	10.23	ppb	2.5	
Mn	55	72	2	0.78	9.58	ppb	2.5	
Fe	56	72	1	22.27	3.61	ppb	100	
Fe	56	72	2	27.85	0.40	ppb	100	
Co	59	72	1	0.10	19.23	ppb	2.5	
Co	59	72	2	0.10	14.52	ppb	2.5	
Ni	60	72	1	0.88	37.20	ppb	2.5	
Ni	60	72	2	0.44	13.68	ppb	2.5	
Cu	63	72	1	0.08	20.23	ppb	2.5	
Cu	63	72	2	0.12	14.16	ppb	2.5	
Cu	65	72	1	0.09	18.91	ppb	2.5	
Zn	66	72	1	0.02	510.05	ppb	2.5	
Zn	66	72	2	-0.02	-489.03	ppb	2.5	
Zn	68	72	1	0.22	39.89	ppb	2.5	
As	75	72	1	-1.93	-6.14	ppb	2.5	
As	75	72	2	0.11	21.42	ppb	2.5	
Se	78	72	1	4.88	15.51	ppb	2.5	>2.2*DL
Se	78	72	2	0.20	58.25	ppb	2.5	
Se	82	72	1	0.06	302.76	ppb	2.5	
Sr	88	72	1	0.14	20.43	ppb	2.5	
Mo	95	72	1	0.17	13.27	ppb	2.5	
Mo	97	72	1	0.16	25.46	ppb	2.5	
Ag	107	72	1	0.07	2.91	ppb	2.5	
Ag	109	72	1	0.07	9.84	ppb	2.5	
Cd	111	115	1	0.06	19.00	ppb	2.5	
Cd	114	115	1	0.05	21.54	ppb	2.5	
Sn	118	72	1	0.11	5.68	ppb	2.5	
Sn	119	72	1	0.11	4.06	ppb	2.5	
Sb	121	72	1	0.34	3.54	ppb	2.5	
Sb	121	72	2	0.31	6.99	ppb	2.5	
Sb	123	72	1	0.35	4.13	ppb	2.5	
Ba	135	115	1	0.14	28.14	ppb	2.5	
Ba	137	115	1	0.14	19.50	ppb	2.5	
Tl	203	209	1	0.63	6.69	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.60	7.76	ppb	2.5	
Pb	206	209	1	0.08	156.34	ppb	2.5	
Pb	207	209	1	0.06	159.36	ppb	2.5	
Pb	208	209	1	0.07	144.19	ppb	2.5	
U	238	209	1	0.05	3.26	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	413337	0.78	470219	87.9	70	125	
Ge	72	1	2902754	0.85	2998920	96.8	70	125	
Ge	72	2	394192	0.67	398894	98.8	70	125	
In	115	1	2994422	1.57	3039557	98.5	70	125	
Bi	209	1	2750401	0.69	2809191	97.9	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**150CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/24/2017 23:48**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**106CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	104.69	1.70	ppb	100	104.7	90	110	
Na	23	72	2	9657.35	0.58	ppb	10000	96.6	90	110	
Mg	24	72	1	9426.90	0.74	ppb	10000	94.3	90	110	
K	39	72	1	9754.23	0.85	ppb	10000	97.5	90	110	
Cr	52	72	2	98.50	0.50	ppb	100	98.5	90	110	
Mn	55	72	2	101.33	0.96	ppb	100	101.3	90	110	
Fe	56	72	2	9983.13	0.65	ppb	10000	99.8	90	110	
Co	59	72	2	99.80	1.37	ppb	100	99.8	90	110	
Ni	60	72	2	99.92	0.88	ppb	100	99.9	90	110	
Cu	63	72	2	98.92	0.89	ppb	100	98.9	90	110	
Zn	66	72	2	99.23	1.72	ppb	100	99.2	90	110	
As	75	72	2	100.17	0.92	ppb	100	100.2	90	110	
Se	78	72	2	99.40	0.72	ppb	100	99.4	90	110	
Mo	95	72	1	98.51	1.08	ppb	100	98.5	90	110	
Ag	107	72	1	98.01	1.09	ppb	100	98.0	90	110	
Cd	111	115	1	97.84	2.18	ppb	100	97.8	90	110	
Sb	121	72	2	101.50	0.82	ppb	100	101.5	90	110	
Ba	135	115	1	99.01	1.65	ppb	100	99.0	90	110	
Tl	203	209	1	97.73	2.47	ppb	100	97.7	90	110	
Pb	208	209	1	98.38	0.47	ppb	100	98.4	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	361796	0.70	470219	**76.9**	70	125	
Ge	72	1	2853563	0.39	2998920	**95.2**	70	125	
Ge	72	2	370743	0.66	398894	**92.9**	70	125	
In	115	1	2919638	1.73	3039557	**96.1**	70	125	
Bi	209	1	2723189	0.67	2809191	**96.9**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**151CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/24/2017 23:52**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**106CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.49	4.88	ppb	2.5	
Be	9	6	1	0.16	15.09	ppb	1	
B	11	6	1	5.71	19.71	ppb	5	>2.2*DL
Na	23	72	1	10.31	13.21	ppb	250	
Na	23	72	2	10.08	5.59	ppb	250	
Mg	24	72	1	48.39	6.46	ppb	250	
Al	27	72	1	5.28	52.16	ppb	5	>2.2*DL
P	31	72	1	3.11	37.33	ppb	5	
K	39	72	1	15.58	13.09	ppb	250	
Ca	44	72	1	22.45	78.81	ppb	250	
Ca	44	72	2	50.31	15.88	ppb	250	
Ti	47	72	1	0.13	11.37	ppb	2.5	
Ti	47	72	2	0.14	36.43	ppb	2.5	
V	51	72	1	-7.79	-0.75	ppb	2.5	
V	51	72	2	-0.22	-4.23	ppb	2.5	
Cr	52	72	1	-0.08	-12.41	ppb	2.5	
Cr	52	72	2	0.07	53.53	ppb	2.5	
Mn	55	72	1	0.34	29.06	ppb	2.5	
Mn	55	72	2	0.46	5.99	ppb	2.5	
Fe	56	72	1	17.63	12.03	ppb	100	
Fe	56	72	2	18.79	0.59	ppb	100	
Co	59	72	1	0.07	5.46	ppb	2.5	
Co	59	72	2	0.08	21.07	ppb	2.5	
Ni	60	72	1	0.18	2.26	ppb	2.5	
Ni	60	72	2	0.18	7.55	ppb	2.5	
Cu	63	72	1	0.04	42.78	ppb	2.5	
Cu	63	72	2	0.05	70.98	ppb	2.5	
Cu	65	72	1	0.04	11.35	ppb	2.5	
Zn	66	72	1	-0.03	-61.38	ppb	2.5	
Zn	66	72	2	-0.08	-76.40	ppb	2.5	
Zn	68	72	1	0.18	37.98	ppb	2.5	
As	75	72	1	-2.42	-6.75	ppb	2.5	
As	75	72	2	0.11	9.34	ppb	2.5	
Se	78	72	1	7.34	5.73	ppb	2.5	>2.2*DL
Se	78	72	2	-0.10	-236.13	ppb	2.5	
Se	82	72	1	0.37	78.42	ppb	2.5	
Sr	88	72	1	0.13	36.96	ppb	2.5	
Mo	95	72	1	0.18	6.68	ppb	2.5	
Mo	97	72	1	0.17	22.32	ppb	2.5	
Ag	107	72	1	0.07	3.02	ppb	2.5	
Ag	109	72	1	0.06	8.12	ppb	2.5	
Cd	111	115	1	0.05	7.97	ppb	2.5	
Cd	114	115	1	0.05	12.47	ppb	2.5	
Sn	118	72	1	0.12	2.55	ppb	2.5	
Sn	119	72	1	0.15	9.41	ppb	2.5	
Sb	121	72	1	0.35	7.00	ppb	2.5	
Sb	121	72	2	0.32	3.38	ppb	2.5	
Sb	123	72	1	0.35	6.80	ppb	2.5	
Ba	135	115	1	0.11	8.06	ppb	2.5	
Ba	137	115	1	0.11	23.59	ppb	2.5	
Tl	203	209	1	0.94	7.24	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.89	7.37	ppb	2.5	
Pb	206	209	1	0.02	689.35	ppb	2.5	
Pb	207	209	1	-0.01	-1570.55	ppb	2.5	
Pb	208	209	1	0.02	721.35	ppb	2.5	
U	238	209	1	0.05	7.17	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	378891	0.39	470219	80.6	70	125	
Ge	72	1	2761747	0.14	2998920	92.1	70	125	
Ge	72	2	361831	0.42	398894	90.7	70	125	
In	115	1	2841978	0.18	3039557	93.5	70	125	
Bi	209	1	2626420	1.74	2809191	93.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	152SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/24/2017 23:57
Sample Name	MBLK-115588	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.460	0.460	13.27
Be	9	6	1	ppb	0.102	0.102	23.83
B	11	6	1	ppb	3.940	3.940	3.00
Na	23	72	1	ppb	3.969	3.969	27.15
Na	23	72	2	ppb	4.178	4.178	8.68
Mg	24	72	1	ppb	58.249	58.249	13.33
Al	27	72	1	ppb	6.962	6.962	31.66
P	31	72	1	ppb	22.700	22.700	3.85
K	39	72	1	ppb	1.809	1.809	94.85
Ca	44	72	1	ppb	0.926	0.926	1784.36
Ca	44	72	2	ppb	25.683	25.683	14.08
Ti	47	72	1	ppb	0.260	0.260	18.00
Ti	47	72	2	ppb	0.073	0.073	175.08
V	51	72	1	ppb	1.712	1.712	33.82
V	51	72	2	ppb	-0.186	-0.186	-21.08
Cr	52	72	1	ppb	0.420	0.420	7.68
Cr	52	72	2	ppb	0.135	0.135	8.10
Mn	55	72	1	ppb	0.415	0.415	11.16
Mn	55	72	2	ppb	0.568	0.568	9.23
Fe	56	72	1	ppb	16.441	16.441	18.37
Fe	56	72	2	ppb	13.734	13.734	3.42
Co	59	72	1	ppb	0.032	0.032	6.71
Co	59	72	2	ppb	0.043	0.043	36.21
Ni	60	72	1	ppb	0.296	0.296	15.77
Ni	60	72	2	ppb	0.308	0.308	18.32
Cu	63	72	1	ppb	0.151	0.151	11.77
Cu	63	72	2	ppb	0.137	0.137	20.13
Cu	65	72	1	ppb	0.136	0.136	10.07
Zn	66	72	1	ppb	1.458	1.458	3.90
Zn	66	72	2	ppb	1.440	1.440	8.43
Zn	68	72	1	ppb	1.517	1.517	2.26
As	75	72	1	ppb	6.147	6.147	5.99
As	75	72	2	ppb	0.066	0.066	13.08
Se	78	72	1	ppb	5.227	5.227	7.33
Se	78	72	2	ppb	0.050	0.050	391.10
Se	82	72	1	ppb	0.180	0.180	34.76
Sr	88	72	1	ppb	0.054	0.054	66.37
Mo	95	72	1	ppb	0.045	0.045	54.63
Mo	97	72	1	ppb	0.010	0.010	272.25
Rh	103	115	1	ppb	20.151	20.151	48.96
Pd	105	115	1	ppb	-2.223	-2.223	-1781.73
Ag	107	72	1	ppb	0.008	0.008	32.68
Ag	109	72	1	ppb	0.013	0.013	58.82
Cd	111	115	1	ppb	0.004	0.004	125.94

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.009	0.009	66.02
Sn	118	72	1	ppb	0.255	0.255	5.99
Sn	119	72	1	ppb	0.269	0.269	4.46
Sb	121	72	1	ppb	0.208	0.208	12.75
Sb	121	72	2	ppb	0.191	0.191	6.22
Sb	123	72	1	ppb	0.213	0.213	16.35
Ba	135	115	1	ppb	0.025	0.025	129.73
Ba	137	115	1	ppb	0.043	0.043	43.92
W	182	209	1	ppb	10.606	10.606	332.82
Pt	195	209	1	ppb	89.271	89.271	325.09
Au	197	209	1	ppb	320.756	320.756	40.10
Tl	203	209	1	ppb	0.433	0.433	20.23
Tl	205	209	1	ppb	0.411	0.411	24.16
Pb	206	209	1	ppb	-0.138	-0.138	-78.66
Pb	207	209	1	ppb	-0.125	-0.125	-67.93
Pb	208	209	1	ppb	-0.128	-0.128	-73.46
U	238	209	1	ppb	0.002	0.002	157.41

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	392,596	0.78	470219	83.5	70	125	
1	Ge	72	2,823,180	1.40	2998920	94.1	70	125	
2	Ge	72	367,305	0.34	398894	92.1	70	125	
1	In	115	2,893,598	1.33	3039557	95.2	70	125	
1	Bi	209	2,678,030	0.70	2809191	95.3	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	153SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 0:02
Sample Name	LCS-115588	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	98.569	98.569	1.54
Be	9	6	1	ppb	104.916	104.916	1.29
B	11	6	1	ppb	480.096	480.096	3.09
Na	23	72	1	ppb	9215.931	9215.931	1.35
Na	23	72	2	ppb	9709.939	9709.939	0.45
Mg	24	72	1	ppb	9333.062	9333.062	1.15
Al	27	72	1	ppb	558.361	558.361	0.74
P	31	72	1	ppb	479.526	479.526	0.68
K	39	72	1	ppb	9686.300	9686.300	1.41
Ca	44	72	1	ppb	9640.858	9640.858	0.59
Ca	44	72	2	ppb	9885.403	9885.403	0.92
Ti	47	72	1	ppb	190.326	190.326	1.67
Ti	47	72	2	ppb	201.562	201.562	1.01
V	51	72	1	ppb	100.839	100.839	2.26
V	51	72	2	ppb	98.761	98.761	1.00
Cr	52	72	1	ppb	96.862	96.862	1.54
Cr	52	72	2	ppb	98.326	98.326	0.72
Mn	55	72	1	ppb	97.618	97.618	2.04
Mn	55	72	2	ppb	99.618	99.618	0.43
Fe	56	72	1	ppb	9859.848	9859.848	1.90
Fe	56	72	2	ppb	10004.226	10004.226	0.31
Co	59	72	1	ppb	99.324	99.324	1.68
Co	59	72	2	ppb	100.217	100.217	0.69
Ni	60	72	1	ppb	97.230	97.230	1.73
Ni	60	72	2	ppb	100.173	100.173	0.78
Cu	63	72	1	ppb	95.631	95.631	1.43
Cu	63	72	2	ppb	100.041	100.041	0.69
Cu	65	72	1	ppb	97.576	97.576	1.85
Zn	66	72	1	ppb	98.960	98.960	1.17
Zn	66	72	2	ppb	99.072	99.072	0.09
Zn	68	72	1	ppb	98.891	98.891	1.74
As	75	72	1	ppb	104.715	104.715	1.96
As	75	72	2	ppb	98.830	98.830	0.43
Se	78	72	1	ppb	102.588	102.588	1.94
Se	78	72	2	ppb	98.373	98.373	1.86
Se	82	72	1	ppb	99.717	99.717	1.48
Sr	88	72	1	ppb	99.785	99.785	2.42
Mo	95	72	1	ppb	100.506	100.506	3.26
Mo	97	72	1	ppb	100.733	100.733	2.26
Rh	103	115	1	ppb	107.658	107.658	4.36
Pd	105	115	1	ppb	218.494	218.494	13.03
Ag	107	72	1	ppb	100.228	100.228	1.86
Ag	109	72	1	ppb	100.975	100.975	1.93
Cd	111	115	1	ppb	97.865	97.865	0.82

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	94.805	94.805	1.26
Sn	118	72	1	ppb	97.738	97.738	2.09
Sn	119	72	1	ppb	100.690	100.690	1.86
Sb	121	72	1	ppb	108.714	108.714	1.70
Sb	121	72	2	ppb	103.456	103.456	0.14
Sb	123	72	1	ppb	108.168	108.168	1.52
Ba	135	115	1	ppb	99.115	99.115	1.47
Ba	137	115	1	ppb	99.427	99.427	2.10
W	182	209	1	ppb	133.736	133.736	17.49
Pt	195	209	1	ppb	-30.185	-30.185	-620.92
Au	197	209	1	ppb	-5.601	-5.601	-2095.06
Tl	203	209	1	ppb	92.194	92.194	4.83
Tl	205	209	1	ppb	92.787	92.787	5.27
Pb	206	209	1	ppb	95.146	95.146	0.67
Pb	207	209	1	ppb	94.975	94.975	0.87
Pb	208	209	1	ppb	97.742	97.742	0.95
U	238	209	1	ppb	100.010	100.010	1.85

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	348,363	0.78	470219	74.1	70	125	
1	Ge	72	2,834,288	0.69	2998920	94.5	70	125	
2	Ge	72	372,496	0.19	398894	93.4	70	125	
1	In	115	2,880,049	0.67	3039557	94.8	70	125	
1	Bi	209	2,699,133	0.46	2809191	96.1	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	156SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 0:16
Sample Name	HS17041053-04	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	114.347	114.347	1.92
Be	9	6	1	ppb	13.344	13.344	2.30
B	11	6	1	ppb	43.387	43.387	2.15
Na	23	72	1	ppb	756.729	756.729	1.95
Na	23	72	2	ppb	784.378	784.378	0.47
Mg	24	72	1	ppb	54757.373	54757.373	0.94
Al	27	72	1	ppb	95610.551	95610.551	0.97
P	31	72	1	ppb	4131.232	4131.232	1.07
K	39	72	1	ppb	23825.375	23825.375	2.27
Ca	44	72	1	ppb	400705.839	400705.839	1.58
Ca	44	72	2	ppb	396579.089	396579.089	0.78
Ti	47	72	1	ppb	1756.096	1756.096	3.46
Ti	47	72	2	ppb	1766.381	1766.381	0.19
V	51	72	1	ppb	190.194	190.194	1.93
V	51	72	2	ppb	200.277	200.277	0.25
Cr	52	72	1	ppb	85.789	85.789	1.96
Cr	52	72	2	ppb	85.880	85.880	0.16
Mn	55	72	1	ppb	2214.570	2214.570	1.95
Mn	55	72	2	ppb	2308.167	2308.167	0.36
Fe	56	72	1	ppb	120155.154	120155.154	2.11
Fe	56	72	2	ppb	119856.918	119856.918	0.79
Co	59	72	1	ppb	45.025	45.025	1.34
Co	59	72	2	ppb	46.346	46.346	0.82
Ni	60	72	1	ppb	95.272	95.272	1.18
Ni	60	72	2	ppb	96.608	96.608	0.36
Cu	63	72	1	ppb	82.223	82.223	1.25
Cu	63	72	2	ppb	84.395	84.395	0.50
Cu	65	72	1	ppb	84.847	84.847	1.29
Zn	66	72	1	ppb	362.325	362.325	1.81
Zn	66	72	2	ppb	360.959	360.959	0.79
Zn	68	72	1	ppb	372.812	372.812	1.41
As	75	72	1	ppb	42.993	42.993	1.61
As	75	72	2	ppb	39.216	39.216	0.50
Se	78	72	1	ppb	6.572	6.572	6.21
Se	78	72	2	ppb	10.495	10.495	4.59
Se	82	72	1	ppb	5.363	5.363	7.60
Sr	88	72	1	ppb	996.457	996.457	1.42
Mo	95	72	1	ppb	4.186	4.186	0.49
Mo	97	72	1	ppb	4.115	4.115	2.77
Rh	103	115	1	ppb	370.856	370.856	5.30
Pd	105	115	1	ppb	5655.946	5655.946	2.53
Ag	107	72	1	ppb	0.403	0.403	5.32
Ag	109	72	1	ppb	0.358	0.358	6.79
Cd	111	115	1	ppb	1.316	1.316	2.85
Cd	114	115	1	ppb	1.379	1.379	1.43
Sn	118	72	1	ppb	6.435	6.435	1.47

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	6.601	6.601	0.80
Sb	121	72	1	ppb	1.270	1.270	3.22
Sb	121	72	2	ppb	1.183	1.183	2.05
Sb	123	72	1	ppb	1.300	1.300	1.71
Ba	135	115	1	ppb	1141.855	1141.855	0.69
Ba	137	115	1	ppb	1135.510	1135.510	0.53
W	182	209	1	ppb	9676.545	9676.545	1.83
Pt	195	209	1	ppb	-716.185	-716.185	-37.28
Au	197	209	1	ppb	-1453.942	-1453.942	-29.29
Tl	203	209	1	ppb	1.342	1.342	9.23
Tl	205	209	1	ppb	1.275	1.275	9.40
Pb	206	209	1	ppb	92.919	92.919	1.24
Pb	207	209	1	ppb	82.189	82.189	1.08
Pb	208	209	1	ppb	90.288	90.288	1.19
U	238	209	1	ppb	4.934	4.934	1.70

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	340,166	0.92	470219	72.3	70	125	
1	Ge	72	2,762,428	0.57	2998920	92.1	70	125	
2	Ge	72	368,372	0.19	398894	92.3	70	125	
1	In	115	2,824,421	0.46	3039557	92.9	70	125	
1	Bi	209	2,695,337	0.47	2809191	95.9	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	157SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 0:20
Sample Name	HS17041053-04SD	**Sample Type**	Sample
Total Dilution	5.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	22.584	112.921	7.17
Be	9	6	1	ppb	2.783	13.913	4.65
B	11	6	1	ppb	8.012	40.061	37.30
Na	23	72	1	ppb	159.023	795.116	6.63
Na	23	72	2	ppb	161.215	806.075	8.25
Mg	24	72	1	ppb	11757.231	58786.154	6.95
Al	27	72	1	ppb	20567.829	102839.144	5.81
P	31	72	1	ppb	872.770	4363.851	5.30
K	39	72	1	ppb	5014.292	25071.459	5.38
Ca	44	72	1	ppb	84319.204	421596.019	5.14
Ca	44	72	2	ppb	81012.847	405064.235	4.04
Ti	47	72	1	ppb	366.552	1832.762	6.10
Ti	47	72	2	ppb	366.242	1831.212	9.02
V	51	72	1	ppb	29.388	146.940	8.75
V	51	72	2	ppb	41.059	205.295	4.72
Cr	52	72	1	ppb	17.302	86.512	0.90
Cr	52	72	2	ppb	17.635	88.176	7.02
Mn	55	72	1	ppb	473.396	2366.982	2.73
Mn	55	72	2	ppb	464.773	2323.866	0.98
Fe	56	72	1	ppb	25490.702	127453.508	4.47
Fe	56	72	2	ppb	24786.738	123933.689	4.32
Co	59	72	1	ppb	9.622	48.111	3.02
Co	59	72	2	ppb	9.645	48.224	10.75
Ni	60	72	1	ppb	20.605	103.026	9.52
Ni	60	72	2	ppb	19.886	99.432	10.07
Cu	63	72	1	ppb	17.528	87.642	2.64
Cu	63	72	2	ppb	17.540	87.698	6.98
Cu	65	72	1	ppb	18.189	90.947	6.61
Zn	66	72	1	ppb	78.012	390.060	5.15
Zn	66	72	2	ppb	75.714	378.569	7.54
Zn	68	72	1	ppb	80.343	401.714	1.64
As	75	72	1	ppb	5.142	25.711	1.25
As	75	72	2	ppb	8.342	41.708	8.67
Se	78	72	1	ppb	4.060	20.300	22.26
Se	78	72	2	ppb	1.866	9.331	89.49
Se	82	72	1	ppb	1.038	5.191	112.33
Sr	88	72	1	ppb	211.279	1056.396	7.21
Mo	95	72	1	ppb	0.891	4.455	37.59
Mo	97	72	1	ppb	0.867	4.335	20.82
Rh	103	115	1	ppb	62.910	314.551	64.97
Pd	105	115	1	ppb	1095.996	5479.979	57.55
Ag	107	72	1	ppb	0.087	0.434	31.71
Ag	109	72	1	ppb	0.087	0.436	31.11
Cd	111	115	1	ppb	0.288	1.442	53.47
Cd	114	115	1	ppb	0.298	1.491	28.37
Sn	118	72	1	ppb	1.332	6.658	6.49
Sn	119	72	1	ppb	1.394	6.969	8.13

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sb	121	72	1	ppb	0.226	1.129	9.90
Sb	121	72	2	ppb	0.227	1.136	34.22
Sb	123	72	1	ppb	0.235	1.177	17.72
Ba	135	115	1	ppb	230.227	1151.135	2.61
Ba	137	115	1	ppb	230.838	1154.192	7.86
W	182	209	1	ppb	2105.212	10526.058	11.31
Pt	195	209	1	ppb	341.792	1708.959	208.37
Au	197	209	1	ppb	-94.369	-471.843	-2817.14
Tl	203	209	1	ppb	0.233	1.163	115.02
Tl	205	209	1	ppb	0.225	1.124	139.11
Pb	206	209	1	ppb	19.441	97.203	12.55
Pb	207	209	1	ppb	17.313	86.567	6.70
Pb	208	209	1	ppb	18.344	91.722	8.77
U	238	209	1	ppb	1.005	5.025	5.21

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	382,804	1.50	470219	81.4	70	125	
1	Ge	72	2,886,068	0.99	2998920	96.2	70	125	
2	Ge	72	379,157	0.54	398894	95.1	70	125	
1	In	115	3,006,945	0.78	3039557	98.9	70	125	
1	Bi	209	2,828,973	2.53	2809191	100.7	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	158SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 0:25
Sample Name	HS17041053-04MS	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	275.847	275.847	1.99
Be	9	6	1	ppb	133.718	133.718	2.62
B	11	6	1	ppb	595.681	595.681	4.74
Na	23	72	1	ppb	9793.181	9793.181	1.22
Na	23	72	2	ppb	10178.877	10178.877	0.52
Mg	24	72	1	ppb	67314.446	67314.446	1.14
Al	27	72	1	ppb	124320.548	124320.548	0.73
P	31	72	1	ppb	4662.478	4662.478	1.29
K	39	72	1	ppb	37272.780	37272.780	0.70
Ca	44	72	1	ppb	408515.363	408515.363	0.23
Ca	44	72	2	ppb	403702.117	403702.117	0.33
Ti	47	72	1	ppb	2436.737	2436.737	1.13
Ti	47	72	2	ppb	2533.306	2533.306	0.75
V	51	72	1	ppb	301.872	301.872	0.26
V	51	72	2	ppb	317.941	317.941	0.29
Cr	52	72	1	ppb	189.321	189.321	0.58
Cr	52	72	2	ppb	191.043	191.043	0.07
Mn	55	72	1	ppb	2388.585	2388.585	0.89
Mn	55	72	2	ppb	2481.975	2481.975	0.32
Fe	56	72	1	ppb	141269.749	141269.749	0.69
Fe	56	72	2	ppb	140786.050	140786.050	0.42
Co	59	72	1	ppb	141.773	141.773	1.52
Co	59	72	2	ppb	142.498	142.498	0.29
Ni	60	72	1	ppb	191.340	191.340	0.70
Ni	60	72	2	ppb	193.766	193.766	0.18
Cu	63	72	1	ppb	180.438	180.438	0.82
Cu	63	72	2	ppb	180.470	180.470	0.46
Cu	65	72	1	ppb	179.301	179.301	0.68
Zn	66	72	1	ppb	507.960	507.960	0.63
Zn	66	72	2	ppb	493.444	493.444	0.24
Zn	68	72	1	ppb	505.846	505.846	0.62
As	75	72	1	ppb	138.142	138.142	0.13
As	75	72	2	ppb	135.014	135.014	0.43
Se	78	72	1	ppb	101.131	101.131	0.65
Se	78	72	2	ppb	102.725	102.725	4.13
Se	82	72	1	ppb	98.504	98.504	0.38
Sr	88	72	1	ppb	1089.584	1089.584	1.58
Mo	95	72	1	ppb	97.629	97.629	0.97
Mo	97	72	1	ppb	97.964	97.964	0.63
Rh	103	115	1	ppb	424.277	424.277	2.74
Pd	105	115	1	ppb	6170.561	6170.561	1.14
Ag	107	72	1	ppb	96.041	96.041	0.84
Ag	109	72	1	ppb	96.891	96.891	1.13
Cd	111	115	1	ppb	96.908	96.908	1.19
Cd	114	115	1	ppb	94.445	94.445	0.99
Sn	118	72	1	ppb	99.258	99.258	0.96
Sn	119	72	1	ppb	102.184	102.184	1.50

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sb	121	72	1	ppb	57.141	57.141	1.22
Sb	121	72	2	ppb	53.224	53.224	0.59
Sb	123	72	1	ppb	56.947	56.947	0.58
Ba	135	115	1	ppb	1331.227	1331.227	1.52
Ba	137	115	1	ppb	1321.425	1321.425	1.13
W	182	209	1	ppb	11724.728	11724.728	3.32
Pt	195	209	1	ppb	-899.274	-899.274	-61.43
Au	197	209	1	ppb	-1846.866	-1846.866	-20.96
Tl	203	209	1	ppb	91.055	91.055	5.39
Tl	205	209	1	ppb	91.648	91.648	5.73
Pb	206	209	1	ppb	199.288	199.288	1.17
Pb	207	209	1	ppb	178.147	178.147	1.37
Pb	208	209	1	ppb	190.981	190.981	1.43
U	238	209	1	ppb	106.558	106.558	1.94

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	301,334	0.81	470219	64.1	70	125	IS Failed
1	Ge	72	2,874,260	0.67	2998920	95.8	70	125	
2	Ge	72	381,624	0.43	398894	95.7	70	125	
1	In	115	2,902,866	0.79	3039557	95.5	70	125	
1	Bi	209	2,709,918	0.10	2809191	96.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	159SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 0:30
Sample Name	HS17041053-04MSD	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	278.170	278.170	1.09
Be	9	6	1	ppb	133.633	133.633	0.96
B	11	6	1	ppb	605.520	605.520	2.89
Na	23	72	1	ppb	9845.608	9845.608	0.89
Na	23	72	2	ppb	10205.157	10205.157	0.75
Mg	24	72	1	ppb	68439.000	68439.000	0.80
Al	27	72	1	ppb	126685.601	126685.601	1.27
P	31	72	1	ppb	4581.323	4581.323	0.96
K	39	72	1	ppb	37435.860	37435.860	0.52
Ca	44	72	1	ppb	418146.525	418146.525	1.18
Ca	44	72	2	ppb	410858.163	410858.163	0.50
Ti	47	72	1	ppb	2413.167	2413.167	1.59
Ti	47	72	2	ppb	2490.456	2490.456	0.65
V	51	72	1	ppb	301.938	301.938	1.57
V	51	72	2	ppb	316.546	316.546	0.53
Cr	52	72	1	ppb	190.771	190.771	1.44
Cr	52	72	2	ppb	194.215	194.215	0.71
Mn	55	72	1	ppb	2492.781	2492.781	1.29
Mn	55	72	2	ppb	2592.384	2592.384	0.71
Fe	56	72	1	ppb	142694.199	142694.199	0.79
Fe	56	72	2	ppb	142343.883	142343.883	0.26
Co	59	72	1	ppb	142.799	142.799	0.77
Co	59	72	2	ppb	144.122	144.122	0.07
Ni	60	72	1	ppb	194.037	194.037	0.45
Ni	60	72	2	ppb	194.635	194.635	0.27
Cu	63	72	1	ppb	182.814	182.814	0.81
Cu	63	72	2	ppb	181.345	181.345	0.67
Cu	65	72	1	ppb	180.658	180.658	0.18
Zn	66	72	1	ppb	505.015	505.015	0.90
Zn	66	72	2	ppb	484.404	484.404	0.18
Zn	68	72	1	ppb	500.187	500.187	0.40
As	75	72	1	ppb	139.972	139.972	1.03
As	75	72	2	ppb	135.744	135.744	0.47
Se	78	72	1	ppb	102.156	102.156	1.93
Se	78	72	2	ppb	99.664	99.664	4.06
Se	82	72	1	ppb	99.999	99.999	0.39
Sr	88	72	1	ppb	1110.654	1110.654	0.47
Mo	95	72	1	ppb	99.496	99.496	0.58
Mo	97	72	1	ppb	99.530	99.530	1.55
Rh	103	115	1	ppb	466.369	466.369	21.04
Pd	105	115	1	ppb	6291.946	6291.946	1.32
Ag	107	72	1	ppb	97.038	97.038	1.18
Ag	109	72	1	ppb	97.436	97.436	1.45
Cd	111	115	1	ppb	97.431	97.431	1.09
Cd	114	115	1	ppb	94.613	94.613	0.98
Sn	118	72	1	ppb	101.240	101.240	0.84
Sn	119	72	1	ppb	103.993	103.993	1.30

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sb	121	72	1	ppb	57.205	57.205	0.55
Sb	121	72	2	ppb	53.181	53.181	0.53
Sb	123	72	1	ppb	57.446	57.446	0.70
Ba	135	115	1	ppb	1356.017	1356.017	1.59
Ba	137	115	1	ppb	1346.515	1346.515	1.65
W	182	209	1	ppb	12582.001	12582.001	0.53
Pt	195	209	1	ppb	-1173.963	-1173.963	-31.96
Au	197	209	1	ppb	-1661.002	-1661.002	-59.03
Tl	203	209	1	ppb	93.336	93.336	4.08
Tl	205	209	1	ppb	92.759	92.759	4.68
Pb	206	209	1	ppb	194.226	194.226	0.96
Pb	207	209	1	ppb	174.020	174.020	1.08
Pb	208	209	1	ppb	186.404	186.404	0.93
U	238	209	1	ppb	106.984	106.984	1.38

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	301,065	0.45	470219	64.0	70	125	IS Failed
1	Ge	72	2,886,352	0.38	2998920	96.2	70	125	
2	Ge	72	381,671	0.16	398894	95.7	70	125	
1	In	115	2,936,129	0.40	3039557	96.6	70	125	
1	Bi	209	2,744,323	0.61	2809191	97.7	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	160SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 0:34
Sample Name	HS17041053-04PDS	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	232.156	232.156	0.43
Be	9	6	1	ppb	122.200	122.200	0.10
B	11	6	1	ppb	1322.570	1322.570	1.37
Na	23	72	1	ppb	9207.851	9207.851	0.75
Na	23	72	2	ppb	9554.448	9554.448	1.09
Mg	24	72	1	ppb	60627.884	60627.884	0.98
Al	27	72	1	ppb	91669.291	91669.291	0.75
P	31	72	1	ppb	4964.717	4964.717	0.28
K	39	72	1	ppb	31759.945	31759.945	0.55
Ca	44	72	1	ppb	389163.894	389163.894	0.30
Ca	44	72	2	ppb	379163.246	379163.246	0.62
Ti	47	72	1	ppb	1868.196	1868.196	1.20
Ti	47	72	2	ppb	1883.301	1883.301	1.32
V	51	72	1	ppb	268.821	268.821	0.95
V	51	72	2	ppb	282.601	282.601	1.09
Cr	52	72	1	ppb	170.797	170.797	1.00
Cr	52	72	2	ppb	171.577	171.577	0.94
Mn	55	72	1	ppb	2216.693	2216.693	0.19
Mn	55	72	2	ppb	2299.055	2299.055	0.67
Fe	56	72	1	ppb	124483.594	124483.594	0.64
Fe	56	72	2	ppb	122942.933	122942.933	0.75
Co	59	72	1	ppb	133.477	133.477	0.76
Co	59	72	2	ppb	133.568	133.568	0.24
Ni	60	72	1	ppb	178.334	178.334	0.90
Ni	60	72	2	ppb	179.890	179.890	1.24
Cu	63	72	1	ppb	170.298	170.298	0.68
Cu	63	72	2	ppb	168.879	168.879	0.38
Cu	65	72	1	ppb	169.304	169.304	0.61
Zn	66	72	1	ppb	451.209	451.209	1.48
Zn	66	72	2	ppb	432.654	432.654	0.65
Zn	68	72	1	ppb	448.775	448.775	1.05
As	75	72	1	ppb	132.357	132.357	0.97
As	75	72	2	ppb	128.670	128.670	1.28
Se	78	72	1	ppb	100.338	100.338	1.18
Se	78	72	2	ppb	99.348	99.348	0.47
Se	82	72	1	ppb	99.006	99.006	1.24
Sr	88	72	1	ppb	1045.454	1045.454	0.50
Mo	95	72	1	ppb	98.431	98.431	0.14
Mo	97	72	1	ppb	99.142	99.142	0.26
Rh	103	115	1	ppb	456.147	456.147	9.97
Pd	105	115	1	ppb	5785.803	5785.803	2.20
Ag	107	72	1	ppb	91.737	91.737	0.53
Ag	109	72	1	ppb	92.026	92.026	0.88
Cd	111	115	1	ppb	92.446	92.446	1.32
Cd	114	115	1	ppb	90.119	90.119	1.05
Sn	118	72	1	ppb	96.320	96.320	0.90
Sn	119	72	1	ppb	98.733	98.733	0.74

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sb	121	72	1	ppb	101.849	101.849	0.83
Sb	121	72	2	ppb	94.886	94.886	0.36
Sb	123	72	1	ppb	101.581	101.581	0.44
Ba	135	115	1	ppb	1196.583	1196.583	1.62
Ba	137	115	1	ppb	1194.264	1194.264	1.06
W	182	209	1	ppb	9990.389	9990.389	1.08
Pt	195	209	1	ppb	-380.613	-380.613	-56.93
Au	197	209	1	ppb	-2040.515	-2040.515	-19.39
Tl	203	209	1	ppb	88.464	88.464	3.47
Tl	205	209	1	ppb	88.245	88.245	3.96
Pb	206	209	1	ppb	189.736	189.736	0.26
Pb	207	209	1	ppb	169.208	169.208	0.70
Pb	208	209	1	ppb	181.366	181.366	0.33
U	238	209	1	ppb	100.197	100.197	0.76

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	307,330	0.72	470219	65.4	70	125	IS Failed
1	Ge	72	2,890,757	1.26	2998920	96.4	70	125	
2	Ge	72	382,405	0.30	398894	95.9	70	125	
1	In	115	2,902,080	1.78	3039557	95.5	70	125	
1	Bi	209	2,744,191	1.12	2809191	97.7	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**161CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/25/2017 0:39**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**106CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	100.43	2.22	ppb	100	100.4	90	110	
Na	23	72	2	9569.92	1.37	ppb	10000	95.7	90	110	
Mg	24	72	1	9039.14	2.13	ppb	10000	90.4	90	110	
K	39	72	1	9429.21	2.41	ppb	10000	94.3	90	110	
Cr	52	72	2	98.38	0.70	ppb	100	98.4	90	110	
Mn	55	72	2	100.00	0.19	ppb	100	100.0	90	110	
Fe	56	72	2	9946.89	0.31	ppb	10000	99.5	90	110	
Co	59	72	2	100.53	0.74	ppb	100	100.5	90	110	
Ni	60	72	2	100.04	1.02	ppb	100	100.0	90	110	
Cu	63	72	2	100.70	0.45	ppb	100	100.7	90	110	
Zn	66	72	2	99.36	1.35	ppb	100	99.4	90	110	
As	75	72	2	100.06	0.22	ppb	100	100.1	90	110	
Se	78	72	2	97.45	2.38	ppb	100	97.5	90	110	
Mo	95	72	1	97.74	2.88	ppb	100	97.7	90	110	
Ag	107	72	1	97.91	2.12	ppb	100	97.9	90	110	
Cd	111	115	1	95.56	2.66	ppb	100	95.6	90	110	
Sb	121	72	2	100.44	0.55	ppb	100	100.4	90	110	
Ba	135	115	1	97.27	2.44	ppb	100	97.3	90	110	
Tl	203	209	1	98.92	2.80	ppb	100	98.9	90	110	
Pb	208	209	1	97.87	1.92	ppb	100	97.9	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	372139	1.60	470219	**79.1**	70	125	
Ge	72	1	3063493	2.01	2998920	**102.2**	70	125	
Ge	72	2	390582	0.39	398894	**97.9**	70	125	
In	115	1	3166269	1.82	3039557	**104.2**	70	125	
Bi	209	1	2926756	1.18	2809191	**104.2**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**162CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/25/2017 0:43**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**106CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.78	19.79	ppb	2.5	
Be	9	6	1	0.20	6.58	ppb	1	
B	11	6	1	8.43	24.60	ppb	5	>2.2*DL
Na	23	72	1	12.25	19.48	ppb	250	
Na	23	72	2	11.34	1.81	ppb	250	
Mg	24	72	1	49.10	12.39	ppb	250	
Al	27	72	1	9.93	49.57	ppb	5	>2.2*DL
P	31	72	1	0.42	554.51	ppb	5	
K	39	72	1	2.36	759.03	ppb	250	
Ca	44	72	1	33.83	70.03	ppb	250	
Ca	44	72	2	48.84	30.55	ppb	250	
Ti	47	72	1	0.72	126.80	ppb	2.5	
Ti	47	72	2	0.04	365.37	ppb	2.5	
V	51	72	1	-8.67	-7.69	ppb	2.5	
V	51	72	2	-0.22	-4.50	ppb	2.5	
Cr	52	72	1	-0.13	-37.79	ppb	2.5	
Cr	52	72	2	0.06	42.74	ppb	2.5	
Mn	55	72	1	0.24	58.27	ppb	2.5	
Mn	55	72	2	0.44	14.64	ppb	2.5	
Fe	56	72	1	17.17	73.66	ppb	100	
Fe	56	72	2	23.43	3.06	ppb	100	
Co	59	72	1	0.08	9.52	ppb	2.5	
Co	59	72	2	0.09	8.87	ppb	2.5	
Ni	60	72	1	0.14	15.40	ppb	2.5	
Ni	60	72	2	0.24	34.71	ppb	2.5	
Cu	63	72	1	0.06	20.85	ppb	2.5	
Cu	63	72	2	0.04	83.66	ppb	2.5	
Cu	65	72	1	0.04	120.64	ppb	2.5	
Zn	66	72	1	-0.01	-863.76	ppb	2.5	
Zn	66	72	2	0.00	472.46	ppb	2.5	
Zn	68	72	1	0.25	30.53	ppb	2.5	
As	75	72	1	-3.20	-30.37	ppb	2.5	
As	75	72	2	0.12	7.32	ppb	2.5	
Se	78	72	1	9.45	45.97	ppb	2.5	>2.2*DL
Se	78	72	2	0.09	272.59	ppb	2.5	
Se	82	72	1	0.19	103.41	ppb	2.5	
Sr	88	72	1	0.16	30.02	ppb	2.5	
Mo	95	72	1	0.18	20.12	ppb	2.5	
Mo	97	72	1	0.20	23.19	ppb	2.5	
Ag	107	72	1	0.09	4.56	ppb	2.5	
Ag	109	72	1	0.08	7.09	ppb	2.5	
Cd	111	115	1	0.07	9.66	ppb	2.5	
Cd	114	115	1	0.07	14.03	ppb	2.5	
Sn	118	72	1	0.18	22.86	ppb	2.5	
Sn	119	72	1	0.20	28.81	ppb	2.5	
Sb	121	72	1	0.33	5.29	ppb	2.5	
Sb	121	72	2	0.30	9.01	ppb	2.5	
Sb	123	72	1	0.34	3.03	ppb	2.5	
Ba	135	115	1	0.17	46.51	ppb	2.5	
Ba	137	115	1	0.17	19.48	ppb	2.5	
Tl	203	209	1	1.39	4.42	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.31	2.10	ppb	2.5	
Pb	206	209	1	0.06	275.15	ppb	2.5	
Pb	207	209	1	0.04	391.19	ppb	2.5	
Pb	208	209	1	0.05	317.20	ppb	2.5	
U	238	209	1	0.05	0.70	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	375629	5.86	470219	79.9	70	125	
Ge	72	1	2819506	5.21	2998920	94.0	70	125	
Ge	72	2	381771	0.48	398894	95.7	70	125	
In	115	1	2903987	6.34	3039557	95.5	70	125	
Bi	209	1	2688556	6.09	2809191	95.7	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	163SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 0:48
Sample Name	HS17041053-01	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	116.667	116.667	1.26
Be	9	6	1	ppb	36.752	36.752	1.98
B	11	6	1	ppb	37.147	37.147	2.21
Na	23	72	1	ppb	464.721	464.721	5.02
Na	23	72	2	ppb	466.430	466.430	2.52
Mg	24	72	1	ppb	19687.022	19687.022	1.29
Al	27	72	1	ppb	91661.018	91661.018	1.85
P	31	72	1	ppb	2867.750	2867.750	1.45
K	39	72	1	ppb	21324.285	21324.285	1.71
Ca	44	72	1	ppb	115687.057	115687.057	1.13
Ca	44	72	2	ppb	113039.714	113039.714	0.63
Ti	47	72	1	ppb	2365.720	2365.720	2.35
Ti	47	72	2	ppb	2439.624	2439.624	1.09
V	51	72	1	ppb	180.308	180.308	2.45
V	51	72	2	ppb	186.432	186.432	0.17
Cr	52	72	1	ppb	79.023	79.023	2.26
Cr	52	72	2	ppb	78.618	78.618	0.45
Mn	55	72	1	ppb	2641.239	2641.239	1.48
Mn	55	72	2	ppb	2720.195	2720.195	0.13
Fe	56	72	1	ppb	153004.897	153004.897	1.79
Fe	56	72	2	ppb	152839.411	152839.411	0.22
Co	59	72	1	ppb	39.630	39.630	1.87
Co	59	72	2	ppb	40.713	40.713	0.68
Ni	60	72	1	ppb	83.979	83.979	1.65
Ni	60	72	2	ppb	84.281	84.281	0.60
Cu	63	72	1	ppb	79.844	79.844	1.75
Cu	63	72	2	ppb	81.333	81.333	0.36
Cu	65	72	1	ppb	82.442	82.442	1.30
Zn	66	72	1	ppb	541.728	541.728	1.82
Zn	66	72	2	ppb	518.453	518.453	0.50
Zn	68	72	1	ppb	534.338	534.338	1.21
As	75	72	1	ppb	36.818	36.818	2.46
As	75	72	2	ppb	37.617	37.617	0.63
Se	78	72	1	ppb	4.945	4.945	17.74
Se	78	72	2	ppb	24.701	24.701	4.91
Se	82	72	1	ppb	13.507	13.507	3.73
Sr	88	72	1	ppb	478.321	478.321	1.89
Mo	95	72	1	ppb	7.812	7.812	1.50
Mo	97	72	1	ppb	7.920	7.920	2.14
Rh	103	115	1	ppb	206.210	206.210	27.28
Pd	105	115	1	ppb	17432.798	17432.798	2.17
Ag	107	72	1	ppb	0.362	0.362	3.94
Ag	109	72	1	ppb	0.386	0.386	2.51
Cd	111	115	1	ppb	1.286	1.286	5.34
Cd	114	115	1	ppb	1.755	1.755	1.44
Sn	118	72	1	ppb	17.390	17.390	1.67

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	18.091	18.091	3.96
Sb	121	72	1	ppb	1.455	1.455	2.67
Sb	121	72	2	ppb	1.341	1.341	2.22
Sb	123	72	1	ppb	1.476	1.476	2.01
Ba	135	115	1	ppb	1360.792	1360.792	1.28
Ba	137	115	1	ppb	1350.519	1350.519	2.04
W	182	209	1	ppb	13995.963	13995.963	3.97
Pt	195	209	1	ppb	-773.661	-773.661	-29.88
Au	197	209	1	ppb	-1864.778	-1864.778	-15.92
Tl	203	209	1	ppb	2.018	2.018	11.45
Tl	205	209	1	ppb	1.919	1.919	11.13
Pb	206	209	1	ppb	118.017	118.017	1.49
Pb	207	209	1	ppb	98.863	98.863	1.56
Pb	208	209	1	ppb	112.394	112.394	1.64
U	238	209	1	ppb	15.435	15.435	0.53

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	349,188	0.96	470219	74.3	70	125	
1	Ge	72	2,950,390	0.48	2998920	98.4	70	125	
2	Ge	72	397,395	0.10	398894	99.6	70	125	
1	In	115	2,983,246	0.71	3039557	98.1	70	125	
1	Bi	209	2,843,604	0.29	2809191	101.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	164SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 0:53
Sample Name	HS17041053-02	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	97.323	97.323	2.39
Be	9	6	1	ppb	35.087	35.087	2.85
B	11	6	1	ppb	30.928	30.928	2.48
Na	23	72	1	ppb	360.311	360.311	3.33
Na	23	72	2	ppb	372.292	372.292	3.87
Mg	24	72	1	ppb	17260.837	17260.837	1.77
Al	27	72	1	ppb	74824.708	74824.708	1.96
P	31	72	1	ppb	2871.685	2871.685	1.60
K	39	72	1	ppb	23829.948	23829.948	0.59
Ca	44	72	1	ppb	68084.355	68084.355	2.17
Ca	44	72	2	ppb	66554.848	66554.848	1.12
Ti	47	72	1	ppb	2110.005	2110.005	2.21
Ti	47	72	2	ppb	2172.468	2172.468	1.00
V	51	72	1	ppb	154.548	154.548	3.16
V	51	72	2	ppb	149.000	149.000	0.56
Cr	52	72	1	ppb	61.042	61.042	2.10
Cr	52	72	2	ppb	61.705	61.705	1.20
Mn	55	72	1	ppb	2627.294	2627.294	1.87
Mn	55	72	2	ppb	2695.803	2695.803	0.81
Fe	56	72	1	ppb	136967.602	136967.602	1.51
Fe	56	72	2	ppb	133452.133	133452.133	0.79
Co	59	72	1	ppb	33.778	33.778	1.60
Co	59	72	2	ppb	34.137	34.137	0.92
Ni	60	72	1	ppb	65.970	65.970	1.61
Ni	60	72	2	ppb	65.510	65.510	1.17
Cu	63	72	1	ppb	131.213	131.213	3.56
Cu	63	72	2	ppb	129.508	129.508	0.46
Cu	65	72	1	ppb	131.239	131.239	1.69
Zn	66	72	1	ppb	584.531	584.531	2.17
Zn	66	72	2	ppb	557.291	557.291	0.89
Zn	68	72	1	ppb	586.420	586.420	1.06
As	75	72	1	ppb	43.634	43.634	3.71
As	75	72	2	ppb	41.174	41.174	0.56
Se	78	72	1	ppb	4.927	4.927	7.66
Se	78	72	2	ppb	23.750	23.750	6.00
Se	82	72	1	ppb	13.218	13.218	2.48
Sr	88	72	1	ppb	240.349	240.349	1.93
Mo	95	72	1	ppb	7.390	7.390	1.88
Mo	97	72	1	ppb	7.529	7.529	1.97
Rh	103	115	1	ppb	186.400	186.400	19.71
Pd	105	115	1	ppb	16594.231	16594.231	2.33
Ag	107	72	1	ppb	0.419	0.419	3.74
Ag	109	72	1	ppb	0.472	0.472	4.59
Cd	111	115	1	ppb	2.777	2.777	3.97
Cd	114	115	1	ppb	3.135	3.135	3.53
Sn	118	72	1	ppb	17.360	17.360	2.03

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	17.639	17.639	1.73
Sb	121	72	1	ppb	1.569	1.569	4.05
Sb	121	72	2	ppb	1.485	1.485	0.01
Sb	123	72	1	ppb	1.596	1.596	3.74
Ba	135	115	1	ppb	941.247	941.247	1.76
Ba	137	115	1	ppb	936.047	936.047	2.00
W	182	209	1	ppb	14546.629	14546.629	2.46
Pt	195	209	1	ppb	-674.597	-674.597	-22.81
Au	197	209	1	ppb	-1592.392	-1592.392	-27.91
Tl	203	209	1	ppb	1.624	1.624	9.96
Tl	205	209	1	ppb	1.544	1.544	10.09
Pb	206	209	1	ppb	166.378	166.378	1.76
Pb	207	209	1	ppb	137.162	137.162	0.83
Pb	208	209	1	ppb	154.447	154.447	1.35
U	238	209	1	ppb	12.161	12.161	1.37

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	370,355	0.28	470219	78.8	70	125	
1	Ge	72	3,071,358	1.36	2998920	102.4	70	125	
2	Ge	72	410,561	1.08	398894	102.9	70	125	
1	In	115	3,071,621	0.30	3039557	101.1	70	125	
1	Bi	209	2,877,360	0.97	2809191	102.4	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	165SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 0:58
Sample Name	HS17041053-03	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	107.472	107.472	0.65
Be	9	6	1	ppb	34.182	34.182	1.35
B	11	6	1	ppb	31.496	31.496	0.11
Na	23	72	1	ppb	414.440	414.440	2.60
Na	23	72	2	ppb	417.242	417.242	0.62
Mg	24	72	1	ppb	17946.070	17946.070	1.76
Al	27	72	1	ppb	85444.273	85444.273	1.28
P	31	72	1	ppb	2620.487	2620.487	1.36
K	39	72	1	ppb	19310.149	19310.149	1.56
Ca	44	72	1	ppb	99905.805	99905.805	1.73
Ca	44	72	2	ppb	96750.677	96750.677	0.40
Ti	47	72	1	ppb	2196.531	2196.531	1.23
Ti	47	72	2	ppb	2245.196	2245.196	0.65
V	51	72	1	ppb	171.259	171.259	1.64
V	51	72	2	ppb	168.206	168.206	0.28
Cr	52	72	1	ppb	73.284	73.284	0.96
Cr	52	72	2	ppb	71.611	71.611	0.89
Mn	55	72	1	ppb	2518.576	2518.576	1.61
Mn	55	72	2	ppb	2604.604	2604.604	0.72
Fe	56	72	1	ppb	142387.663	142387.663	1.76
Fe	56	72	2	ppb	139451.383	139451.383	0.75
Co	59	72	1	ppb	37.595	37.595	1.66
Co	59	72	2	ppb	37.958	37.958	0.67
Ni	60	72	1	ppb	77.924	77.924	1.71
Ni	60	72	2	ppb	77.803	77.803	0.96
Cu	63	72	1	ppb	71.647	71.647	1.08
Cu	63	72	2	ppb	72.205	72.205	0.80
Cu	65	72	1	ppb	74.088	74.088	2.15
Zn	66	72	1	ppb	492.741	492.741	2.32
Zn	66	72	2	ppb	463.593	463.593	0.65
Zn	68	72	1	ppb	487.487	487.487	1.89
As	75	72	1	ppb	35.946	35.946	1.47
As	75	72	2	ppb	36.093	36.093	0.39
Se	78	72	1	ppb	5.524	5.524	18.65
Se	78	72	2	ppb	26.423	26.423	1.53
Se	82	72	1	ppb	13.375	13.375	2.54
Sr	88	72	1	ppb	424.565	424.565	1.74
Mo	95	72	1	ppb	7.816	7.816	1.76
Mo	97	72	1	ppb	7.893	7.893	3.27
Rh	103	115	1	ppb	193.230	193.230	12.36
Pd	105	115	1	ppb	16635.697	16635.697	1.88
Ag	107	72	1	ppb	0.324	0.324	5.98
Ag	109	72	1	ppb	0.349	0.349	0.65
Cd	111	115	1	ppb	1.156	1.156	5.53
Cd	114	115	1	ppb	1.586	1.586	0.50
Sn	118	72	1	ppb	16.419	16.419	2.89

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	16.845	16.845	4.04
Sb	121	72	1	ppb	1.186	1.186	2.77
Sb	121	72	2	ppb	1.067	1.067	3.08
Sb	123	72	1	ppb	1.206	1.206	2.65
Ba	135	115	1	ppb	1311.502	1311.502	1.43
Ba	137	115	1	ppb	1305.411	1305.411	1.37
W	182	209	1	ppb	13750.519	13750.519	4.40
Pt	195	209	1	ppb	-368.753	-368.753	-7.36
Au	197	209	1	ppb	-1478.665	-1478.665	-39.37
Tl	203	209	1	ppb	1.490	1.490	8.28
Tl	205	209	1	ppb	1.406	1.406	9.10
Pb	206	209	1	ppb	107.479	107.479	1.59
Pb	207	209	1	ppb	89.620	89.620	1.35
Pb	208	209	1	ppb	102.647	102.647	1.47
U	238	209	1	ppb	14.806	14.806	1.66

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	359,199	0.26	470219	76.4	70	125	
1	Ge	72	3,027,603	0.84	2998920	101.0	70	125	
2	Ge	72	404,370	0.18	398894	101.4	70	125	
1	In	115	3,007,501	0.26	3039557	98.9	70	125	
1	Bi	209	2,814,143	0.22	2809191	100.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	166SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 1:02
Sample Name	HS17041053-05	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	83.782	83.782	1.48
Be	9	6	1	ppb	11.574	11.574	0.99
B	11	6	1	ppb	31.590	31.590	2.87
Na	23	72	1	ppb	429.458	429.458	1.45
Na	23	72	2	ppb	456.537	456.537	1.33
Mg	24	72	1	ppb	50269.680	50269.680	1.78
Al	27	72	1	ppb	73638.826	73638.826	1.36
P	31	72	1	ppb	3450.798	3450.798	1.47
K	39	72	1	ppb	19303.719	19303.719	1.80
Ca	44	72	1	ppb	453193.038	453193.038	1.96
Ca	44	72	2	ppb	450364.031	450364.031	0.29
Ti	47	72	1	ppb	1488.107	1488.107	1.28
Ti	47	72	2	ppb	1493.481	1493.481	0.08
V	51	72	1	ppb	160.262	160.262	2.33
V	51	72	2	ppb	173.432	173.432	0.76
Cr	52	72	1	ppb	61.754	61.754	2.23
Cr	52	72	2	ppb	63.972	63.972	0.39
Mn	55	72	1	ppb	1723.783	1723.783	1.56
Mn	55	72	2	ppb	1811.582	1811.582	1.20
Fe	56	72	1	ppb	106495.315	106495.315	1.64
Fe	56	72	2	ppb	106706.696	106706.696	0.58
Co	59	72	1	ppb	39.007	39.007	1.58
Co	59	72	2	ppb	39.978	39.978	0.32
Ni	60	72	1	ppb	80.530	80.530	1.49
Ni	60	72	2	ppb	80.610	80.610	1.23
Cu	63	72	1	ppb	73.120	73.120	1.72
Cu	63	72	2	ppb	75.521	75.521	0.68
Cu	65	72	1	ppb	75.857	75.857	2.22
Zn	66	72	1	ppb	312.350	312.350	1.08
Zn	66	72	2	ppb	310.225	310.225	0.37
Zn	68	72	1	ppb	319.543	319.543	1.33
As	75	72	1	ppb	40.778	40.778	1.50
As	75	72	2	ppb	37.650	37.650	0.43
Se	78	72	1	ppb	7.081	7.081	7.02
Se	78	72	2	ppb	8.929	8.929	8.23
Se	82	72	1	ppb	4.979	4.979	4.24
Sr	88	72	1	ppb	766.241	766.241	1.33
Mo	95	72	1	ppb	3.421	3.421	2.64
Mo	97	72	1	ppb	3.528	3.528	2.11
Rh	103	115	1	ppb	287.289	287.289	5.41
Pd	105	115	1	ppb	5043.794	5043.794	4.95
Ag	107	72	1	ppb	0.296	0.296	2.90
Ag	109	72	1	ppb	0.317	0.317	2.45
Cd	111	115	1	ppb	1.085	1.085	6.34
Cd	114	115	1	ppb	1.205	1.205	4.08
Sn	118	72	1	ppb	6.613	6.613	0.86

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	6.730	6.730	2.31
Sb	121	72	1	ppb	0.923	0.923	2.35
Sb	121	72	2	ppb	0.848	0.848	0.34
Sb	123	72	1	ppb	0.937	0.937	2.43
Ba	135	115	1	ppb	924.665	924.665	1.12
Ba	137	115	1	ppb	916.589	916.589	1.50
W	182	209	1	ppb	10680.037	10680.037	1.42
Pt	195	209	1	ppb	-401.066	-401.066	-64.44
Au	197	209	1	ppb	-1224.048	-1224.048	-41.28
Tl	203	209	1	ppb	0.985	0.985	8.36
Tl	205	209	1	ppb	0.947	0.947	10.34
Pb	206	209	1	ppb	66.392	66.392	0.89
Pb	207	209	1	ppb	58.392	58.392	0.85
Pb	208	209	1	ppb	62.313	62.313	0.99
U	238	209	1	ppb	3.953	3.953	1.19

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	347,542	0.65	470219	73.9	70	125	
1	Ge	72	2,849,896	0.34	2998920	95.0	70	125	
2	Ge	72	378,178	0.37	398894	94.8	70	125	
1	In	115	2,896,952	0.37	3039557	95.3	70	125	
1	Bi	209	2,732,241	0.25	2809191	97.3	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	167SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 1:07
Sample Name	HS17041053-06	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	84.066	84.066	0.46
Be	9	6	1	ppb	19.013	19.013	0.96
B	11	6	1	ppb	40.591	40.591	0.79
Na	23	72	1	ppb	527.223	527.223	1.53
Na	23	72	2	ppb	537.640	537.640	1.39
Mg	24	72	1	ppb	30476.601	30476.601	2.22
Al	27	72	1	ppb	66471.290	66471.290	1.96
P	31	72	1	ppb	2451.627	2451.627	1.62
K	39	72	1	ppb	25542.224	25542.224	1.76
Ca	44	72	1	ppb	54024.961	54024.961	1.91
Ca	44	72	2	ppb	52590.830	52590.830	0.70
Ti	47	72	1	ppb	2513.294	2513.294	1.85
Ti	47	72	2	ppb	2602.837	2602.837	0.43
V	51	72	1	ppb	174.535	174.535	1.24
V	51	72	2	ppb	175.686	175.686	0.30
Cr	52	72	1	ppb	83.800	83.800	2.22
Cr	52	72	2	ppb	82.672	82.672	0.72
Mn	55	72	1	ppb	3246.870	3246.870	2.13
Mn	55	72	2	ppb	3333.817	3333.817	0.48
Fe	56	72	1	ppb	131805.105	131805.105	2.58
Fe	56	72	2	ppb	129253.748	129253.748	0.10
Co	59	72	1	ppb	47.170	47.170	2.04
Co	59	72	2	ppb	47.646	47.646	0.86
Ni	60	72	1	ppb	90.163	90.163	2.41
Ni	60	72	2	ppb	90.383	90.383	0.79
Cu	63	72	1	ppb	124.071	124.071	2.33
Cu	63	72	2	ppb	125.237	125.237	0.62
Cu	65	72	1	ppb	127.745	127.745	2.52
Zn	66	72	1	ppb	917.697	917.697	2.76
Zn	66	72	2	ppb	882.537	882.537	0.56
Zn	68	72	1	ppb	923.235	923.235	2.04
As	75	72	1	ppb	59.492	59.492	2.21
As	75	72	2	ppb	55.946	55.946	0.38
Se	78	72	1	ppb	6.301	6.301	41.05
Se	78	72	2	ppb	9.404	9.404	0.21
Se	82	72	1	ppb	6.222	6.222	9.08
Sr	88	72	1	ppb	198.892	198.892	2.29
Mo	95	72	1	ppb	6.019	6.019	1.33
Mo	97	72	1	ppb	6.150	6.150	0.65
Rh	103	115	1	ppb	174.688	174.688	18.94
Pd	105	115	1	ppb	5906.443	5906.443	1.82
Ag	107	72	1	ppb	0.657	0.657	3.34
Ag	109	72	1	ppb	0.656	0.656	1.57
Cd	111	115	1	ppb	2.918	2.918	2.34
Cd	114	115	1	ppb	3.145	3.145	3.35
Sn	118	72	1	ppb	10.977	10.977	3.85

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	10.995	10.995	3.61
Sb	121	72	1	ppb	1.594	1.594	2.70
Sb	121	72	2	ppb	1.478	1.478	2.90
Sb	123	72	1	ppb	1.597	1.597	1.11
Ba	135	115	1	ppb	863.965	863.965	1.06
Ba	137	115	1	ppb	854.404	854.404	1.20
W	182	209	1	ppb	13827.551	13827.551	0.50
Pt	195	209	1	ppb	-394.296	-394.296	-72.48
Au	197	209	1	ppb	-1283.794	-1283.794	-67.95
Tl	203	209	1	ppb	1.413	1.413	6.58
Tl	205	209	1	ppb	1.340	1.340	5.88
Pb	206	209	1	ppb	192.222	192.222	2.36
Pb	207	209	1	ppb	163.178	163.178	1.61
Pb	208	209	1	ppb	179.891	179.891	2.00
U	238	209	1	ppb	5.131	5.131	1.33

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	361,266	2.44	470219	76.8	70	125	
1	Ge	72	2,976,575	3.62	2998920	99.3	70	125	
2	Ge	72	400,302	0.23	398894	100.4	70	125	
1	In	115	2,973,734	2.26	3039557	97.8	70	125	
1	Bi	209	2,783,055	2.42	2809191	99.1	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	168SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 1:12
Sample Name	HS17041053-07	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	101.642	101.642	6.32
Be	9	6	1	ppb	17.283	17.283	6.92
B	11	6	1	ppb	34.159	34.159	7.87
Na	23	72	1	ppb	612.907	612.907	5.80
Na	23	72	2	ppb	605.796	605.796	1.18
Mg	24	72	1	ppb	37386.487	37386.487	6.54
Al	27	72	1	ppb	67149.293	67149.293	6.73
P	31	72	1	ppb	3428.988	3428.988	7.21
K	39	72	1	ppb	21105.682	21105.682	6.49
Ca	44	72	1	ppb	183805.421	183805.421	6.55
Ca	44	72	2	ppb	174230.599	174230.599	0.39
Ti	47	72	1	ppb	2803.104	2803.104	6.99
Ti	47	72	2	ppb	2768.634	2768.634	0.98
V	51	72	1	ppb	182.669	182.669	7.58
V	51	72	2	ppb	184.411	184.411	0.77
Cr	52	72	1	ppb	85.248	85.248	7.25
Cr	52	72	2	ppb	81.140	81.140	0.67
Mn	55	72	1	ppb	7124.801	7124.801	6.51
Mn	55	72	2	ppb	7031.155	7031.155	0.82
Fe	56	72	1	ppb	145133.041	145133.041	6.82
Fe	56	72	2	ppb	137948.737	137948.737	0.47
Co	59	72	1	ppb	58.111	58.111	6.41
Co	59	72	2	ppb	57.376	57.376	0.52
Ni	60	72	1	ppb	98.608	98.608	6.72
Ni	60	72	2	ppb	95.955	95.955	0.07
Cu	63	72	1	ppb	126.968	126.968	6.04
Cu	63	72	2	ppb	125.167	125.167	0.08
Cu	65	72	1	ppb	131.666	131.666	6.71
Zn	66	72	1	ppb	1035.167	1035.167	7.24
Zn	66	72	2	ppb	962.120	962.120	0.20
Zn	68	72	1	ppb	1053.208	1053.208	6.57
As	75	72	1	ppb	70.198	70.198	8.69
As	75	72	2	ppb	64.666	64.666	1.48
Se	78	72	1	ppb	8.804	8.804	58.03
Se	78	72	2	ppb	11.320	11.320	4.58
Se	82	72	1	ppb	7.104	7.104	9.64
Sr	88	72	1	ppb	381.618	381.618	6.79
Mo	95	72	1	ppb	61.927	61.927	6.94
Mo	97	72	1	ppb	62.021	62.021	6.18
Rh	103	115	1	ppb	254.789	254.789	11.35
Pd	105	115	1	ppb	6645.942	6645.942	5.92
Ag	107	72	1	ppb	0.753	0.753	5.79
Ag	109	72	1	ppb	0.775	0.775	4.33
Cd	111	115	1	ppb	4.049	4.049	6.34
Cd	114	115	1	ppb	4.238	4.238	6.56
Sn	118	72	1	ppb	13.123	13.123	7.27

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	13.122	13.122	6.11
Sb	121	72	1	ppb	1.258	1.258	5.49
Sb	121	72	2	ppb	1.104	1.104	1.19
Sb	123	72	1	ppb	1.286	1.286	8.37
Ba	135	115	1	ppb	1827.183	1827.183	6.62
Ba	137	115	1	ppb	1807.940	1807.940	7.13
W	182	209	1	ppb	19567.368	19567.368	6.40
Pt	195	209	1	ppb	-189.311	-189.311	-150.90
Au	197	209	1	ppb	-1444.013	-1444.013	-34.36
Tl	203	209	1	ppb	2.048	2.048	3.88
Tl	205	209	1	ppb	1.937	1.937	3.55
Pb	206	209	1	ppb	232.341	232.341	6.68
Pb	207	209	1	ppb	212.044	212.044	7.63
Pb	208	209	1	ppb	221.642	221.642	7.25
U	238	209	1	ppb	5.763	5.763	6.84

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	333,853	7.29	470219	71.0	70	125	
1	Ge	72	2,845,466	7.48	2998920	94.9	70	125	
2	Ge	72	390,328	0.26	398894	97.9	70	125	
1	In	115	2,861,448	7.64	3039557	94.1	70	125	
1	Bi	209	2,682,686	8.02	2809191	95.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**169CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/25/2017 1:16**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**106CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	102.89	1.63	ppb	100	102.9	90	110	
Na	23	72	2	9473.39	1.07	ppb	10000	94.7	90	110	
Mg	24	72	1	9289.13	2.94	ppb	10000	92.9	90	110	
K	39	72	1	9740.12	3.48	ppb	10000	97.4	90	110	
Cr	52	72	2	98.69	0.44	ppb	100	98.7	90	110	
Mn	55	72	2	103.59	0.55	ppb	100	103.6	90	110	
Fe	56	72	2	9974.92	0.63	ppb	10000	99.7	90	110	
Co	59	72	2	99.79	0.71	ppb	100	99.8	90	110	
Ni	60	72	2	99.16	0.70	ppb	100	99.2	90	110	
Cu	63	72	2	99.34	0.68	ppb	100	99.3	90	110	
Zn	66	72	2	98.22	0.47	ppb	100	98.2	90	110	
As	75	72	2	100.03	0.55	ppb	100	100.0	90	110	
Se	78	72	2	99.71	3.28	ppb	100	99.7	90	110	
Mo	95	72	1	100.42	3.02	ppb	100	100.4	90	110	
Ag	107	72	1	100.48	2.56	ppb	100	100.5	90	110	
Cd	111	115	1	99.55	3.38	ppb	100	99.6	90	110	
Sb	121	72	2	99.46	0.46	ppb	100	99.5	90	110	
Ba	135	115	1	101.15	2.72	ppb	100	101.2	90	110	
Tl	203	209	1	100.86	2.75	ppb	100	100.9	90	110	
Pb	208	209	1	101.80	3.76	ppb	100	101.8	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	358924	2.27	470219	**76.3**	70	125	
Ge	72	1	2992787	3.33	2998920	**99.8**	70	125	
Ge	72	2	395528	0.53	398894	**99.2**	70	125	
In	115	1	3059219	2.89	3039557	**100.6**	70	125	
Bi	209	1	2804033	3.83	2809191	**99.8**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**170CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/25/2017 1:21**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**106CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.63	11.45	ppb	2.5	
Be	9	6	1	0.16	6.21	ppb	1	
B	11	6	1	4.92	5.63	ppb	5	
Na	23	72	1	9.19	12.57	ppb	250	
Na	23	72	2	9.13	9.23	ppb	250	
Mg	24	72	1	41.31	5.93	ppb	250	
Al	27	72	1	8.62	20.87	ppb	5	>2.2*DL
P	31	72	1	-2.00	-123.31	ppb	5	
K	39	72	1	1.84	2036.22	ppb	250	
Ca	44	72	1	27.00	44.29	ppb	250	
Ca	44	72	2	47.62	0.20	ppb	250	
Ti	47	72	1	0.34	20.15	ppb	2.5	
Ti	47	72	2	0.35	92.07	ppb	2.5	
V	51	72	1	-6.79	-23.16	ppb	2.5	
V	51	72	2	-0.19	-22.80	ppb	2.5	
Cr	52	72	1	-0.15	-98.00	ppb	2.5	
Cr	52	72	2	0.07	18.57	ppb	2.5	
Mn	55	72	1	0.40	21.87	ppb	2.5	
Mn	55	72	2	0.66	6.35	ppb	2.5	
Fe	56	72	1	2.33	477.45	ppb	100	
Fe	56	72	2	24.31	5.16	ppb	100	
Co	59	72	1	0.07	8.14	ppb	2.5	
Co	59	72	2	0.09	21.32	ppb	2.5	
Ni	60	72	1	0.11	6.82	ppb	2.5	
Ni	60	72	2	0.12	33.59	ppb	2.5	
Cu	63	72	1	0.03	90.14	ppb	2.5	
Cu	63	72	2	0.02	162.00	ppb	2.5	
Cu	65	72	1	-0.01	-324.49	ppb	2.5	
Zn	66	72	1	0.05	115.68	ppb	2.5	
Zn	66	72	2	-0.07	-72.36	ppb	2.5	
Zn	68	72	1	0.22	13.97	ppb	2.5	
As	75	72	1	-2.63	-43.35	ppb	2.5	
As	75	72	2	0.11	9.03	ppb	2.5	
Se	78	72	1	9.80	60.97	ppb	2.5	>2.2*DL
Se	78	72	2	0.04	205.17	ppb	2.5	
Se	82	72	1	0.19	116.48	ppb	2.5	
Sr	88	72	1	0.16	14.32	ppb	2.5	
Mo	95	72	1	0.18	15.03	ppb	2.5	
Mo	97	72	1	0.15	15.82	ppb	2.5	
Ag	107	72	1	0.08	16.50	ppb	2.5	
Ag	109	72	1	0.08	16.60	ppb	2.5	
Cd	111	115	1	0.07	4.89	ppb	2.5	
Cd	114	115	1	0.07	2.46	ppb	2.5	
Sn	118	72	1	0.14	24.72	ppb	2.5	
Sn	119	72	1	0.15	18.37	ppb	2.5	
Sb	121	72	1	0.29	22.52	ppb	2.5	
Sb	121	72	2	0.26	4.77	ppb	2.5	
Sb	123	72	1	0.30	19.24	ppb	2.5	
Ba	135	115	1	0.15	24.64	ppb	2.5	
Ba	137	115	1	0.18	18.62	ppb	2.5	
Tl	203	209	1	0.71	12.20	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.67	10.99	ppb	2.5	
Pb	206	209	1	-0.01	-1460.21	ppb	2.5	
Pb	207	209	1	-0.02	-342.62	ppb	2.5	
Pb	208	209	1	-0.01	-1273.75	ppb	2.5	
U	238	209	1	0.05	6.32	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	369065	7.71	470219	78.5	70	125	
Ge	72	1	2820008	7.15	2998920	94.0	70	125	
Ge	72	2	376501	0.10	398894	94.4	70	125	
In	115	1	2920107	7.67	3039557	96.1	70	125	
Bi	209	1	2718626	6.03	2809191	96.8	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	171SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 1:26
Sample Name	HS17041053-08	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	70.273	70.273	7.75
Be	9	6	1	ppb	11.431	11.431	7.86
B	11	6	1	ppb	38.796	38.796	7.38
Na	23	72	1	ppb	330.566	330.566	11.11
Na	23	72	2	ppb	322.760	322.760	1.39
Mg	24	72	1	ppb	21765.685	21765.685	9.88
Al	27	72	1	ppb	84309.532	84309.532	9.13
P	31	72	1	ppb	2811.853	2811.853	9.35
K	39	72	1	ppb	32183.047	32183.047	8.56
Ca	44	72	1	ppb	25220.246	25220.246	8.68
Ca	44	72	2	ppb	23967.347	23967.347	1.03
Ti	47	72	1	ppb	1951.127	1951.127	9.03
Ti	47	72	2	ppb	1939.514	1939.514	1.17
V	51	72	1	ppb	223.516	223.516	10.34
V	51	72	2	ppb	208.483	208.483	1.07
Cr	52	72	1	ppb	104.963	104.963	9.70
Cr	52	72	2	ppb	97.723	97.723	0.76
Mn	55	72	1	ppb	2688.370	2688.370	9.06
Mn	55	72	2	ppb	2634.685	2634.685	1.03
Fe	56	72	1	ppb	133861.617	133861.617	9.32
Fe	56	72	2	ppb	125097.847	125097.847	0.41
Co	59	72	1	ppb	54.052	54.052	8.76
Co	59	72	2	ppb	51.772	51.772	0.75
Ni	60	72	1	ppb	97.657	97.657	9.16
Ni	60	72	2	ppb	91.817	91.817	0.68
Cu	63	72	1	ppb	140.102	140.102	9.85
Cu	63	72	2	ppb	129.542	129.542	0.48
Cu	65	72	1	ppb	139.457	139.457	9.64
Zn	66	72	1	ppb	396.282	396.282	9.16
Zn	66	72	2	ppb	369.338	369.338	0.41
Zn	68	72	1	ppb	403.949	403.949	9.50
As	75	72	1	ppb	60.380	60.380	11.74
As	75	72	2	ppb	52.942	52.942	0.42
Se	78	72	1	ppb	9.695	9.695	69.82
Se	78	72	2	ppb	10.469	10.469	5.21
Se	82	72	1	ppb	5.401	5.401	18.86
Sr	88	72	1	ppb	283.794	283.794	8.95
Mo	95	72	1	ppb	3.834	3.834	8.60
Mo	97	72	1	ppb	3.832	3.832	10.43
Rh	103	115	1	ppb	194.698	194.698	5.02
Pd	105	115	1	ppb	4564.368	4564.368	12.81
Ag	107	72	1	ppb	0.533	0.533	13.70
Ag	109	72	1	ppb	0.508	0.508	8.44
Cd	111	115	1	ppb	2.187	2.187	8.91
Cd	114	115	1	ppb	2.262	2.262	10.90
Sn	118	72	1	ppb	6.508	6.508	8.45

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	6.423	6.423	8.93
Sb	121	72	1	ppb	2.198	2.198	9.44
Sb	121	72	2	ppb	1.957	1.957	3.66
Sb	123	72	1	ppb	2.227	2.227	8.81
Ba	135	115	1	ppb	843.511	843.511	9.68
Ba	137	115	1	ppb	832.313	832.313	10.00
W	182	209	1	ppb	8773.966	8773.966	10.87
Pt	195	209	1	ppb	-855.070	-855.070	-53.44
Au	197	209	1	ppb	-1226.988	-1226.988	-24.98
Tl	203	209	1	ppb	1.571	1.571	3.45
Tl	205	209	1	ppb	1.489	1.489	3.91
Pb	206	209	1	ppb	200.262	200.262	9.87
Pb	207	209	1	ppb	175.891	175.891	10.05
Pb	208	209	1	ppb	189.986	189.986	10.27
U	238	209	1	ppb	3.313	3.313	9.83

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	354,017	7.05	470219	75.3	70	125	
1	Ge	72	2,865,545	8.39	2998920	95.6	70	125	
2	Ge	72	394,220	0.39	398894	98.8	70	125	
1	In	115	2,838,826	8.79	3039557	93.4	70	125	
1	Bi	209	2,667,518	9.22	2809191	95.0	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	172SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 1:30
Sample Name	HS17041053-09	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	56.770	56.770	5.51
Be	9	6	1	ppb	9.983	9.983	5.44
B	11	6	1	ppb	36.778	36.778	7.06
Na	23	72	1	ppb	433.262	433.262	5.78
Na	23	72	2	ppb	426.516	426.516	2.06
Mg	24	72	1	ppb	18545.727	18545.727	6.28
Al	27	72	1	ppb	70878.270	70878.270	6.10
P	31	72	1	ppb	2457.865	2457.865	6.01
K	39	72	1	ppb	23297.495	23297.495	6.18
Ca	44	72	1	ppb	26536.087	26536.087	6.34
Ca	44	72	2	ppb	25648.315	25648.315	0.26
Ti	47	72	1	ppb	1908.168	1908.168	5.51
Ti	47	72	2	ppb	1907.553	1907.553	0.08
V	51	72	1	ppb	193.352	193.352	6.31
V	51	72	2	ppb	177.380	177.380	0.16
Cr	52	72	1	ppb	87.719	87.719	6.15
Cr	52	72	2	ppb	82.239	82.239	0.63
Mn	55	72	1	ppb	2272.942	2272.942	6.11
Mn	55	72	2	ppb	2267.033	2267.033	0.36
Fe	56	72	1	ppb	116089.217	116089.217	6.04
Fe	56	72	2	ppb	109429.162	109429.162	1.14
Co	59	72	1	ppb	43.904	43.904	5.78
Co	59	72	2	ppb	42.768	42.768	1.31
Ni	60	72	1	ppb	82.277	82.277	6.32
Ni	60	72	2	ppb	78.565	78.565	0.85
Cu	63	72	1	ppb	115.900	115.900	5.90
Cu	63	72	2	ppb	112.206	112.206	0.69
Cu	65	72	1	ppb	119.105	119.105	5.40
Zn	66	72	1	ppb	342.319	342.319	6.03
Zn	66	72	2	ppb	321.105	321.105	0.62
Zn	68	72	1	ppb	348.649	348.649	6.04
As	75	72	1	ppb	54.534	54.534	7.91
As	75	72	2	ppb	47.987	47.987	0.87
Se	78	72	1	ppb	9.446	9.446	50.68
Se	78	72	2	ppb	13.357	13.357	8.27
Se	82	72	1	ppb	5.811	5.811	5.81
Sr	88	72	1	ppb	283.464	283.464	5.52
Mo	95	72	1	ppb	3.505	3.505	7.13
Mo	97	72	1	ppb	3.570	3.570	6.19
Rh	103	115	1	ppb	208.667	208.667	13.32
Pd	105	115	1	ppb	4768.782	4768.782	6.74
Ag	107	72	1	ppb	0.465	0.465	4.08
Ag	109	72	1	ppb	0.434	0.434	5.92
Cd	111	115	1	ppb	2.080	2.080	5.69
Cd	114	115	1	ppb	2.115	2.115	7.24
Sn	118	72	1	ppb	5.871	5.871	5.65

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	6.015	6.015	5.84
Sb	121	72	1	ppb	1.827	1.827	6.01
Sb	121	72	2	ppb	1.678	1.678	2.69
Sb	123	72	1	ppb	1.846	1.846	5.73
Ba	135	115	1	ppb	698.845	698.845	6.29
Ba	137	115	1	ppb	705.818	705.818	6.23
W	182	209	1	ppb	9030.403	9030.403	2.71
Pt	195	209	1	ppb	-649.192	-649.192	-28.80
Au	197	209	1	ppb	-870.085	-870.085	-69.62
Tl	203	209	1	ppb	1.294	1.294	3.14
Tl	205	209	1	ppb	1.228	1.228	3.40
Pb	206	209	1	ppb	208.081	208.081	8.53
Pb	207	209	1	ppb	181.818	181.818	7.34
Pb	208	209	1	ppb	197.937	197.937	7.72
U	238	209	1	ppb	3.223	3.223	8.02

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	357,989	5.30	470219	76.1	70	125	
1	Ge	72	2,879,593	5.77	2998920	96.0	70	125	
2	Ge	72	396,584	0.40	398894	99.4	70	125	
1	In	115	2,882,034	6.34	3039557	94.8	70	125	
1	Bi	209	2,674,899	7.45	2809191	95.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	173SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 1:35
Sample Name	HS17041053-10	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	65.323	65.323	1.84
Be	9	6	1	ppb	10.653	10.653	0.91
B	11	6	1	ppb	36.564	36.564	2.37
Na	23	72	1	ppb	372.051	372.051	2.12
Na	23	72	2	ppb	382.093	382.093	4.78
Mg	24	72	1	ppb	21096.975	21096.975	1.27
Al	27	72	1	ppb	79843.211	79843.211	1.35
P	31	72	1	ppb	2652.574	2652.574	1.27
K	39	72	1	ppb	27284.919	27284.919	1.05
Ca	44	72	1	ppb	26077.499	26077.499	0.55
Ca	44	72	2	ppb	26439.462	26439.462	0.77
Ti	47	72	1	ppb	1951.072	1951.072	1.56
Ti	47	72	2	ppb	2055.190	2055.190	0.54
V	51	72	1	ppb	207.296	207.296	1.05
V	51	72	2	ppb	199.619	199.619	0.83
Cr	52	72	1	ppb	96.800	96.800	1.42
Cr	52	72	2	ppb	95.853	95.853	0.73
Mn	55	72	1	ppb	2458.016	2458.016	1.25
Mn	55	72	2	ppb	2558.647	2558.647	0.14
Fe	56	72	1	ppb	121828.440	121828.440	1.41
Fe	56	72	2	ppb	120071.523	120071.523	0.53
Co	59	72	1	ppb	48.685	48.685	1.51
Co	59	72	2	ppb	49.704	49.704	0.74
Ni	60	72	1	ppb	87.461	87.461	1.08
Ni	60	72	2	ppb	87.384	87.384	0.50
Cu	63	72	1	ppb	154.459	154.459	0.87
Cu	63	72	2	ppb	152.658	152.658	0.67
Cu	65	72	1	ppb	154.624	154.624	1.40
Zn	66	72	1	ppb	381.131	381.131	0.89
Zn	66	72	2	ppb	381.877	381.877	0.18
Zn	68	72	1	ppb	387.106	387.106	0.19
As	75	72	1	ppb	65.546	65.546	1.46
As	75	72	2	ppb	58.854	58.854	0.32
Se	78	72	1	ppb	5.710	5.710	7.91
Se	78	72	2	ppb	9.590	9.590	5.68
Se	82	72	1	ppb	5.068	5.068	5.89
Sr	88	72	1	ppb	274.705	274.705	1.33
Mo	95	72	1	ppb	3.332	3.332	2.29
Mo	97	72	1	ppb	3.411	3.411	1.60
Rh	103	115	1	ppb	274.477	274.477	11.29
Pd	105	115	1	ppb	4231.886	4231.886	0.91
Ag	107	72	1	ppb	0.614	0.614	4.20
Ag	109	72	1	ppb	0.616	0.616	1.60
Cd	111	115	1	ppb	2.810	2.810	1.09
Cd	114	115	1	ppb	2.938	2.938	1.40
Sn	118	72	1	ppb	8.501	8.501	1.32

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	8.474	8.474	1.83
Sb	121	72	1	ppb	2.366	2.366	1.39
Sb	121	72	2	ppb	2.271	2.271	3.29
Sb	123	72	1	ppb	2.360	2.360	2.58
Ba	135	115	1	ppb	806.801	806.801	0.58
Ba	137	115	1	ppb	799.761	799.761	0.81
W	182	209	1	ppb	9290.733	9290.733	2.46
Pt	195	209	1	ppb	-419.445	-419.445	-13.62
Au	197	209	1	ppb	-775.702	-775.702	-39.36
Tl	203	209	1	ppb	1.279	1.279	9.30
Tl	205	209	1	ppb	1.192	1.192	8.86
Pb	206	209	1	ppb	292.298	292.298	2.53
Pb	207	209	1	ppb	271.786	271.786	2.44
Pb	208	209	1	ppb	281.004	281.004	1.98
U	238	209	1	ppb	2.790	2.790	1.54

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	362,494	0.83	470219	77.1	70	125	
1	Ge	72	2,980,486	0.31	2998920	99.4	70	125	
2	Ge	72	392,517	0.34	398894	98.4	70	125	
1	In	115	2,962,686	0.52	3039557	97.5	70	125	
1	Bi	209	2,855,648	1.10	2809191	101.7	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	174SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 1:40
Sample Name	HS17041053-11	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	61.784	61.784	1.35
Be	9	6	1	ppb	10.314	10.314	1.79
B	11	6	1	ppb	28.700	28.700	1.15
Na	23	72	1	ppb	590.825	590.825	1.50
Na	23	72	2	ppb	606.843	606.843	1.24
Mg	24	72	1	ppb	33032.148	33032.148	1.16
Al	27	72	1	ppb	69337.774	69337.774	1.12
P	31	72	1	ppb	2530.148	2530.148	0.41
K	39	72	1	ppb	21748.715	21748.715	0.51
Ca	44	72	1	ppb	48263.367	48263.367	0.65
Ca	44	72	2	ppb	48758.046	48758.046	0.69
Ti	47	72	1	ppb	2172.789	2172.789	1.15
Ti	47	72	2	ppb	2284.770	2284.770	0.70
V	51	72	1	ppb	197.646	197.646	1.35
V	51	72	2	ppb	188.264	188.264	0.89
Cr	52	72	1	ppb	81.061	81.061	1.83
Cr	52	72	2	ppb	80.421	80.421	1.09
Mn	55	72	1	ppb	2599.559	2599.559	1.09
Mn	55	72	2	ppb	2720.515	2720.515	0.55
Fe	56	72	1	ppb	130379.096	130379.096	0.80
Fe	56	72	2	ppb	129954.012	129954.012	0.51
Co	59	72	1	ppb	56.334	56.334	0.82
Co	59	72	2	ppb	57.746	57.746	0.60
Ni	60	72	1	ppb	117.645	117.645	0.64
Ni	60	72	2	ppb	116.999	116.999	0.67
Cu	63	72	1	ppb	366.513	366.513	0.35
Cu	63	72	2	ppb	364.068	364.068	1.08
Cu	65	72	1	ppb	382.322	382.322	0.49
Zn	66	72	1	ppb	574.460	574.460	0.32
Zn	66	72	2	ppb	553.481	553.481	0.61
Zn	68	72	1	ppb	579.453	579.453	0.18
As	75	72	1	ppb	61.200	61.200	1.38
As	75	72	2	ppb	52.764	52.764	0.44
Se	78	72	1	ppb	5.576	5.576	9.06
Se	78	72	2	ppb	10.984	10.984	12.47
Se	82	72	1	ppb	5.462	5.462	0.92
Sr	88	72	1	ppb	355.432	355.432	1.18
Mo	95	72	1	ppb	3.713	3.713	2.78
Mo	97	72	1	ppb	3.692	3.692	1.42
Rh	103	115	1	ppb	3266.123	3266.123	3.73
Pd	105	115	1	ppb	4965.121	4965.121	7.33
Ag	107	72	1	ppb	0.647	0.647	1.69
Ag	109	72	1	ppb	0.638	0.638	3.59
Cd	111	115	1	ppb	3.769	3.769	0.99
Cd	114	115	1	ppb	3.796	3.796	0.89
Sn	118	72	1	ppb	9.594	9.594	1.88

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	9.670	9.670	2.27
Sb	121	72	1	ppb	83.681	83.681	0.64
Sb	121	72	2	ppb	80.049	80.049	0.55
Sb	123	72	1	ppb	83.671	83.671	0.87
Ba	135	115	1	ppb	770.239	770.239	0.40
Ba	137	115	1	ppb	765.794	765.794	0.27
W	182	209	1	ppb	39012.459	39012.459	3.03
Pt	195	209	1	ppb	-554.762	-554.762	-50.32
Au	197	209	1	ppb	-1325.719	-1325.719	-35.97
Tl	203	209	1	ppb	1.186	1.186	8.21
Tl	205	209	1	ppb	1.147	1.147	6.88
Pb	206	209	1	ppb	5413.806	5413.806	0.47
Pb	207	209	1	ppb	5076.556	5076.556	0.30
Pb	208	209	1	ppb	5249.679	5249.679	0.20
U	238	209	1	ppb	3.425	3.425	0.69

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	373,261	0.72	470219	79.4	70	125	
1	Ge	72	3,045,888	0.19	2998920	101.6	70	125	
2	Ge	72	396,997	1.01	398894	99.5	70	125	
1	In	115	3,008,864	0.64	3039557	99.0	70	125	
1	Bi	209	2,887,365	0.83	2809191	102.8	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	175SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 1:44
Sample Name	HS17041053-12	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	48.735	48.735	1.06
Be	9	6	1	ppb	8.575	8.575	2.00
B	11	6	1	ppb	24.255	24.255	0.56
Na	23	72	1	ppb	583.758	583.758	0.79
Na	23	72	2	ppb	592.725	592.725	1.81
Mg	24	72	1	ppb	28259.918	28259.918	0.95
Al	27	72	1	ppb	56502.116	56502.116	1.63
P	31	72	1	ppb	2381.905	2381.905	1.39
K	39	72	1	ppb	16948.626	16948.626	1.73
Ca	44	72	1	ppb	45180.951	45180.951	0.84
Ca	44	72	2	ppb	45340.016	45340.016	0.83
Ti	47	72	1	ppb	1873.183	1873.183	2.00
Ti	47	72	2	ppb	1955.797	1955.797	1.22
V	51	72	1	ppb	158.514	158.514	1.10
V	51	72	2	ppb	145.343	145.343	0.12
Cr	52	72	1	ppb	62.749	62.749	0.47
Cr	52	72	2	ppb	63.346	63.346	1.35
Mn	55	72	1	ppb	2286.001	2286.001	0.35
Mn	55	72	2	ppb	2402.281	2402.281	0.67
Fe	56	72	1	ppb	107819.276	107819.276	0.11
Fe	56	72	2	ppb	107345.045	107345.045	0.57
Co	59	72	1	ppb	42.791	42.791	0.51
Co	59	72	2	ppb	43.991	43.991	0.80
Ni	60	72	1	ppb	79.802	79.802	0.98
Ni	60	72	2	ppb	80.578	80.578	1.03
Cu	63	72	1	ppb	220.806	220.806	0.77
Cu	63	72	2	ppb	216.717	216.717	0.68
Cu	65	72	1	ppb	218.468	218.468	0.93
Zn	66	72	1	ppb	496.096	496.096	1.17
Zn	66	72	2	ppb	477.354	477.354	0.19
Zn	68	72	1	ppb	482.281	482.281	0.98
As	75	72	1	ppb	54.665	54.665	0.53
As	75	72	2	ppb	44.573	44.573	0.29
Se	78	72	1	ppb	6.331	6.331	9.46
Se	78	72	2	ppb	9.507	9.507	6.07
Se	82	72	1	ppb	4.972	4.972	5.39
Sr	88	72	1	ppb	304.621	304.621	1.34
Mo	95	72	1	ppb	2.970	2.970	2.78
Mo	97	72	1	ppb	3.021	3.021	2.72
Rh	103	115	1	ppb	2141.533	2141.533	1.46
Pd	105	115	1	ppb	4114.543	4114.543	1.76
Ag	107	72	1	ppb	0.562	0.562	3.88
Ag	109	72	1	ppb	0.549	0.549	2.76
Cd	111	115	1	ppb	3.666	3.666	1.13
Cd	114	115	1	ppb	3.773	3.773	3.64
Sn	118	72	1	ppb	10.823	10.823	0.74

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	10.675	10.675	1.07
Sb	121	72	1	ppb	38.112	38.112	0.70
Sb	121	72	2	ppb	36.149	36.149	0.97
Sb	123	72	1	ppb	37.996	37.996	0.86
Ba	135	115	1	ppb	647.860	647.860	0.61
Ba	137	115	1	ppb	643.990	643.990	0.94
W	182	209	1	ppb	13501.209	13501.209	4.56
Pt	195	209	1	ppb	-586.655	-586.655	-31.82
Au	197	209	1	ppb	-918.847	-918.847	-5.30
Tl	203	209	1	ppb	0.963	0.963	7.41
Tl	205	209	1	ppb	0.904	0.904	8.16
Pb	206	209	1	ppb	3655.417	3655.417	1.57
Pb	207	209	1	ppb	3405.441	3405.441	2.01
Pb	208	209	1	ppb	3526.371	3526.371	1.95
U	238	209	1	ppb	2.669	2.669	1.61

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	372,113	0.94	470219	79.1	70	125	
1	Ge	72	2,959,237	0.16	2998920	98.7	70	125	
2	Ge	72	384,641	0.38	398894	96.4	70	125	
1	In	115	2,947,298	0.78	3039557	97.0	70	125	
1	Bi	209	2,854,047	1.25	2809191	101.6	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	176SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 1:49
Sample Name	HS17041053-13	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	59.818	59.818	0.16
Be	9	6	1	ppb	9.781	9.781	0.72
B	11	6	1	ppb	23.395	23.395	1.26
Na	23	72	1	ppb	547.851	547.851	2.54
Na	23	72	2	ppb	544.712	544.712	0.19
Mg	24	72	1	ppb	30743.300	30743.300	1.39
Al	27	72	1	ppb	69128.431	69128.431	1.66
P	31	72	1	ppb	3316.416	3316.416	3.04
K	39	72	1	ppb	24853.860	24853.860	1.76
Ca	44	72	1	ppb	39507.404	39507.404	1.69
Ca	44	72	2	ppb	39185.978	39185.978	0.78
Ti	47	72	1	ppb	2140.875	2140.875	2.41
Ti	47	72	2	ppb	2234.467	2234.467	0.05
V	51	72	1	ppb	194.426	194.426	2.03
V	51	72	2	ppb	174.123	174.123	0.22
Cr	52	72	1	ppb	79.183	79.183	0.84
Cr	52	72	2	ppb	77.159	77.159	0.74
Mn	55	72	1	ppb	2535.997	2535.997	2.31
Mn	55	72	2	ppb	2613.950	2613.950	0.84
Fe	56	72	1	ppb	124660.414	124660.414	1.87
Fe	56	72	2	ppb	122618.803	122618.803	0.32
Co	59	72	1	ppb	47.608	47.608	1.82
Co	59	72	2	ppb	48.095	48.095	0.68
Ni	60	72	1	ppb	93.160	93.160	0.92
Ni	60	72	2	ppb	93.691	93.691	0.54
Cu	63	72	1	ppb	307.659	307.659	2.04
Cu	63	72	2	ppb	302.364	302.364	0.33
Cu	65	72	1	ppb	319.773	319.773	2.06
Zn	66	72	1	ppb	593.649	593.649	2.17
Zn	66	72	2	ppb	564.709	564.709	1.34
Zn	68	72	1	ppb	585.023	585.023	2.26
As	75	72	1	ppb	51.622	51.622	2.22
As	75	72	2	ppb	37.697	37.697	0.56
Se	78	72	1	ppb	8.773	8.773	22.44
Se	78	72	2	ppb	10.459	10.459	3.91
Se	82	72	1	ppb	5.579	5.579	5.65
Sr	88	72	1	ppb	201.724	201.724	1.45
Mo	95	72	1	ppb	3.702	3.702	1.71
Mo	97	72	1	ppb	3.747	3.747	4.11
Rh	103	115	1	ppb	1626.012	1626.012	5.09
Pd	105	115	1	ppb	4501.446	4501.446	5.39
Ag	107	72	1	ppb	0.682	0.682	3.75
Ag	109	72	1	ppb	0.666	0.666	1.71
Cd	111	115	1	ppb	4.239	4.239	1.57
Cd	114	115	1	ppb	4.195	4.195	1.27
Sn	118	72	1	ppb	9.496	9.496	2.16

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	9.447	9.447	1.30
Sb	121	72	1	ppb	13.225	13.225	1.96
Sb	121	72	2	ppb	12.625	12.625	0.64
Sb	123	72	1	ppb	13.324	13.324	1.57
Ba	135	115	1	ppb	771.017	771.017	1.06
Ba	137	115	1	ppb	770.529	770.529	0.84
W	182	209	1	ppb	8043.670	8043.670	2.45
Pt	195	209	1	ppb	-266.243	-266.243	-135.58
Au	197	209	1	ppb	-1003.791	-1003.791	-33.55
Tl	203	209	1	ppb	1.172	1.172	3.94
Tl	205	209	1	ppb	1.114	1.114	7.17
Pb	206	209	1	ppb	2732.857	2732.857	0.55
Pb	207	209	1	ppb	2531.142	2531.142	0.51
Pb	208	209	1	ppb	2633.794	2633.794	0.37
U	238	209	1	ppb	3.041	3.041	0.20

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	350,841	0.90	470219	74.6	70	125	
1	Ge	72	2,853,158	2.65	2998920	95.1	70	125	
2	Ge	72	379,215	0.06	398894	95.1	70	125	
1	In	115	2,841,553	1.66	3039557	93.5	70	125	
1	Bi	209	2,721,614	1.01	2809191	96.9	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**177CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/25/2017 1:54**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**106CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	102.90	0.66	ppb	100	102.9	90	110	
Na	23	72	2	9369.36	0.70	ppb	10000	93.7	90	110	
Mg	24	72	1	9318.13	0.38	ppb	10000	93.2	90	110	
K	39	72	1	9733.38	0.15	ppb	10000	97.3	90	110	
Cr	52	72	2	97.70	0.55	ppb	100	97.7	90	110	
Mn	55	72	2	100.70	1.00	ppb	100	100.7	90	110	
Fe	56	72	2	9852.65	0.25	ppb	10000	98.5	90	110	
Co	59	72	2	98.17	0.38	ppb	100	98.2	90	110	
Ni	60	72	2	97.72	1.21	ppb	100	97.7	90	110	
Cu	63	72	2	98.11	0.51	ppb	100	98.1	90	110	
Zn	66	72	2	97.48	1.07	ppb	100	97.5	90	110	
As	75	72	2	100.54	0.20	ppb	100	100.5	90	110	
Se	78	72	2	100.93	0.50	ppb	100	100.9	90	110	
Mo	95	72	1	98.83	0.60	ppb	100	98.8	90	110	
Ag	107	72	1	98.24	0.68	ppb	100	98.2	90	110	
Cd	111	115	1	97.69	1.48	ppb	100	97.7	90	110	
Sb	121	72	2	98.97	0.38	ppb	100	99.0	90	110	
Ba	135	115	1	99.10	0.47	ppb	100	99.1	90	110	
Tl	203	209	1	99.07	1.15	ppb	100	99.1	90	110	
Pb	208	209	1	100.92	0.23	ppb	100	100.9	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	360271	0.87	470219	**76.6**	70	125	
Ge	72	1	2971124	1.27	2998920	**99.1**	70	125	
Ge	72	2	392248	0.43	398894	**98.3**	70	125	
In	115	1	3008395	0.90	3039557	**99.0**	70	125	
Bi	209	1	2743903	0.90	2809191	**97.7**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**178CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/25/2017 1:58**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**106CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.49	3.79	ppb	2.5	
Be	9	6	1	0.13	6.46	ppb	1	
B	11	6	1	3.81	24.99	ppb	5	
Na	23	72	1	8.84	10.90	ppb	250	
Na	23	72	2	8.86	10.34	ppb	250	
Mg	24	72	1	27.17	7.20	ppb	250	
Al	27	72	1	8.53	35.66	ppb	5	>2.2*DL
P	31	72	1	-3.51	-12.29	ppb	5	
K	39	72	1	-16.60	-34.91	ppb	250	
Ca	44	72	1	18.75	91.80	ppb	250	
Ca	44	72	2	38.87	12.50	ppb	250	
Ti	47	72	1	0.42	31.18	ppb	2.5	
Ti	47	72	2	0.51	67.29	ppb	2.5	
V	51	72	1	22.51	0.21	ppb	2.5	>2.2*DL
V	51	72	2	0.27	5.44	ppb	2.5	
Cr	52	72	1	1.07	2.48	ppb	2.5	
Cr	52	72	2	0.09	36.71	ppb	2.5	
Mn	55	72	1	0.38	12.78	ppb	2.5	
Mn	55	72	2	0.63	8.34	ppb	2.5	
Fe	56	72	1	6.27	6.11	ppb	100	
Fe	56	72	2	27.26	4.11	ppb	100	
Co	59	72	1	0.08	11.25	ppb	2.5	
Co	59	72	2	0.08	9.48	ppb	2.5	
Ni	60	72	1	0.15	8.67	ppb	2.5	
Ni	60	72	2	0.13	24.58	ppb	2.5	
Cu	63	72	1	0.02	74.51	ppb	2.5	
Cu	63	72	2	0.03	40.38	ppb	2.5	
Cu	65	72	1	-0.01	-261.88	ppb	2.5	
Zn	66	72	1	0.04	118.19	ppb	2.5	
Zn	66	72	2	0.01	566.38	ppb	2.5	
Zn	68	72	1	0.29	21.16	ppb	2.5	
As	75	72	1	12.10	2.60	ppb	2.5	>2.2*DL
As	75	72	2	0.15	0.73	ppb	2.5	
Se	78	72	1	9.05	14.98	ppb	2.5	>2.2*DL
Se	78	72	2	0.47	13.67	ppb	2.5	
Se	82	72	1	0.03	183.25	ppb	2.5	
Sr	88	72	1	0.15	26.23	ppb	2.5	
Mo	95	72	1	0.17	12.96	ppb	2.5	
Mo	97	72	1	0.16	18.24	ppb	2.5	
Ag	107	72	1	0.07	11.24	ppb	2.5	
Ag	109	72	1	0.08	8.97	ppb	2.5	
Cd	111	115	1	0.07	2.14	ppb	2.5	
Cd	114	115	1	0.07	10.82	ppb	2.5	
Sn	118	72	1	0.12	15.66	ppb	2.5	
Sn	119	72	1	0.11	16.33	ppb	2.5	
Sb	121	72	1	0.28	9.59	ppb	2.5	
Sb	121	72	2	0.27	1.43	ppb	2.5	
Sb	123	72	1	0.29	9.80	ppb	2.5	
Ba	135	115	1	0.16	9.71	ppb	2.5	
Ba	137	115	1	0.18	28.96	ppb	2.5	
Tl	203	209	1	0.58	12.30	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.55	8.74	ppb	2.5	
Pb	206	209	1	0.55	25.10	ppb	2.5	
Pb	207	209	1	0.49	24.59	ppb	2.5	
Pb	208	209	1	0.52	22.78	ppb	2.5	
U	238	209	1	0.05	8.74	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	380951	1.49	470219	81.0	70	125	
Ge	72	1	2895641	1.40	2998920	96.6	70	125	
Ge	72	2	376098	0.49	398894	94.3	70	125	
In	115	1	2975366	1.56	3039557	97.9	70	125	
Bi	209	1	2711008	1.41	2809191	96.5	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**187CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**
AcqDateTime	**4/25/2017 2:41**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**106CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	102.18	4.35	ppb	100	102.2	90	110	
Na	23	72	2	9474.24	0.44	ppb	10000	94.7	90	110	
Mg	24	72	1	9162.73	4.18	ppb	10000	91.6	90	110	
K	39	72	1	9760.00	4.26	ppb	10000	97.6	90	110	
Cr	52	72	2	98.26	0.75	ppb	100	98.3	90	110	
Mn	55	72	2	98.97	0.10	ppb	100	99.0	90	110	
Fe	56	72	2	9810.87	0.80	ppb	10000	98.1	90	110	
Co	59	72	2	98.94	0.78	ppb	100	98.9	90	110	
Ni	60	72	2	99.92	0.44	ppb	100	99.9	90	110	
Cu	63	72	2	99.29	0.53	ppb	100	99.3	90	110	
Zn	66	72	2	101.80	1.24	ppb	100	101.8	90	110	
As	75	72	2	100.06	0.46	ppb	100	100.1	90	110	
Se	78	72	2	99.88	2.34	ppb	100	99.9	90	110	
Mo	95	72	1	102.06	3.61	ppb	100	102.1	90	110	
Ag	107	72	1	102.65	3.87	ppb	100	102.6	90	110	
Cd	111	115	1	100.31	4.47	ppb	100	100.3	90	110	
Sb	121	72	2	99.71	0.37	ppb	100	99.7	90	110	
Ba	135	115	1	101.66	3.76	ppb	100	101.7	90	110	
Tl	203	209	1	100.65	4.15	ppb	100	100.6	90	110	
Pb	208	209	1	102.20	5.00	ppb	100	102.2	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	332954	3.82	470219	**70.8**	70	125	
Ge	72	1	2764736	4.24	2998920	**92.2**	70	125	
Ge	72	2	364935	0.55	398894	**91.5**	70	125	
In	115	1	2882339	4.74	3039557	**94.8**	70	125	
Bi	209	1	2684843	5.78	2809191	**95.6**	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**188CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D24m00.B**	**AcqDateTime**	**4/25/2017 2:45**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**106CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.37	16.45	ppb	2.5	
Be	9	6	1	0.13	9.19	ppb	1	
B	11	6	1	3.73	18.40	ppb	5	
Na	23	72	1	18.58	2.03	ppb	250	
Na	23	72	2	19.38	3.53	ppb	250	
Mg	24	72	1	9.45	7.27	ppb	250	
Al	27	72	1	6.51	38.95	ppb	5	>2.2*DL
P	31	72	1	2.72	23.90	ppb	5	
K	39	72	1	10.97	101.90	ppb	250	
Ca	44	72	1	17.77	85.02	ppb	250	
Ca	44	72	2	41.87	8.08	ppb	250	
Ti	47	72	1	0.23	19.46	ppb	2.5	
Ti	47	72	2	0.28	76.71	ppb	2.5	
V	51	72	1	-10.62	-3.54	ppb	2.5	
V	51	72	2	-0.27	-4.64	ppb	2.5	
Cr	52	72	1	-0.12	-41.68	ppb	2.5	
Cr	52	72	2	0.06	31.60	ppb	2.5	
Mn	55	72	1	0.14	32.24	ppb	2.5	
Mn	55	72	2	0.37	6.36	ppb	2.5	
Fe	56	72	1	14.22	23.65	ppb	100	
Fe	56	72	2	18.28	2.85	ppb	100	
Co	59	72	1	0.07	5.79	ppb	2.5	
Co	59	72	2	0.10	11.68	ppb	2.5	
Ni	60	72	1	0.26	9.61	ppb	2.5	
Ni	60	72	2	0.29	25.10	ppb	2.5	
Cu	63	72	1	0.03	38.34	ppb	2.5	
Cu	63	72	2	0.04	18.79	ppb	2.5	
Cu	65	72	1	0.00	385.42	ppb	2.5	
Zn	66	72	1	1.82	6.27	ppb	2.5	
Zn	66	72	2	1.73	10.59	ppb	2.5	
Zn	68	72	1	1.95	7.87	ppb	2.5	
As	75	72	1	-5.23	-6.90	ppb	2.5	
As	75	72	2	0.09	26.95	ppb	2.5	
Se	78	72	1	7.19	29.26	ppb	2.5	>2.2*DL
Se	78	72	2	-0.16	-120.01	ppb	2.5	
Se	82	72	1	0.35	31.93	ppb	2.5	
Sr	88	72	1	0.14	18.44	ppb	2.5	
Mo	95	72	1	0.23	5.50	ppb	2.5	
Mo	97	72	1	0.23	12.90	ppb	2.5	
Ag	107	72	1	0.08	7.34	ppb	2.5	
Ag	109	72	1	0.08	0.35	ppb	2.5	
Cd	111	115	1	0.06	5.15	ppb	2.5	
Cd	114	115	1	0.06	11.95	ppb	2.5	
Sn	118	72	1	0.09	6.56	ppb	2.5	
Sn	119	72	1	0.10	11.79	ppb	2.5	
Sb	121	72	1	0.28	8.14	ppb	2.5	
Sb	121	72	2	0.27	6.79	ppb	2.5	
Sb	123	72	1	0.29	10.01	ppb	2.5	
Ba	135	115	1	0.15	14.13	ppb	2.5	
Ba	137	115	1	0.15	25.84	ppb	2.5	
Tl	203	209	1	0.56	12.21	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.52	10.64	ppb	2.5	
Pb	206	209	1	0.06	195.21	ppb	2.5	
Pb	207	209	1	0.04	277.46	ppb	2.5	
Pb	208	209	1	0.05	240.30	ppb	2.5	
U	238	209	1	0.05	4.43	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	369709	2.03	470219	78.6	70	125	
Ge	72	1	2838145	3.29	2998920	94.6	70	125	
Ge	72	2	363594	0.66	398894	91.2	70	125	
In	115	1	2973585	1.49	3039557	97.8	70	125	
Bi	209	1	2764179	2.60	2809191	98.4	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	189SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 2:50
Sample Name	LLCCV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	1.982	1.982	6.57
Be	9	6	1	ppb	1.966	1.966	3.39
B	11	6	1	ppb	9.298	9.298	5.00
Na	23	72	1	ppb	196.101	196.101	1.11
Na	23	72	2	ppb	206.848	206.848	1.03
Mg	24	72	1	ppb	191.208	191.208	1.77
Al	27	72	1	ppb	3.370	3.370	84.59
P	31	72	1	ppb	11.457	11.457	6.29
K	39	72	1	ppb	193.823	193.823	4.77
Ca	44	72	1	ppb	181.018	181.018	8.54
Ca	44	72	2	ppb	204.148	204.148	10.24
Ti	47	72	1	ppb	2.108	2.108	7.11
Ti	47	72	2	ppb	2.176	2.176	28.00
V	51	72	1	ppb	-8.573	-8.573	-2.20
V	51	72	2	ppb	1.697	1.697	2.00
Cr	52	72	1	ppb	1.748	1.748	1.35
Cr	52	72	2	ppb	2.069	2.069	0.10
Mn	55	72	1	ppb	1.935	1.935	2.68
Mn	55	72	2	ppb	2.200	2.200	4.69
Fe	56	72	1	ppb	207.535	207.535	1.25
Fe	56	72	2	ppb	206.202	206.202	1.16
Co	59	72	1	ppb	2.021	2.021	1.27
Co	59	72	2	ppb	2.145	2.145	3.01
Ni	60	72	1	ppb	2.152	2.152	3.13
Ni	60	72	2	ppb	2.218	2.218	5.87
Cu	63	72	1	ppb	1.949	1.949	3.14
Cu	63	72	2	ppb	2.101	2.101	3.11
Cu	65	72	1	ppb	2.046	2.046	1.73
Zn	66	72	1	ppb	3.390	3.390	1.30
Zn	66	72	2	ppb	3.090	3.090	2.72
Zn	68	72	1	ppb	3.514	3.514	2.93
As	75	72	1	ppb	-3.497	-3.497	-4.61
As	75	72	2	ppb	2.072	2.072	1.02
Se	78	72	1	ppb	8.002	8.002	9.48
Se	78	72	2	ppb	2.127	2.127	8.25
Se	82	72	1	ppb	2.160	2.160	5.02
Sr	88	72	1	ppb	2.128	2.128	1.66
Mo	95	72	1	ppb	2.038	2.038	4.20
Mo	97	72	1	ppb	2.161	2.161	2.94
Rh	103	115	1	ppb	6.158	6.158	326.48
Pd	105	115	1	ppb	151.269	151.269	69.59
Ag	107	72	1	ppb	2.094	2.094	1.87
Ag	109	72	1	ppb	2.077	2.077	0.48
Cd	111	115	1	ppb	1.924	1.924	2.92

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	1.945	1.945	1.58
Sn	118	72	1	ppb	2.012	2.012	1.54
Sn	119	72	1	ppb	2.036	2.036	3.94
Sb	121	72	1	ppb	2.187	2.187	1.97
Sb	121	72	2	ppb	2.064	2.064	1.75
Sb	123	72	1	ppb	2.215	2.215	2.04
Ba	135	115	1	ppb	2.059	2.059	1.00
Ba	137	115	1	ppb	2.041	2.041	4.43
W	182	209	1	ppb	-21.289	-21.289	-165.68
Pt	195	209	1	ppb	-84.921	-84.921	-46.78
Au	197	209	1	ppb	393.231	393.231	21.96
Tl	203	209	1	ppb	1.887	1.887	5.44
Tl	205	209	1	ppb	1.799	1.799	5.44
Pb	206	209	1	ppb	1.760	1.760	5.98
Pb	207	209	1	ppb	1.731	1.731	4.07
Pb	208	209	1	ppb	1.747	1.747	4.69
U	238	209	1	ppb	1.620	1.620	1.93

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	375,298	2.00	470219	79.8	70	125	
1	Ge	72	2,866,160	1.52	2998920	95.6	70	125	
2	Ge	72	367,662	0.69	398894	92.2	70	125	
1	In	115	3,009,718	1.54	3039557	99.0	70	125	
1	Bi	209	2,806,118	1.41	2809191	99.9	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	190SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 2:55
Sample Name	LLCCV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	4.636	4.636	2.66
Be	9	6	1	ppb	4.839	4.839	2.48
B	11	6	1	ppb	22.235	22.235	2.65
Na	23	72	1	ppb	471.607	471.607	1.20
Na	23	72	2	ppb	509.111	509.111	0.50
Mg	24	72	1	ppb	467.703	467.703	1.20
Al	27	72	1	ppb	6.137	6.137	32.65
P	31	72	1	ppb	25.251	25.251	4.34
K	39	72	1	ppb	477.132	477.132	2.46
Ca	44	72	1	ppb	477.260	477.260	1.59
Ca	44	72	2	ppb	529.951	529.951	1.52
Ti	47	72	1	ppb	4.908	4.908	3.74
Ti	47	72	2	ppb	4.908	4.908	13.33
V	51	72	1	ppb	-5.538	-5.538	-0.78
V	51	72	2	ppb	4.699	4.699	1.51
Cr	52	72	1	ppb	4.716	4.716	1.59
Cr	52	72	2	ppb	5.080	5.080	1.74
Mn	55	72	1	ppb	4.900	4.900	0.76
Mn	55	72	2	ppb	5.242	5.242	2.69
Fe	56	72	1	ppb	505.277	505.277	0.92
Fe	56	72	2	ppb	519.746	519.746	2.11
Co	59	72	1	ppb	5.010	5.010	1.82
Co	59	72	2	ppb	5.321	5.321	1.97
Ni	60	72	1	ppb	5.226	5.226	1.36
Ni	60	72	2	ppb	5.314	5.314	2.09
Cu	63	72	1	ppb	4.908	4.908	2.23
Cu	63	72	2	ppb	5.093	5.093	2.14
Cu	65	72	1	ppb	5.019	5.019	2.71
Zn	66	72	1	ppb	6.316	6.316	1.57
Zn	66	72	2	ppb	6.441	6.441	5.10
Zn	68	72	1	ppb	6.547	6.547	1.57
As	75	72	1	ppb	-0.424	-0.424	-14.29
As	75	72	2	ppb	5.163	5.163	1.27
Se	78	72	1	ppb	9.698	9.698	1.44
Se	78	72	2	ppb	4.397	4.397	3.24
Se	82	72	1	ppb	5.157	5.157	5.52
Sr	88	72	1	ppb	5.151	5.151	1.24
Mo	95	72	1	ppb	5.122	5.122	1.99
Mo	97	72	1	ppb	5.148	5.148	2.33
Rh	103	115	1	ppb	6.152	6.152	104.39
Pd	105	115	1	ppb	138.061	138.061	24.98
Ag	107	72	1	ppb	5.170	5.170	2.24
Ag	109	72	1	ppb	5.210	5.210	3.24
Cd	111	115	1	ppb	4.915	4.915	2.85

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	4.852	4.852	1.49
Sn	118	72	1	ppb	5.001	5.001	1.17
Sn	119	72	1	ppb	5.110	5.110	1.61
Sb	121	72	1	ppb	5.405	5.405	2.61
Sb	121	72	2	ppb	5.172	5.172	0.35
Sb	123	72	1	ppb	5.396	5.396	1.99
Ba	135	115	1	ppb	5.044	5.044	2.08
Ba	137	115	1	ppb	4.938	4.938	1.63
W	182	209	1	ppb	6.284	6.284	755.97
Pt	195	209	1	ppb	397.737	397.737	78.03
Au	197	209	1	ppb	404.095	404.095	20.18
Tl	203	209	1	ppb	4.631	4.631	5.48
Tl	205	209	1	ppb	4.421	4.421	5.15
Pb	206	209	1	ppb	4.685	4.685	0.51
Pb	207	209	1	ppb	4.587	4.587	2.06
Pb	208	209	1	ppb	4.637	4.637	0.56
U	238	209	1	ppb	4.058	4.058	2.39

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	380,079	1.52	470219	80.8	70	125	
1	Ge	72	2,953,218	1.42	2998920	98.5	70	125	
2	Ge	72	373,552	0.60	398894	93.6	70	125	
1	In	115	3,101,312	1.31	3039557	102.0	70	125	
1	Bi	209	2,870,988	1.60	2809191	102.2	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	191SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 3:00
Sample Name	ICSA	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.757	0.757	3.03
Be	9	6	1	ppb	0.027	0.027	30.41
B	11	6	1	ppb	0.738	0.738	83.18
Na	23	72	1	ppb	89561.729	89561.729	4.92
Na	23	72	2	ppb	93097.784	93097.784	0.79
Mg	24	72	1	ppb	89573.860	89573.860	4.45
Al	27	72	1	ppb	86652.844	86652.844	4.08
P	31	72	1	ppb	90412.389	90412.389	4.40
K	39	72	1	ppb	97635.463	97635.463	4.88
Ca	44	72	1	ppb	97304.755	97304.755	4.61
Ca	44	72	2	ppb	92190.032	92190.032	0.11
Ti	47	72	1	ppb	1979.738	1979.738	4.36
Ti	47	72	2	ppb	1966.194	1966.194	1.18
V	51	72	1	ppb	-4.823	-4.823	-11.32
V	51	72	2	ppb	-0.261	-0.261	-8.82
Cr	52	72	1	ppb	2.162	2.162	8.21
Cr	52	72	2	ppb	1.181	1.181	2.44
Mn	55	72	1	ppb	0.053	0.053	251.96
Mn	55	72	2	ppb	0.184	0.184	18.54
Fe	56	72	1	ppb	99126.448	99126.448	4.81
Fe	56	72	2	ppb	96799.901	96799.901	0.76
Co	59	72	1	ppb	0.088	0.088	9.12
Co	59	72	2	ppb	0.021	0.021	19.99
Ni	60	72	1	ppb	0.768	0.768	3.37
Ni	60	72	2	ppb	0.197	0.197	18.08
Cu	63	72	1	ppb	2.859	2.859	26.23
Cu	63	72	2	ppb	3.333	3.333	2.86
Cu	65	72	1	ppb	2.604	2.604	29.81
Zn	66	72	1	ppb	4.227	4.227	2.38
Zn	66	72	2	ppb	3.069	3.069	3.45
Zn	68	72	1	ppb	3.502	3.502	4.06
As	75	72	1	ppb	0.420	0.420	248.66
As	75	72	2	ppb	0.109	0.109	6.73
Se	78	72	1	ppb	8.419	8.419	39.38
Se	78	72	2	ppb	0.034	0.034	198.00
Se	82	72	1	ppb	0.326	0.326	123.46
Sr	88	72	1	ppb	0.964	0.964	10.93
Mo	95	72	1	ppb	2103.774	2103.774	3.98
Mo	97	72	1	ppb	2119.176	2119.176	4.28
Rh	103	115	1	ppb	4.826	4.826	356.08
Pd	105	115	1	ppb	47.419	47.419	145.83
Ag	107	72	1	ppb	0.082	0.082	14.79
Ag	109	72	1	ppb	0.076	0.076	19.36
Cd	111	115	1	ppb	0.848	0.848	4.44

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.559	0.559	5.75
Sn	118	72	1	ppb	0.068	0.068	53.63
Sn	119	72	1	ppb	0.055	0.055	61.98
Sb	121	72	1	ppb	0.031	0.031	37.63
Sb	121	72	2	ppb	0.023	0.023	82.49
Sb	123	72	1	ppb	0.043	0.043	22.58
Ba	135	115	1	ppb	0.103	0.103	85.80
Ba	137	115	1	ppb	0.085	0.085	58.77
W	182	209	1	ppb	1963.396	1963.396	6.91
Pt	195	209	1	ppb	338.380	338.380	47.45
Au	197	209	1	ppb	6.802	6.802	2316.98
Tl	203	209	1	ppb	0.010	0.010	124.95
Tl	205	209	1	ppb	0.011	0.011	66.40
Pb	206	209	1	ppb	0.102	0.102	59.01
Pb	207	209	1	ppb	0.070	0.070	96.65
Pb	208	209	1	ppb	0.082	0.082	70.77
U	238	209	1	ppb	0.005	0.005	76.79

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	339,165	4.74	470219	72.1	70	125	
1	Ge	72	2,668,907	5.10	2998920	89.0	70	125	
2	Ge	72	357,436	0.41	398894	89.6	70	125	
1	In	115	2,777,608	5.22	3039557	91.4	70	125	
1	Bi	209	2,578,152	5.15	2809191	91.8	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Sample QC Report

File Name	192SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D24m00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 3:05
Sample Name	ICSAB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	89.740	89.740	1.25
Be	9	6	1	ppb	100.274	100.274	2.00
B	11	6	1	ppb	448.267	448.267	1.53
Na	23	72	1	ppb	95659.689	95659.689	0.74
Na	23	72	2	ppb	103927.946	103927.946	0.10
Mg	24	72	1	ppb	96037.545	96037.545	0.88
Al	27	72	1	ppb	85056.211	85056.211	0.27
P	31	72	1	ppb	89310.047	89310.047	1.12
K	39	72	1	ppb	104438.679	104438.679	0.47
Ca	44	72	1	ppb	104682.856	104682.856	1.14
Ca	44	72	2	ppb	103892.552	103892.552	0.43
Ti	47	72	1	ppb	2038.021	2038.021	1.78
Ti	47	72	2	ppb	2103.532	2103.532	0.67
V	51	72	1	ppb	94.442	94.442	1.44
V	51	72	2	ppb	96.264	96.264	0.01
Cr	52	72	1	ppb	95.161	95.161	1.61
Cr	52	72	2	ppb	95.845	95.845	1.32
Mn	55	72	1	ppb	94.482	94.482	0.85
Mn	55	72	2	ppb	95.925	95.925	0.20
Fe	56	72	1	ppb	106907.681	106907.681	0.92
Fe	56	72	2	ppb	108486.377	108486.377	0.26
Co	59	72	1	ppb	94.721	94.721	1.15
Co	59	72	2	ppb	96.622	96.622	0.05
Ni	60	72	1	ppb	92.867	92.867	0.17
Ni	60	72	2	ppb	95.391	95.391	0.57
Cu	63	72	1	ppb	94.643	94.643	0.66
Cu	63	72	2	ppb	98.655	98.655	0.31
Cu	65	72	1	ppb	97.079	97.079	1.13
Zn	66	72	1	ppb	99.500	99.500	1.14
Zn	66	72	2	ppb	100.914	100.914	0.72
Zn	68	72	1	ppb	99.749	99.749	0.54
As	75	72	1	ppb	98.964	98.964	0.57
As	75	72	2	ppb	98.877	98.877	0.63
Se	78	72	1	ppb	107.199	107.199	1.08
Se	78	72	2	ppb	99.686	99.686	1.73
Se	82	72	1	ppb	100.209	100.209	0.83
Sr	88	72	1	ppb	100.683	100.683	1.40
Mo	95	72	1	ppb	2166.598	2166.598	0.75
Mo	97	72	1	ppb	2191.870	2191.870	1.82
Rh	103	115	1	ppb	97.979	97.979	12.60
Pd	105	115	1	ppb	251.423	251.423	56.39
Ag	107	72	1	ppb	92.658	92.658	0.56
Ag	109	72	1	ppb	93.733	93.733	0.78
Cd	111	115	1	ppb	95.613	95.613	0.27

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	92.792	92.792	0.30
Sn	118	72	1	ppb	95.765	95.765	0.24
Sn	119	72	1	ppb	97.984	97.984	0.23
Sb	121	72	1	ppb	106.010	106.010	0.35
Sb	121	72	2	ppb	100.309	100.309	0.35
Sb	123	72	1	ppb	105.379	105.379	0.90
Ba	135	115	1	ppb	96.038	96.038	1.64
Ba	137	115	1	ppb	97.099	97.099	1.16
W	182	209	1	ppb	2034.230	2034.230	3.46
Pt	195	209	1	ppb	262.477	262.477	70.89
Au	197	209	1	ppb	-145.733	-145.733	-229.94
Tl	203	209	1	ppb	86.252	86.252	5.48
Tl	205	209	1	ppb	86.789	86.789	5.43
Pb	206	209	1	ppb	91.122	91.122	0.87
Pb	207	209	1	ppb	91.210	91.210	0.77
Pb	208	209	1	ppb	94.059	94.059	1.04
U	238	209	1	ppb	98.184	98.184	1.02

ISTD Table

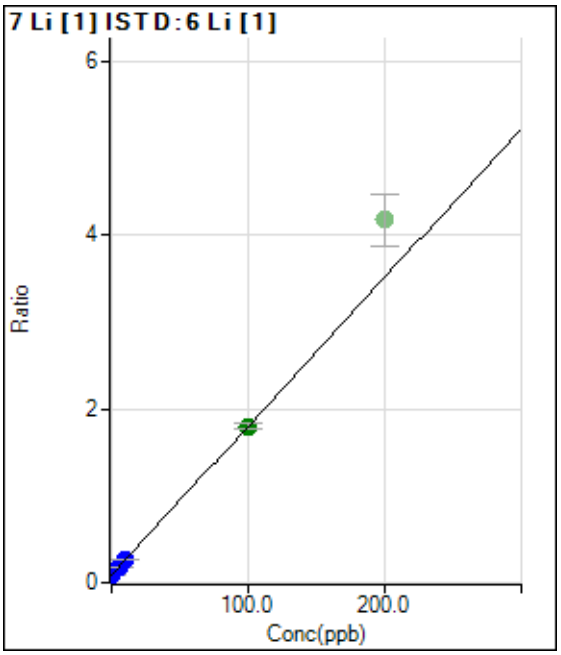
Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	324,182	0.66	470219	68.9	70	125	IS Failed
1	Ge	72	2,785,116	0.21	2998920	92.9	70	125	
2	Ge	72	357,368	0.23	398894	89.6	70	125	
1	In	115	2,882,844	0.24	3039557	94.8	70	125	
1	Bi	209	2,662,877	0.39	2809191	94.8	70	125	

TuneStep	TuneFile
1	042417a5.u
2	042417he.u

Calibration for 013SMPL.D

Batch Folder:	C:¥ICPMH¥1¥DATA¥17D24m00.B¥
Analysis File:	17D24m00.batch.xml
DA Date-Time:	4/24/2017 1:10:54 PM
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	
Tune Step:	#1 042417a5.u
	#2 042417he.u

Level	Standard Data File	Sample Name	Acq. Date-Time
1	003CALB.D	CAL BLK	4/24/2017 12:22:02 PM
2	004CALS.D	2/10/200	4/24/2017 12:26:35 PM
3	005CALS.D	5/25/500	4/24/2017 12:31:06 PM
4	006CALS.D	10/50/1000	4/24/2017 12:35:37 PM
5	007CALS.D	100/500/10K	4/24/2017 12:40:09 PM
6	008CALS.D	200/1000/20K	4/24/2017 12:44:28 PM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	58253.54	0.0894	P	0.2
2	☐	2.000	1.950	78667.28	0.1228	P	0.8
3	☐	5.000	4.760	109117.29	0.1710	P	1.6
4	☐	10.000	9.940	162062.60	0.2598	P	0.5
5	☐	100.000	100.019	1056125.35	1.8037	A	4.3
6	☑	200.000		2044120.71	4.1803	A	14.2
7	☐	1.000					

y = 0.0171 * x + 0.0894

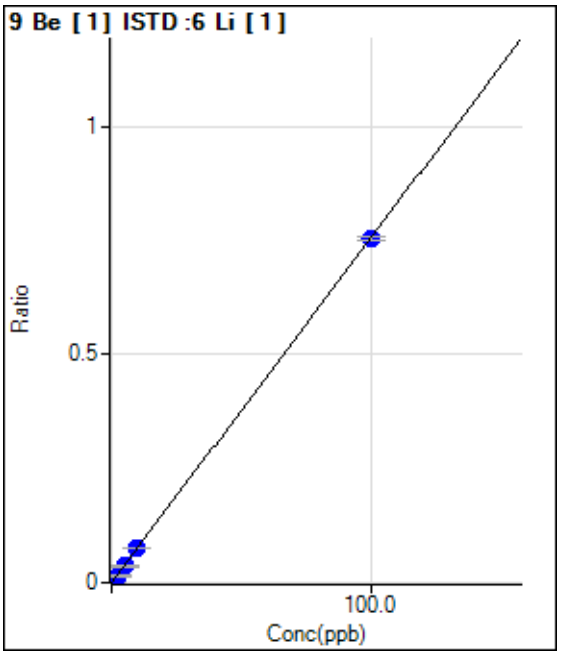
R = 1.0000

DL = 0.02403

BEC = 5.217

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	130.01	0.0002	P	14.2
2	☐	2.000	1.909	9326.16	0.0146	P	3.1
3	☐	5.000	4.746	22922.12	0.0359	P	1.0
4	☐	10.000	9.793	46107.27	0.0739	P	0.5
5	☐	100.000	100.035	441076.75	0.7531	P	1.3
6	☐			871001.57	1.7812	P	14.2
7	☐	1.000					

y = 0.0075 * x + 1.9930E-004

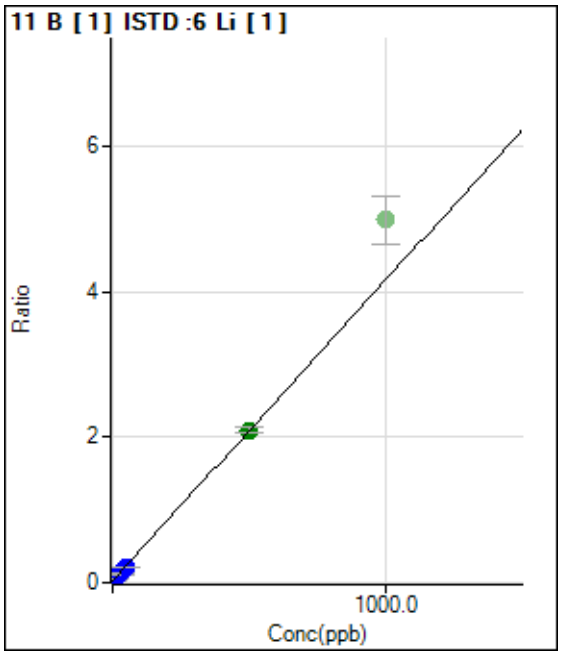
R = 1.0000

DL = 0.01125

BEC = 0.02648

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16785.09	0.0258	P	2.2
2	☐	10.000	8.804	39818.64	0.0622	P	3.5
3	☐	25.000	22.793	76603.74	0.1201	P	2.9
4	☐	50.000	47.375	138348.14	0.2218	P	1.5
5	☐	500.000	500.397	1227465.11	2.0961	A	3.2
6	☑	1000.000		2442034.67	4.9904	A	13.3
7	☐	5.000					

y = 0.0041 * x + 0.0258

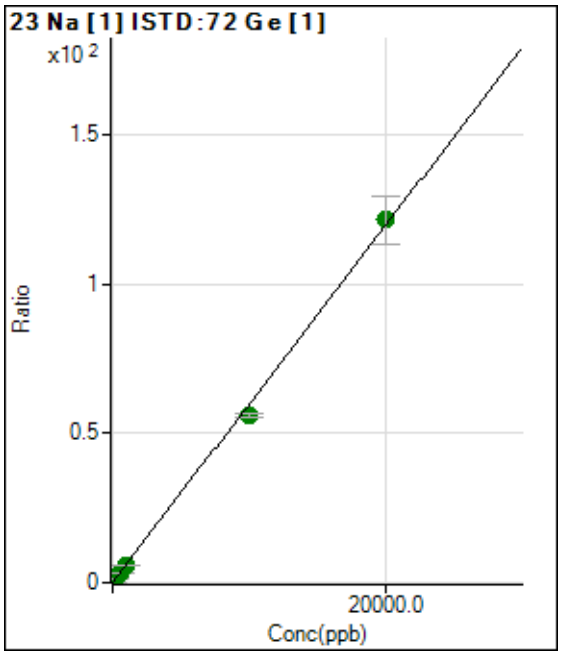
R = 1.0000

DL = 0.4059

BEC = 6.228

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	339248.50	0.1084	P	7.9
2	☐	200.000	194.533	3915609.80	1.2692	A	1.3
3	☐	500.000	483.395	9257136.32	2.9929	A	0.9
4	☐	1000.000	981.197	18190427.51	5.9634	A	1.2
5	☐	10000.00	9358.160	168729963.0	55.9504	A	2.3
6	☐	20000.00	20322.33	331849648.3	121.375	A	13.6
7	☐	100.000					

y = 0.0060 * x + 0.1084

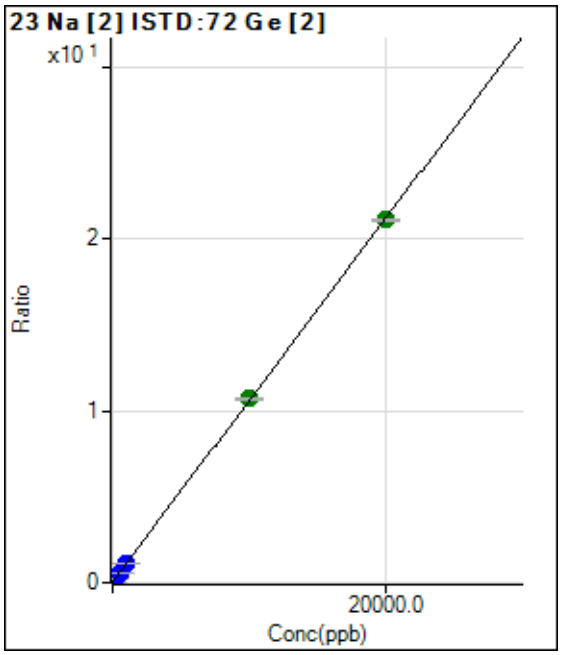
R = 0.9993

DL = 4.325

BEC = 18.17

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12414.85	0.0298	P	0.7
2	☐	200.000	209.192	104182.42	0.2510	P	0.8
3	☐	500.000	521.612	238341.96	0.5814	P	1.2
4	☐	1000.000	1057.454	468854.31	1.1481	P	1.0
5	☐	10000.00	10118.31	4319450.87	10.7309	A	1.2
6	☐	20000.00	19937.34	8378892.58	21.1155	A	0.5
7	☐	100.000					

y = 0.0011 * x + 0.0298

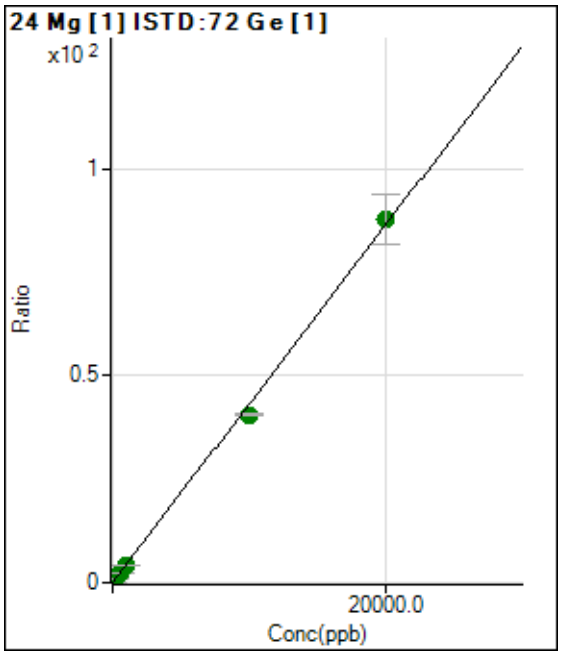
R = 1.0000

DL = 0.5665

BEC = 28.15

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	41146.25	0.0131	P	39.3
2	☐	200.000	198.637	2685360.62	0.8705	A	1.5
3	☐	500.000	490.715	6591583.51	2.1311	A	1.0
4	☐	1000.000	991.910	13098944.11	4.2944	A	1.7
5	☐	10000.00	9406.508	122478779.2	40.6128	A	2.1
6	☐	20000.00	20297.39	239494569.7	87.6192	A	13.9
7	☐	100.000					

y = 0.0043 * x + 0.0131

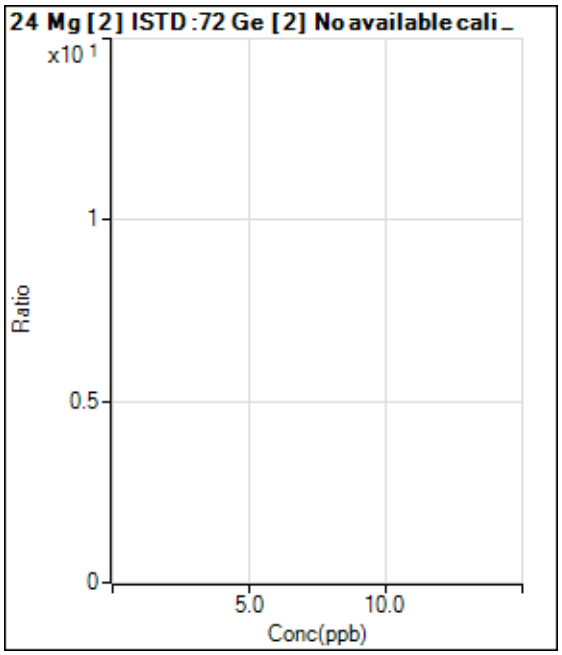
R = 0.9994

DL = 3.587

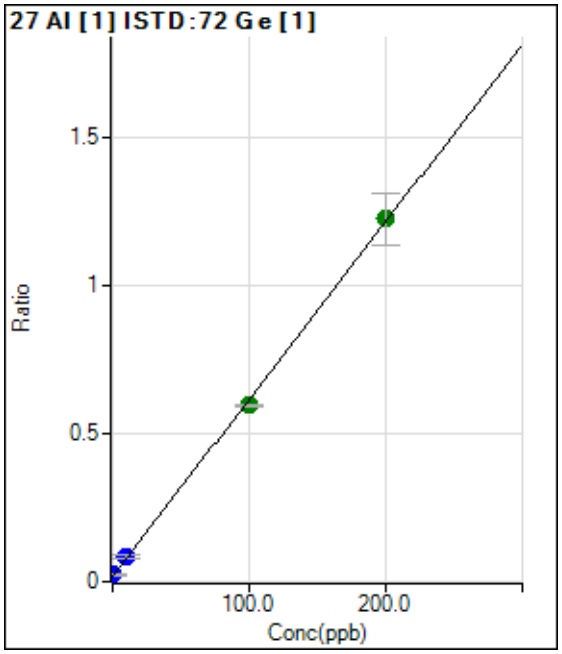
BEC = 3.046

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.00					
6	☐	20000.00					
7	☐	100.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.957	72436.05	0.0231	P	47.7
2	☐			114945.62	0.0372	P	28.2
3	☐			163130.43	0.0527	P	20.5
4	☐	10.000	10.907	252282.08	0.0826	P	12.1
5	☐	100.000	96.361	1789812.98	0.5933	A	1.1
6	☐	200.000	201.774	3343650.09	1.2234	A	14.0
7	☐	1.000					

y = 0.0060 * x + 0.0174

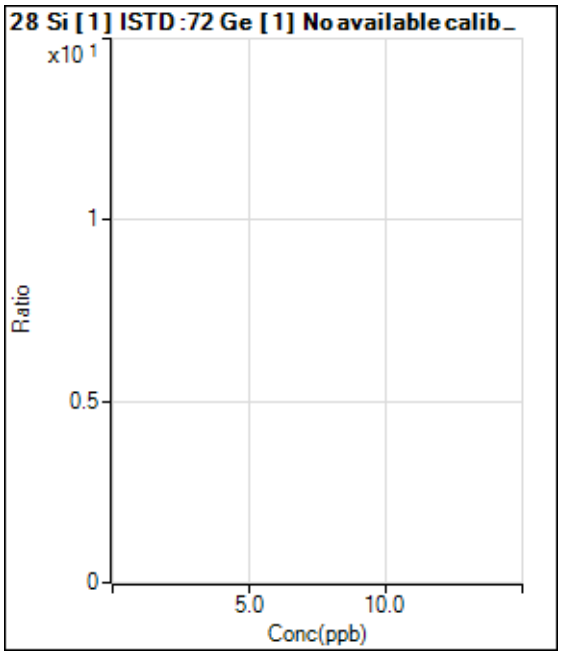
R = 0.9997

DL = 5.537

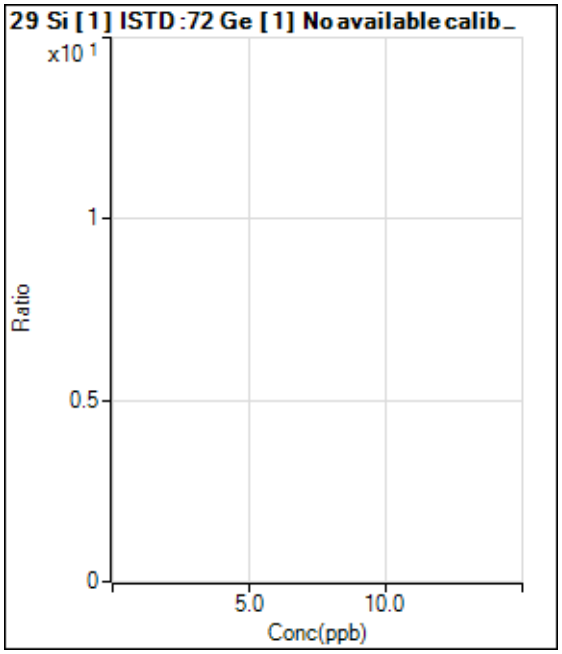
BEC = 2.915

Weight: None

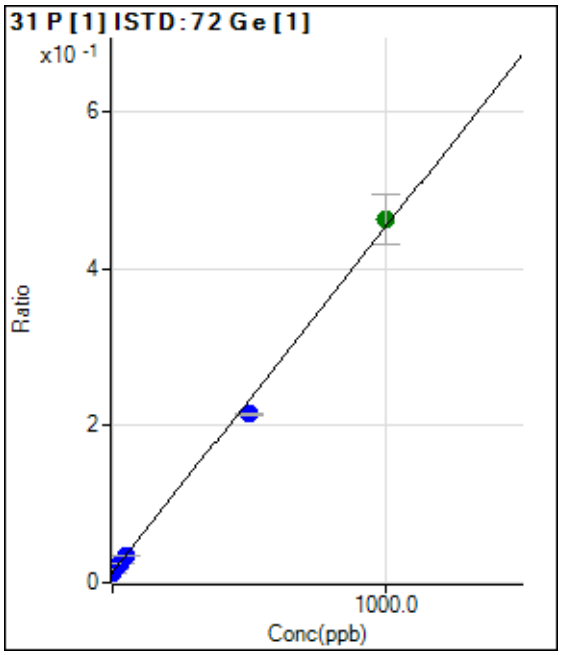
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	41502.36	0.0133	P	1.9
2	☐	10.000	9.841	54276.06	0.0176	P	0.5
3	☐	25.000	24.232	74001.95	0.0239	P	0.4
4	☐	50.000	50.184	107812.99	0.0353	P	1.1
5	☐	500.000	457.619	647299.42	0.2146	P	1.8
6	☐	1000.000	1021.202	1264496.19	0.4626	A	13.9
7	☐	5.000					

y = 4.4003E−004 * x + 0.0133

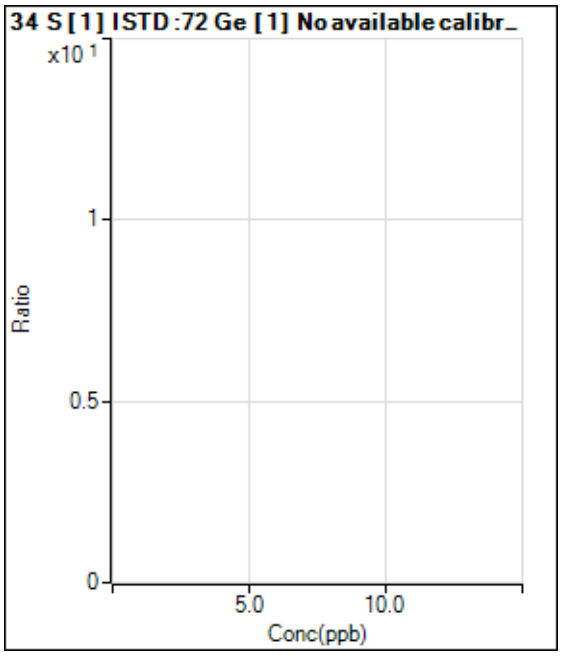
R = 0.9987

DL = 1.734

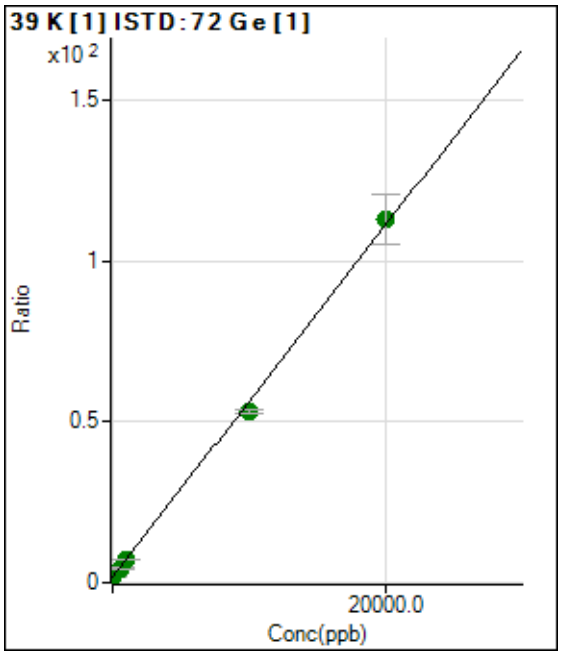
BEC = 30.14

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.00					
6	☐	40000.00					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5580379.08	1.7832	A	0.3
2	☐	200.000	197.361	8830820.49	2.8625	A	1.2
3	☐	500.000	492.778	13850495.62	4.4782	A	1.4
4	☐	1000.000	987.681	21915383.84	7.1848	A	1.5
5	☐	10000.00	9392.035	160294170.9	53.1479	A	1.4
6	☐	20000.00	20304.80	308417975.4	112.829	A	13.9
7	☐	100.000					

y = 0.0055 * x + 1.7832

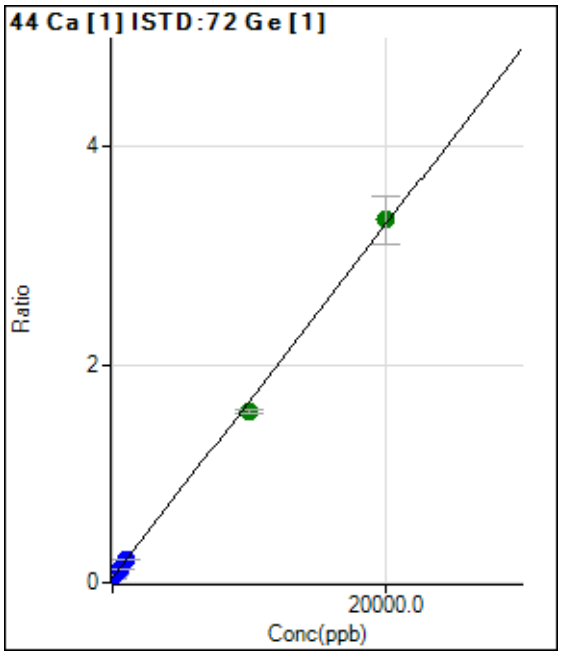
R = 0.9994

DL = 3.351

BEC = 326.1

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	140989.14	0.0451	P	6.7
2	☐	200.000	193.551	235713.79	0.0764	P	2.6
3	☐	500.000	487.194	383365.05	0.1239	P	1.2
4	☐	1000.000	996.072	629375.53	0.2063	P	0.2
5	☐	10000.00	9442.364	4746084.03	1.5737	A	2.2
6	☐	20000.00	20279.39	9100171.19	3.3282	A	13.5
7	☐	100.000					

y = 1.6190E-004 * x + 0.0451

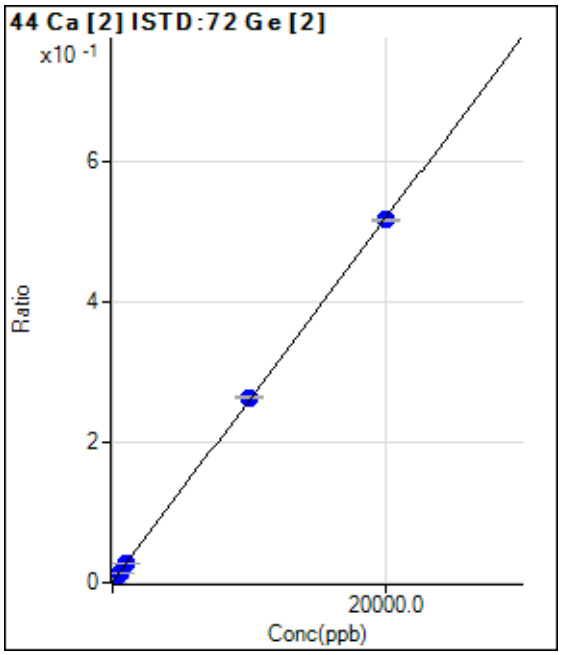
R = 0.9995

DL = 55.59

BEC = 278.3

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	483.37	0.0012	P	17.7
2	☐	200.000	218.083	2828.14	0.0068	P	5.1
3	☐	500.000	512.867	5926.85	0.0145	P	4.2
4	☐	1000.000	1055.405	11647.75	0.0285	P	0.8
5	☐	10000.00	10148.74	106379.08	0.2643	P	0.9
6	☐	20000.00	19922.35	205416.78	0.5177	P	0.2
7	☐	100.000					

y = 2.5926E-005 * x + 0.0012

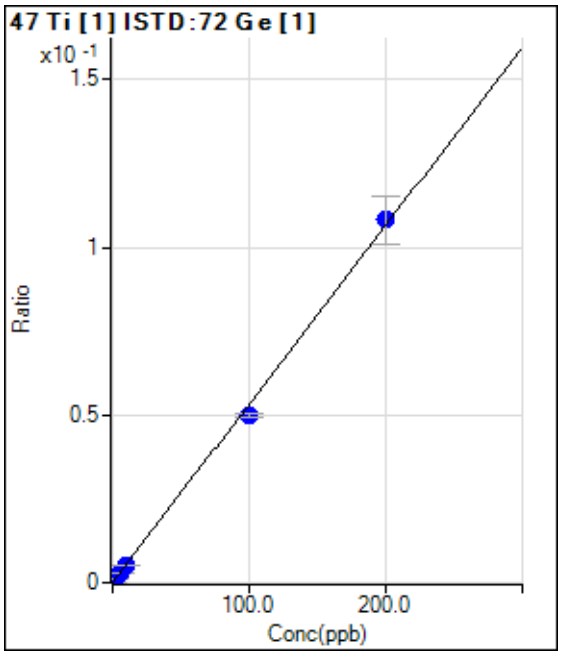
R = 1.0000

DL = 23.72

BEC = 44.73

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	276.68	0.0001	P	13.5
2	☐	2.000	1.845	3298.25	0.0011	P	4.4
3	☐	5.000	4.812	8186.73	0.0026	P	4.8
4	☐	10.000	9.638	15894.58	0.0052	P	3.1
5	☐	100.000	93.445	150064.66	0.0498	P	2.3
6	☐	200.000	203.302	295814.65	0.1082	P	13.2
7	☐	1.000					

y = 5.3157E-004 * x + 8.8407E-005

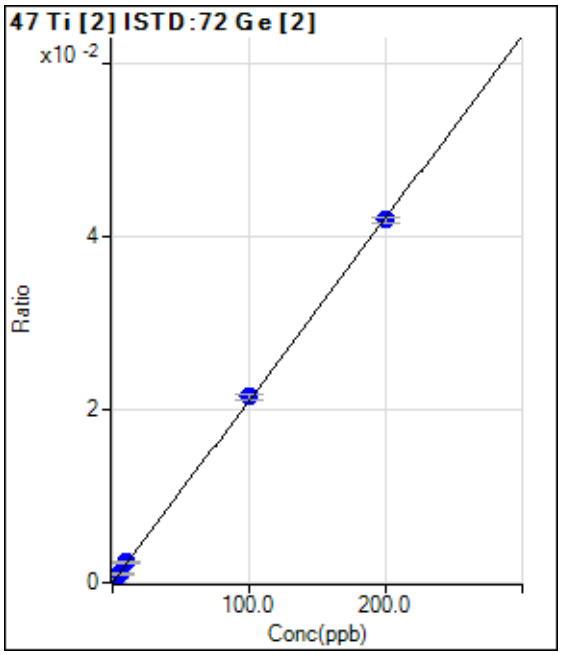
R = 0.9993

DL = 0.06748

BEC = 0.1663

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2.22	0.0000	P	86.6
2	☐	2.000	2.261	200.01	0.0005	P	7.4
3	☐	5.000	4.915	426.69	0.0010	P	14.1
4	☐	10.000	11.157	962.30	0.0024	P	4.1
5	☐	100.000	101.827	8641.42	0.0215	P	3.3
6	☐	200.000	199.028	16648.68	0.0420	P	1.3
7	☐	1.000					

y = 2.1077E-004 * x + 5.3319E-006

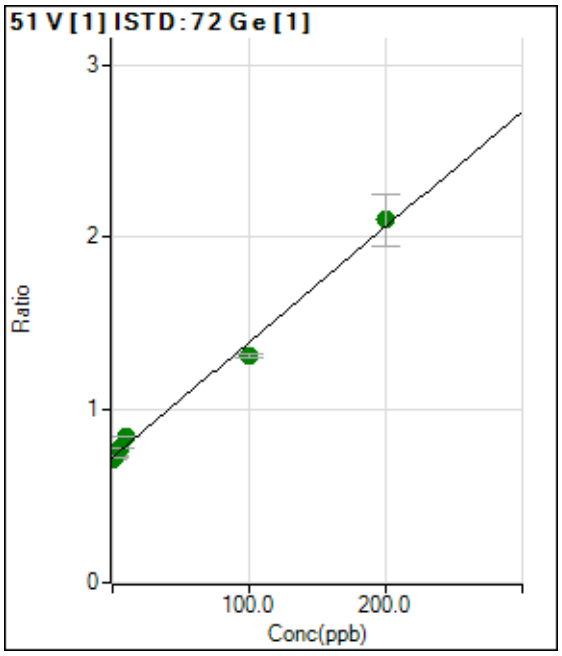
R = 0.9999

DL = 0.06572

BEC = 0.0253

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-2.122	2232337.02	0.7133	A	1.3
2	☐	2.000	0.050	2245758.47	0.7278	A	1.5
3	☐	5.000	7.786	2411218.54	0.7795	A	0.4
4	☐	10.000	17.942	2584891.13	0.8473	A	0.1
5	☐	100.000	87.583	3957964.98	1.3124	A	1.7
6	☐	200.000	205.761	5741476.02	2.1015	A	14.5
7	☐	1.000					

y = 0.0067 * x + 0.7275

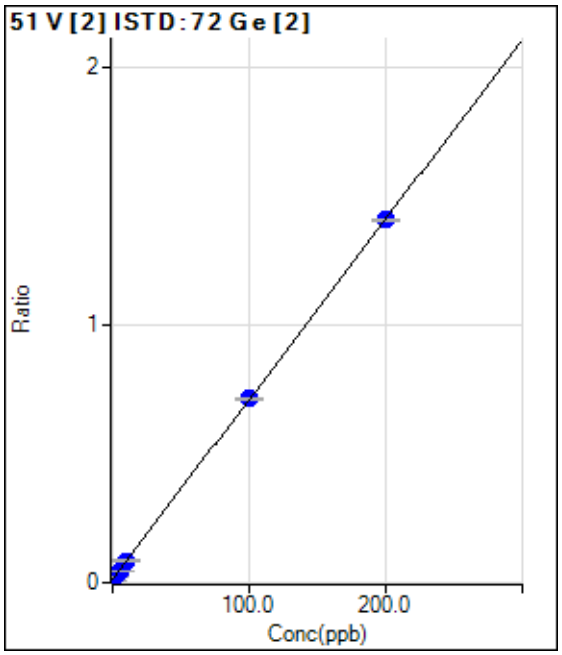
R = 0.9960

DL = 4.032

BEC = 108.9

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.283	4543.04	0.0109	P	2.9
2	☐	2.000	1.817	10617.03	0.0256	P	2.1
3	☐	5.000	4.953	19476.18	0.0475	P	1.4
4	☐	10.000	10.342	34787.09	0.0852	P	3.1
5	☐	100.000	100.370	287729.58	0.7148	P	0.7
6	☐	200.000	199.801	559568.29	1.4102	P	0.4
7	☐	1.000					

y = 0.0070 * x + 0.0129

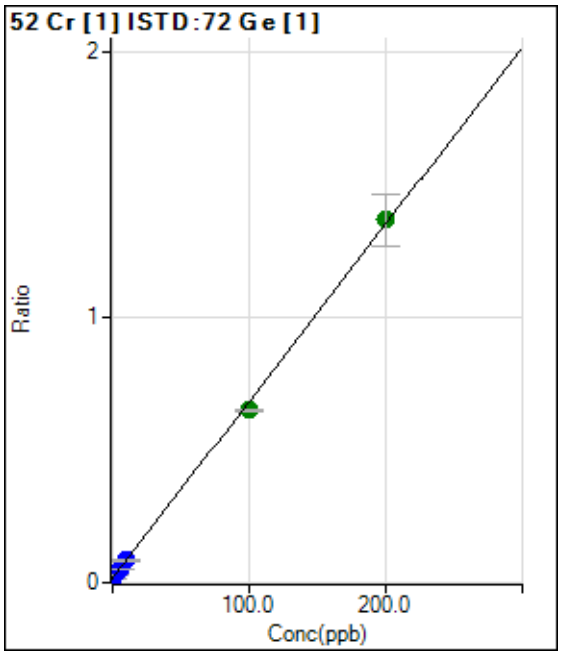
R = 1.0000

DL = 0.1337

BEC = 1.841

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	51866.53	0.0166	P	0.2
2	☐	2.000	1.981	91830.68	0.0298	P	1.3
3	☐	5.000	4.949	153209.44	0.0495	P	0.4
4	☐	10.000	10.039	254490.74	0.0834	P	1.0
5	☐	100.000	94.880	1955553.56	0.6484	A	1.7
6	☐	200.000	202.560	3731139.98	1.3655	A	14.3
7	☐	1.000					

y = 0.0067 * x + 0.0166

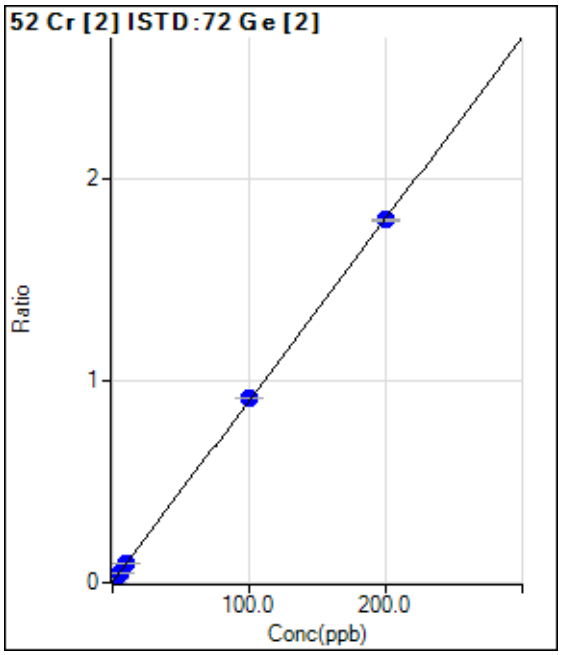
R = 0.9995

DL = 0.01486

BEC = 2.489

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1017.86	0.0024	P	8.3
2	☐	2.000	2.109	8896.03	0.0214	P	4.8
3	☐	5.000	5.166	20073.62	0.0490	P	0.5
4	☐	10.000	10.654	40179.07	0.0984	P	1.6
5	☐	100.000	100.969	367038.44	0.9118	P	0.2
6	☐	200.000	199.478	713865.64	1.7990	P	0.5
7	☐	1.000					

y = 0.0090 * x + 0.0024

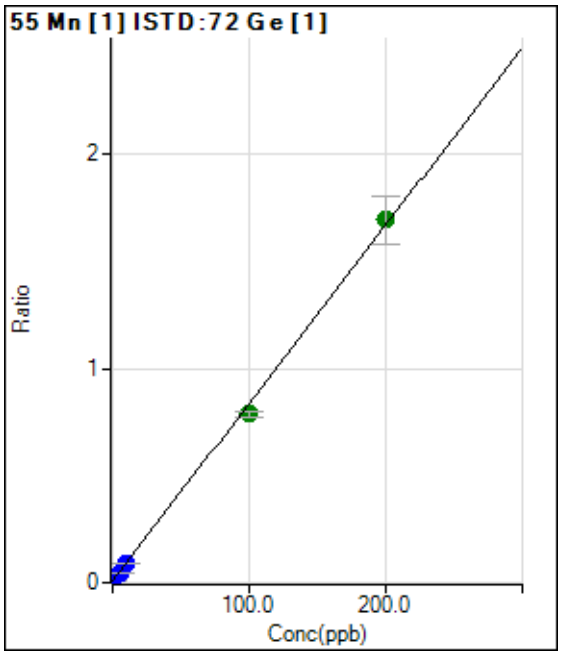
R = 1.0000

DL = 0.06764

BEC = 0.271

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25405.30	0.0081	P	6.2
2	☐	2.000	1.978	75691.66	0.0245	P	1.9
3	☐	5.000	4.906	151021.68	0.0488	P	0.7
4	☐	10.000	10.011	278156.03	0.0912	P	0.8
5	☐	100.000	93.698	2368838.12	0.7856	A	3.6
6	☐	200.000	203.153	4632141.63	1.6938	A	13.3
7	☐	1.000					

y = 0.0083 * x + 0.0081

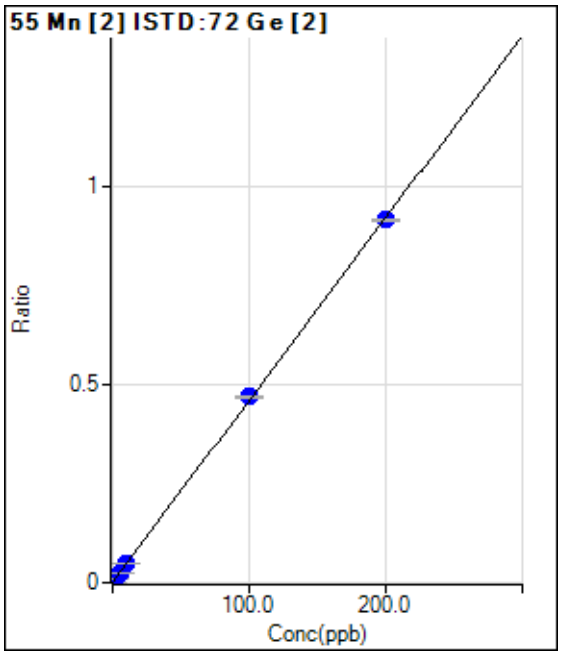
R = 0.9993

DL = 0.1828

BEC = 0.9783

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	282.24	0.0007	P	27.2
2	☐	2.000	2.146	4381.87	0.0106	P	1.7
3	☐	5.000	5.289	10262.40	0.0250	P	2.2
4	☐	10.000	10.590	20194.85	0.0494	P	2.5
5	☐	100.000	101.880	189129.05	0.4699	P	1.1
6	☐	200.000	199.022	363963.06	0.9172	P	0.5
7	☐	1.000					

y = 0.0046 * x + 6.7664E-004

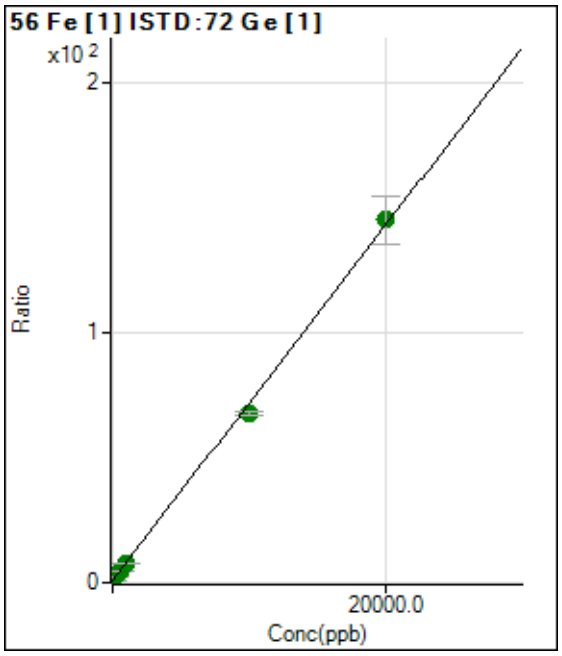
R = 0.9999

DL = 0.12

BEC = 0.1469

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2769041.73	0.8848	A	1.0
2	☐	200.000	197.980	7074737.88	2.2932	A	0.7
3	☐	500.000	488.906	13493941.89	4.3628	A	1.1
4	☐	1000.000	991.204	24206763.81	7.9360	A	1.5
5	☐	10000.00	9383.991	203991023.6	67.6403	A	2.0
6	☐	20000.00	20308.74	397618247.4	145.356	A	13.0
7	☐	100.000					

y = 0.0071 * x + 0.8848

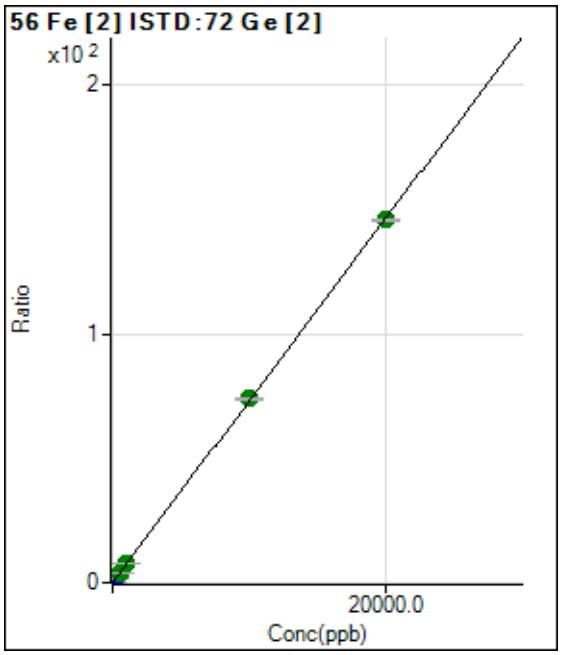
R = 0.9993

DL = 3.712

BEC = 124.4

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10040.02	0.0241	P	4.0
2	☐	200.000	208.689	642894.57	1.5490	P	0.3
3	☐	500.000	532.041	1603525.00	3.9117	A	1.2
4	☐	1000.000	1064.587	3186385.96	7.8031	A	1.6
5	☐	10000.00	10112.69	29754568.72	73.9182	A	0.4
6	☐	20000.00	19939.53	57824577.47	145.723	A	0.6
7	☐	100.000					

y = 0.0073 * x + 0.0241

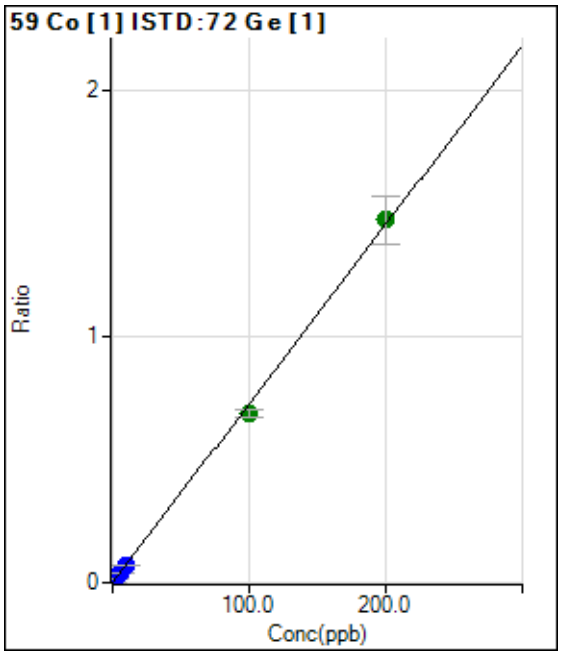
R = 1.0000

DL = 0.397

BEC = 3.295

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	494.47	0.0002	P	31.9
2	☐	2.000	2.017	45659.73	0.0148	P	3.0
3	☐	5.000	4.946	111549.45	0.0361	P	2.1
4	☐	10.000	10.045	222942.08	0.0731	P	1.5
5	☐	100.000	94.521	2069823.62	0.6865	A	4.2
6	☐	200.000	202.738	4026879.21	1.4722	A	13.0
7	☐	1.000					

y = 0.0073 * x + 1.5799E-004

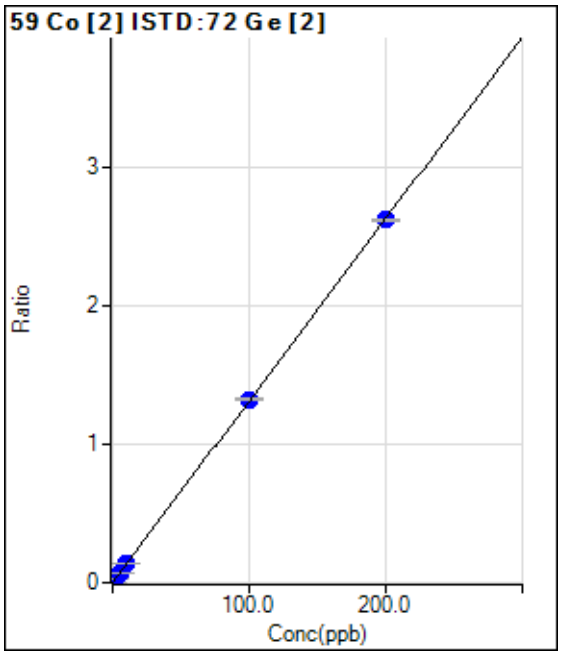
R = 0.9995

DL = 0.02084

BEC = 0.02176

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	42.23	0.0001	P	59.1
2	☐	2.000	2.110	11566.66	0.0279	P	1.5
3	☐	5.000	5.225	28226.45	0.0689	P	1.4
4	☐	10.000	10.737	57746.02	0.1414	P	1.0
5	☐	100.000	100.834	534201.46	1.3271	P	0.8
6	☐	200.000	199.539	1042065.26	2.6261	P	0.6
7	☐	1.000					

y = 0.0132 * x + 1.0121E-004

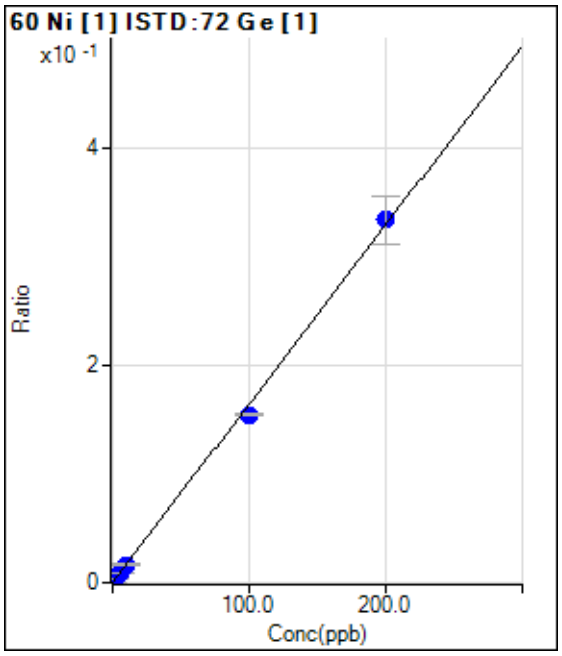
R = 1.0000

DL = 0.01362

BEC = 0.00769

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	225.57	0.0001	P	31.8
2	☐	2.000	2.030	10511.40	0.0034	P	4.7
3	☐	5.000	4.984	25550.98	0.0083	P	1.6
4	☐	10.000	10.086	50766.16	0.0166	P	3.1
5	☐	100.000	94.037	466266.43	0.1546	P	1.2
6	☐	200.000	202.977	912226.95	0.3336	P	13.4
7	☐	1.000					

y = 0.0016 * x + 7.2069E-005

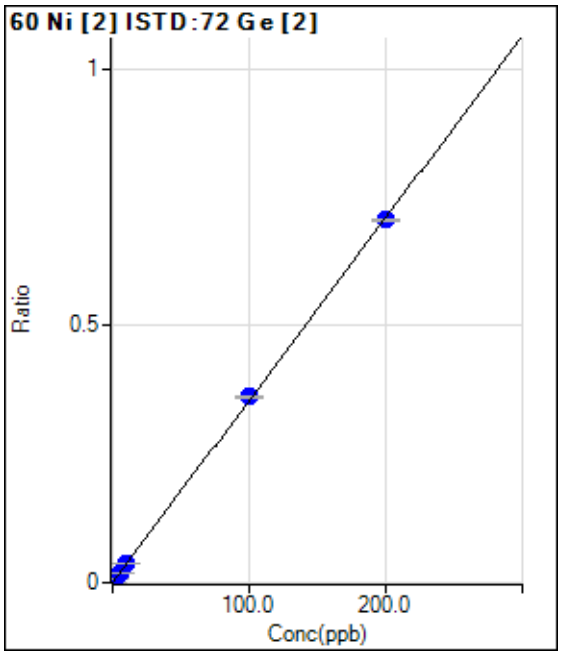
R = 0.9994

DL = 0.04181

BEC = 0.04386

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	71.11	0.0002	P	39.2
2	☐	2.000	2.031	3059.31	0.0074	P	6.0
3	☐	5.000	5.233	7677.61	0.0187	P	2.4
4	☐	10.000	10.486	15256.35	0.0374	P	0.5
5	☐	100.000	101.843	145452.38	0.3613	P	0.3
6	☐	200.000	199.048	280168.59	0.7061	P	0.8
7	☐	1.000					

y = 0.0035 * x + 1.7064E-004

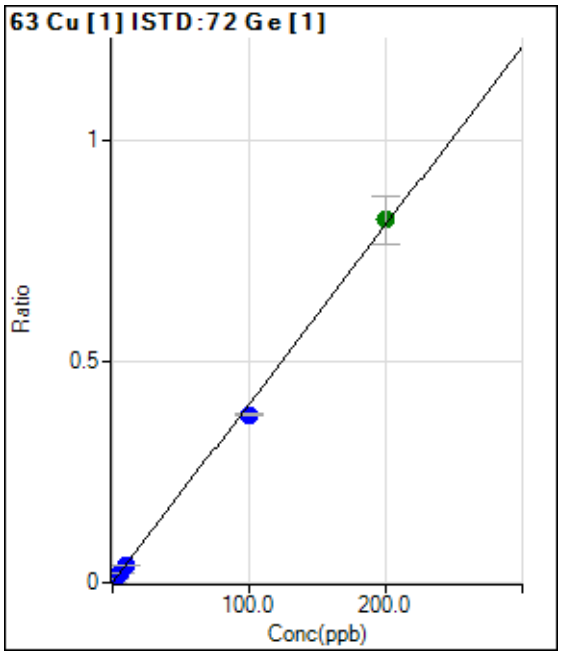
R = 0.9999

DL = 0.05654

BEC = 0.04812

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1650.16	0.0005	P	14.7
2	☐	2.000	1.994	26418.00	0.0086	P	2.9
3	☐	5.000	4.903	62773.88	0.0203	P	1.4
4	☐	10.000	9.993	124499.45	0.0408	P	1.9
5	☐	100.000	94.034	1144992.32	0.3796	P	1.4
6	☐	200.000	202.986	2240122.42	0.8189	A	12.9
7	☐	1.000					

y = 0.0040 * x + 5.2728E-004

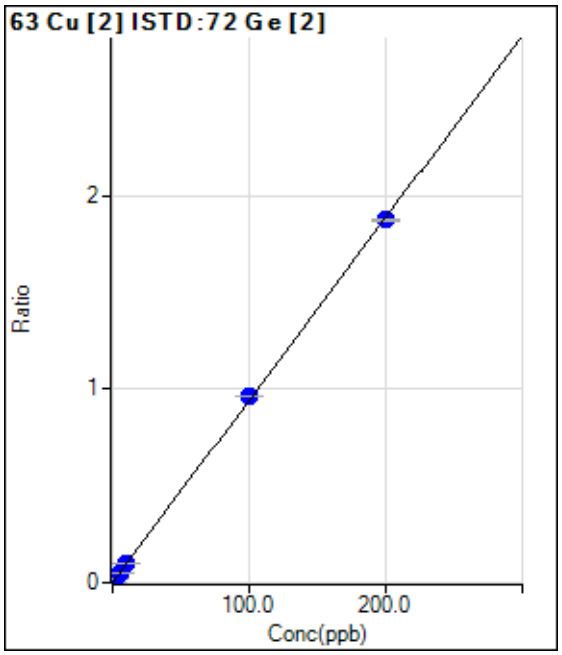
R = 0.9994

DL = 0.05754

BEC = 0.1308

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	450.03	0.0011	P	17.4
2	☐	2.000	2.101	8663.72	0.0209	P	4.0
3	☐	5.000	5.209	20557.61	0.0502	P	1.6
4	☐	10.000	10.790	41951.42	0.1027	P	0.3
5	☐	100.000	101.944	387022.09	0.9614	P	0.3
6	☐	200.000	198.982	744282.26	1.8756	P	0.5
7	☐	1.000					

y = 0.0094 * x + 0.0011

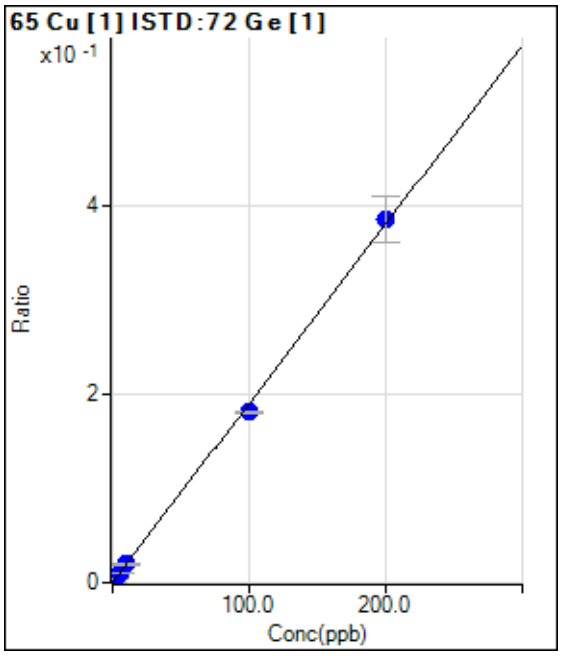
R = 0.9999

DL = 0.05974

BEC = 0.1145

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	732.27	0.0002	P	9.4
2	☐	2.000	2.014	12497.31	0.0041	P	1.1
3	☐	5.000	5.016	30128.63	0.0097	P	1.6
4	☐	10.000	10.148	59387.58	0.0195	P	1.8
5	☐	100.000	95.003	543815.71	0.1803	P	1.7
6	☐	200.000	202.491	1050746.58	0.3841	P	12.8
7	☐	1.000					

y = 0.0019 * x + 2.3400E-004

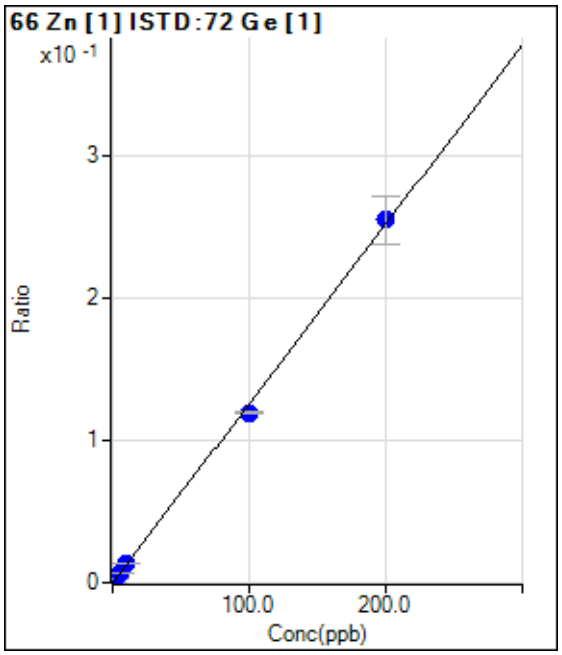
R = 0.9996

DL = 0.03471

BEC = 0.1234

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.758	1964.65	0.0006	P	11.7
2	☐	2.000	2.670	9390.80	0.0030	P	2.7
3	☐	5.000	5.606	20883.58	0.0068	P	0.7
4	☐	10.000	10.593	39812.02	0.0131	P	1.9
5	☐	100.000	94.849	360434.98	0.1195	P	0.8
6	☐	200.000	202.524	698834.17	0.2555	P	13.2
7	☐	1.000					

y = 0.0013 * x - 3.2997E-004

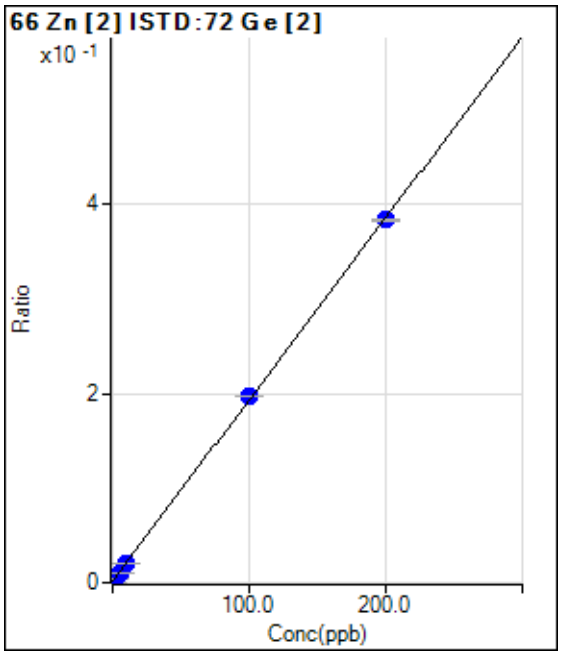
R = 0.9995

DL = 0.1747

BEC = -0.2612

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.373	362.24	0.0009	P	8.3
2	☐	2.000	1.605	1935.76	0.0047	P	3.9
3	☐	5.000	4.874	4484.14	0.0109	P	0.2
4	☐	10.000	9.993	8478.05	0.0208	P	1.9
5	☐	100.000	101.787	79271.37	0.1969	P	0.6
6	☐	200.000	199.114	152268.78	0.3837	P	0.6
7	☐	1.000					

y = 0.0019 * x + 0.0016

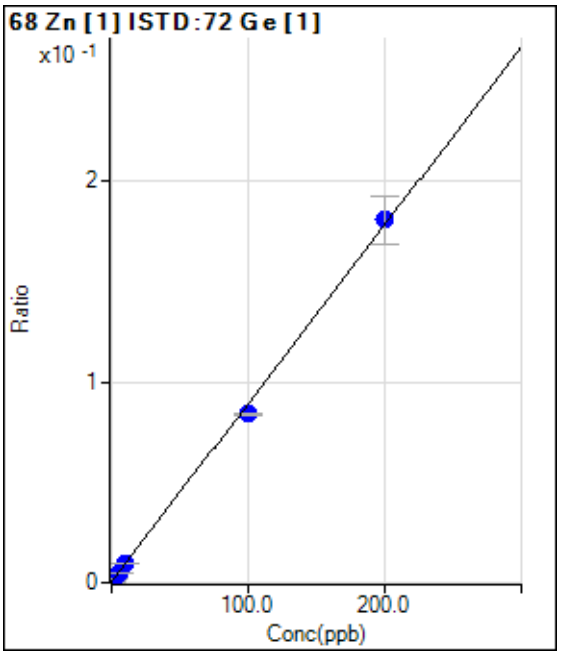
R = 0.9999

DL = 0.1134

BEC = 0.8253

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1460.13	0.0005	P	8.9
2	☐	2.000	1.881	6592.69	0.0021	P	2.4
3	☐	5.000	4.838	14738.08	0.0048	P	2.6
4	☐	10.000	9.927	28317.80	0.0093	P	2.9
5	☐	100.000	93.990	253174.63	0.0839	P	1.9
6	☐	200.000	203.014	494430.48	0.1808	P	13.2
7	☐	1.000					

y = 8.8820E-004 * x + 4.6657E-004

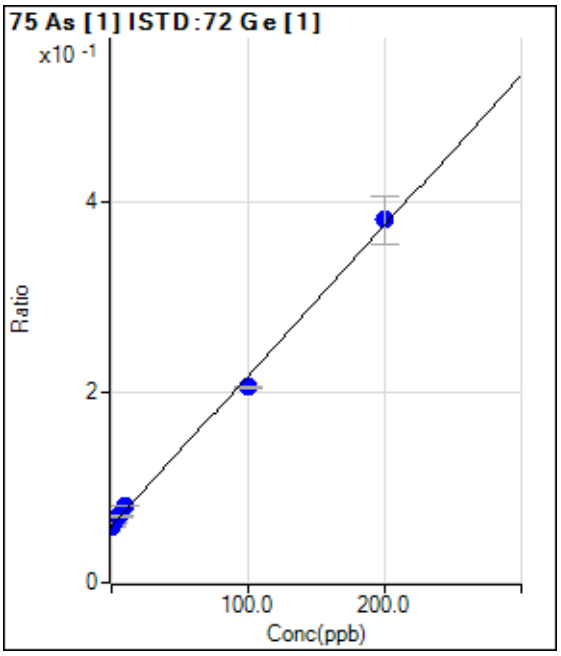
R = 0.9994

DL = 0.1398

BEC = 0.5253

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	186208.84	0.0595	P	1.6
2	☐	2.000	1.732	192013.41	0.0622	P	1.8
3	☐	5.000	6.524	215889.19	0.0698	P	0.6
4	☐	10.000	13.458	246283.92	0.0807	P	0.6
5	☐	100.000	92.286	618452.79	0.2051	P	1.3
6	☐	200.000	203.649	1041102.24	0.3807	P	13.3
7	☐	1.000					

y = 0.0016 * x + 0.0595

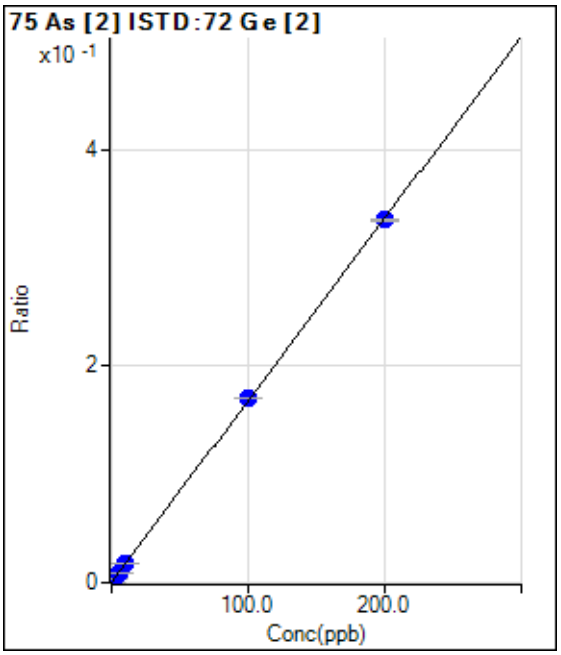
R = 0.9987

DL = 1.78

BEC = 37.73

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	111.85	0.0003	P	12.3
2	☐	2.000	2.120	1587.87	0.0038	P	2.9
3	☐	5.000	5.113	3627.85	0.0089	P	2.9
4	☐	10.000	10.437	7262.76	0.0178	P	2.1
5	☐	100.000	101.303	68547.53	0.1703	P	0.3
6	☐	200.000	199.323	132852.83	0.3348	P	0.3
7	☐	1.000					

y = 0.0017 * x + 2.6822E-004

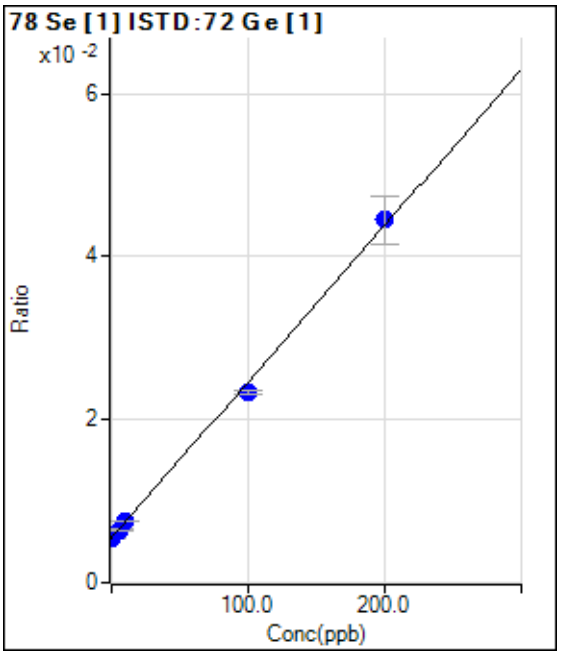
R = 1.0000

DL = 0.05903

BEC = 0.1598

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17247.43	0.0055	P	0.6
2	☐	2.000	2.061	18219.95	0.0059	P	1.4
3	☐	5.000	4.821	19901.47	0.0064	P	2.1
4	☐	10.000	10.318	22841.83	0.0075	P	0.6
5	☐	100.000	92.838	70254.19	0.0233	P	2.3
6	☐	200.000	203.569	121733.35	0.0445	P	13.1
7	☐	1.000					

y = 1.9156E-004 * x + 0.0055

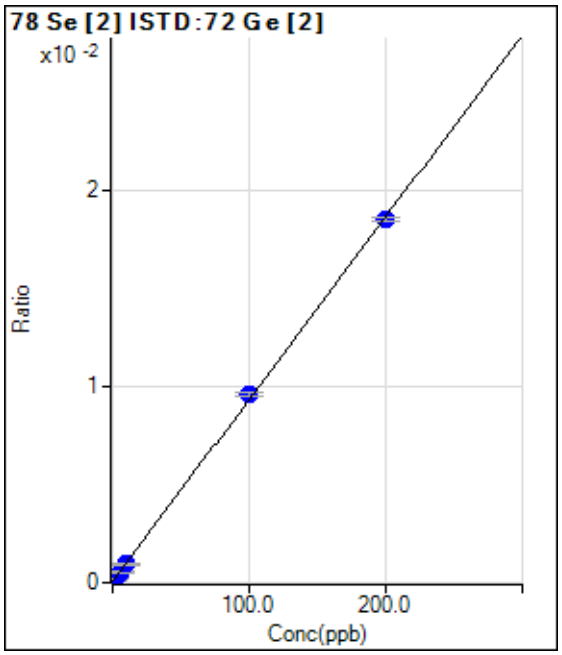
R = 0.9991

DL = 0.5109

BEC = 28.77

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	24.44	0.0001	P	27.4
2	☐	2.000	1.992	101.11	0.0002	P	16.4
3	☐	5.000	5.148	220.00	0.0005	P	10.0
4	☐	10.000	9.400	380.38	0.0009	P	7.4
5	☐	100.000	102.954	3872.72	0.0096	P	1.5
6	☐	200.000	198.549	7340.95	0.0185	P	0.9
7	☐	1.000					

y = 9.2881E-005 * x + 5.8637E-005

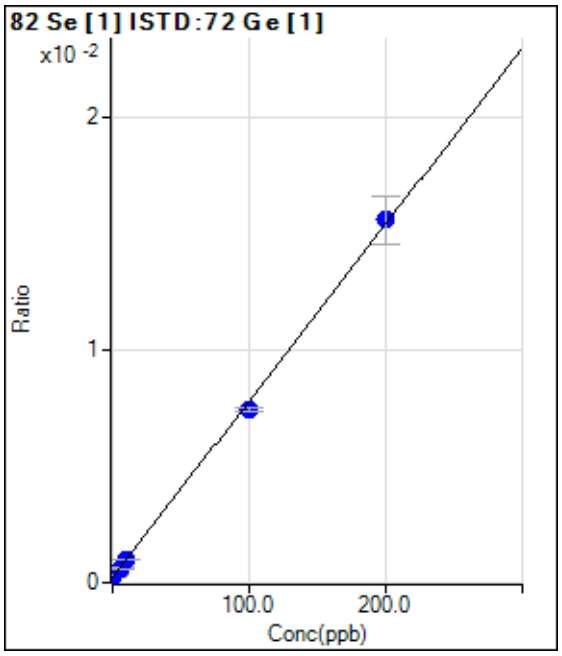
R = 0.9998

DL = 0.5186

BEC = 0.6313

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	704.10	0.0002	P	2.0
2	☐	2.000	2.166	1200.06	0.0004	P	9.2
3	☐	5.000	5.149	1903.84	0.0006	P	2.0
4	☐	10.000	9.667	2922.52	0.0010	P	1.4
5	☐	100.000	94.840	22366.80	0.0074	P	2.8
6	☐	200.000	202.591	42625.47	0.0156	P	13.4
7	☐	1.000					

y = 7.5835E-005 * x + 2.2499E-004

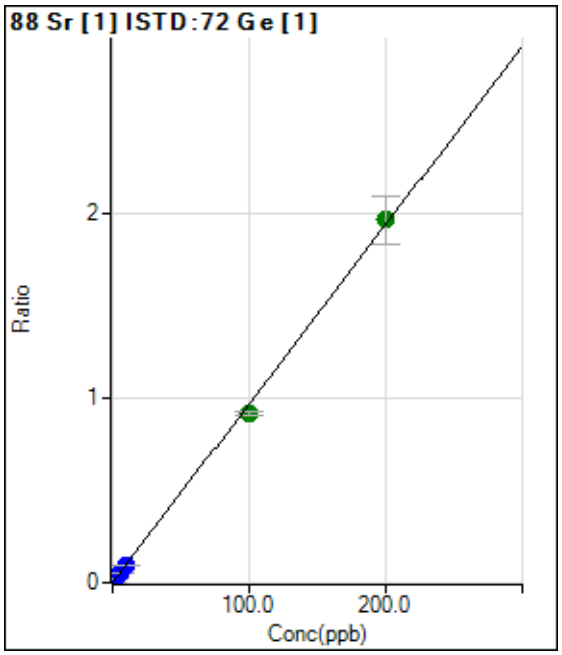
R = 0.9995

DL = 0.1795

BEC = 2.967

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2216.97	0.0007	P	55.0
2	☐	2.000	1.947	60456.48	0.0196	P	0.7
3	☐	5.000	4.861	148016.86	0.0479	P	1.0
4	☐	10.000	9.825	292855.00	0.0960	P	0.9
5	☐	100.000	94.366	2762447.63	0.9160	A	2.5
6	☐	200.000	202.830	5382878.74	1.9681	A	13.1
7	☐	1.000					

y = 0.0097 * x + 7.0825E-004

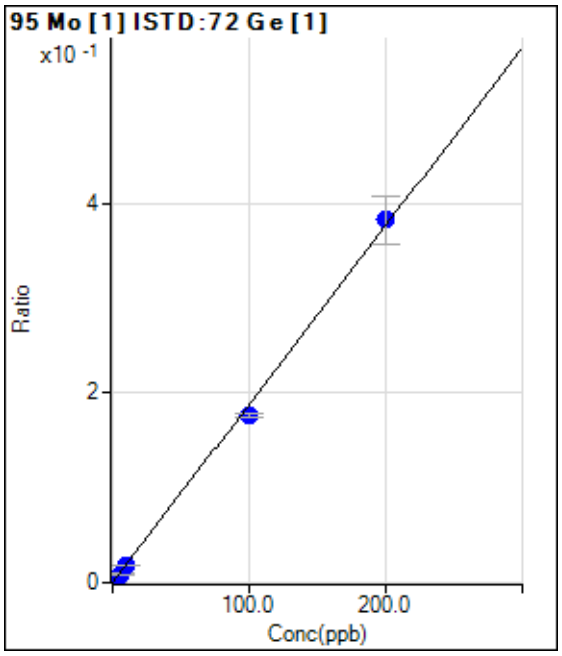
R = 0.9994

DL = 0.1205

BEC = 0.07302

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	430.03	0.0001	P	26.4
2	☐	2.000	1.902	11463.34	0.0037	P	3.6
3	☐	5.000	4.748	28047.97	0.0091	P	2.1
4	☐	10.000	9.665	55872.16	0.0183	P	1.8
5	☐	100.000	93.291	529603.74	0.1756	P	2.2
6	☐	200.000	203.379	1046612.36	0.3827	P	13.2
7	☐	1.000					

y = 0.0019 * x + 1.3740E-004

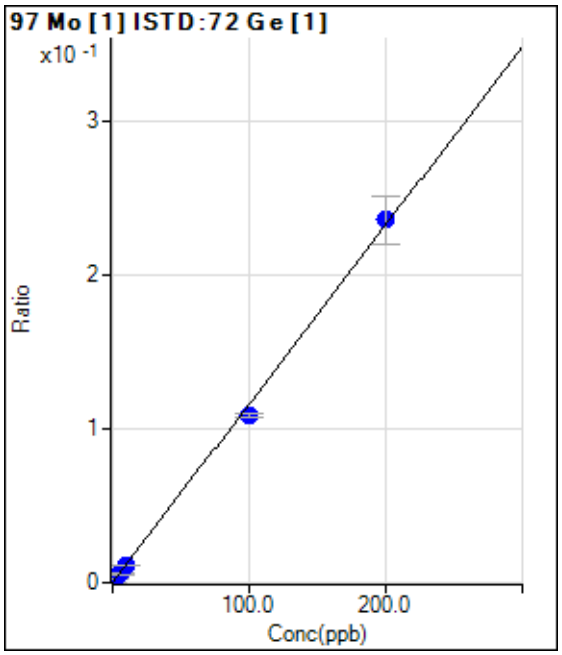
R = 0.9992

DL = 0.0578

BEC = 0.07305

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	332.24	0.0001	P	32.0
2	☐	2.000	1.836	6901.74	0.0022	P	2.5
3	☐	5.000	4.773	17458.72	0.0056	P	1.7
4	☐	10.000	9.737	34792.85	0.0114	P	0.3
5	☐	100.000	93.982	329230.46	0.1092	P	2.2
6	☐	200.000	203.029	644810.97	0.2357	P	12.9
7	☐	1.000					

y = 0.0012 * x + 1.0615E-004

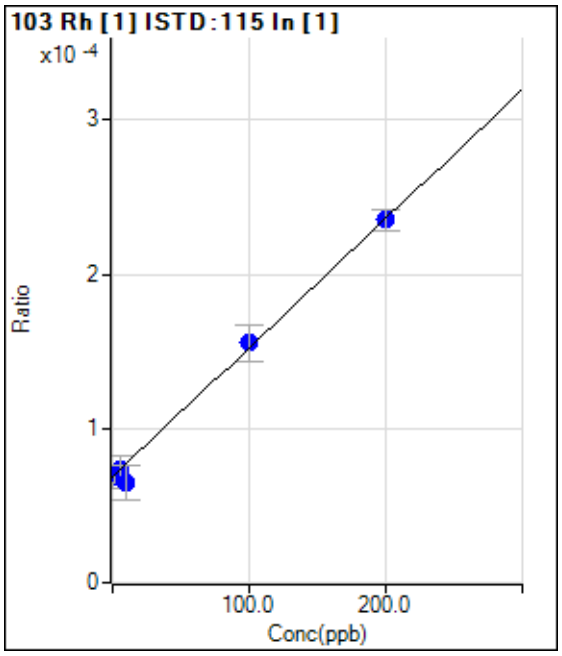
R = 0.9994

DL = 0.08794

BEC = 0.09147

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	215.57	0.0001	P	21.4
2	☐	2.000	2.570	221.12	0.0001	P	15.8
3	☐	5.000	6.084	228.90	0.0001	P	24.1
4	☐	10.000	-4.686	198.90	0.0001	P	33.2
5	☐	100.000	103.585	466.70	0.0002	P	14.8
6	☐	200.000	198.909	641.16	0.0002	P	5.8
7	☐	1.000					

y = 8.3658E-007 * x + 6.8815E-005

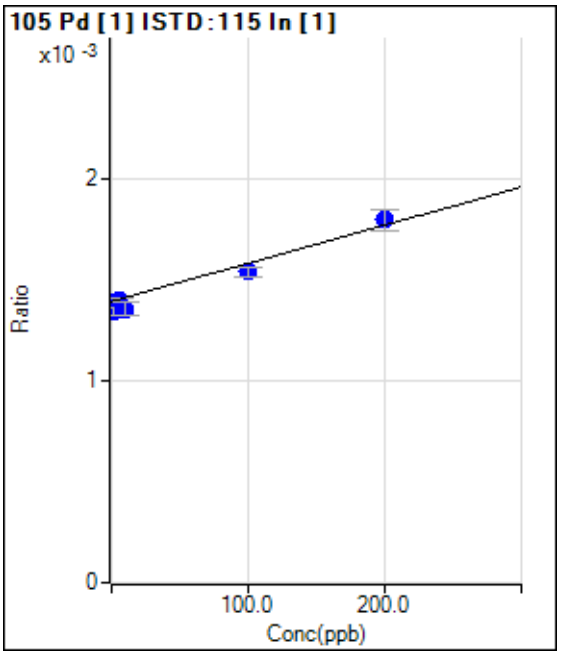
R = 0.9971

DL = 52.76

BEC = 82.26

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4365.24	0.0014	P	2.8
2	☐	2.000	-28.603	4177.40	0.0013	P	2.7
3	☐	5.000	1.942	4332.99	0.0014	P	1.1
4	☐	10.000	-20.524	4149.61	0.0014	P	4.8
5	☐	100.000	76.622	4618.62	0.0015	P	3.5
6	☐	200.000	213.598	4860.95	0.0018	P	6.1
7	☐	1.000					

y = 1.8860E-006 * x + 0.0014

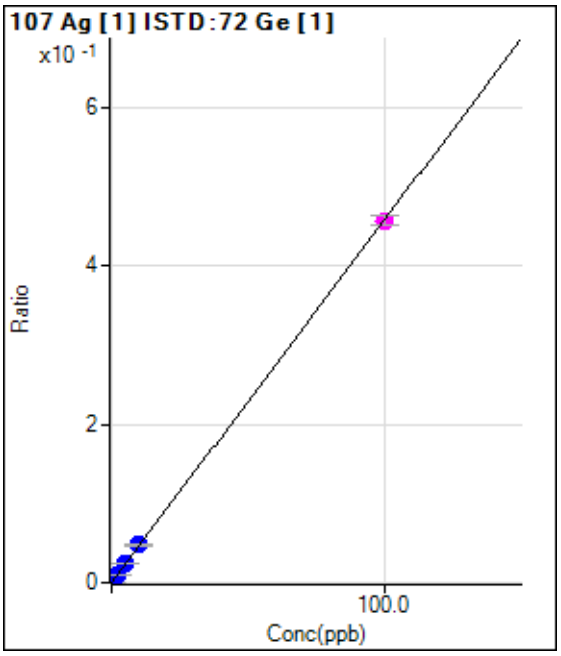
R = 0.9854

DL = 61.07

BEC = 738.5

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	354.47	0.0001	P	3.7
2	☐	2.000	2.080	29696.69	0.0096	P	2.0
3	☐	5.000	5.200	73905.39	0.0239	P	2.6
4	☐	10.000	10.416	145648.71	0.0478	P	2.2
5	☐	100.000	99.947	1378814.89	0.4572	M	2.8
6	☐			2684403.99	0.9815	A	13.2
7	☐	1.000					

y = 0.0046 * x + 1.1327E-004

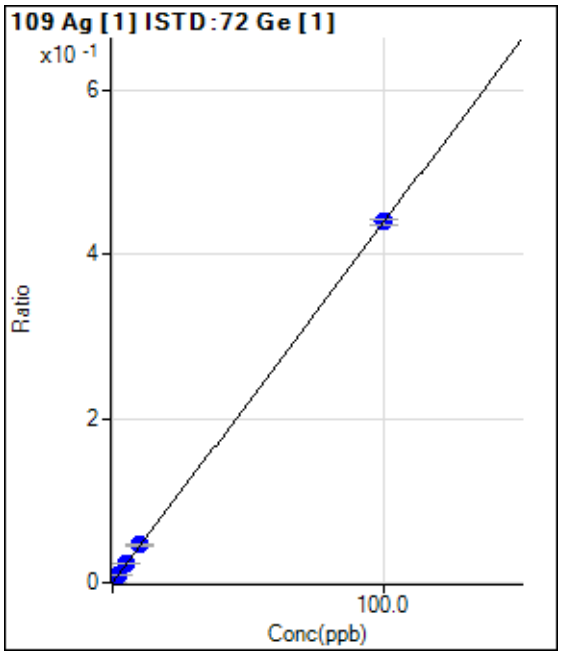
R = 1.0000

DL = 0.002772

BEC = 0.02477

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	341.13	0.0001	P	17.6
2	☐	2.000	2.089	28714.78	0.0093	P	2.7
3	☐	5.000	5.203	71199.96	0.0230	P	2.7
4	☐	10.000	10.437	140522.70	0.0461	P	2.5
5	☐	100.000	99.944	1327770.12	0.4403	P	1.8
6	☐			2601795.29	0.9512	A	13.1
7	☐	1.000					

y = 0.0044 * x + 1.0900E-004

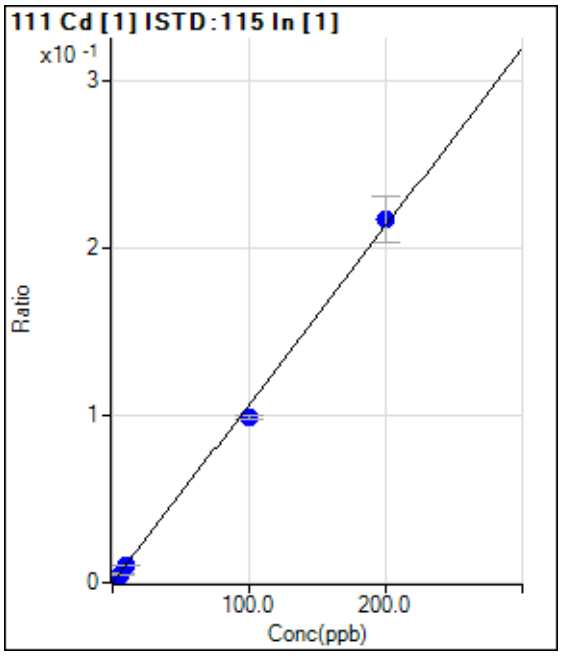
R = 1.0000

DL = 0.01304

BEC = 0.02475

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0000	P	11.8
2	☐	2.000	1.932	6445.99	0.0021	P	2.8
3	☐	5.000	4.839	16017.29	0.0052	P	1.8
4	☐	10.000	9.633	31466.64	0.0103	P	1.6
5	☐	100.000	92.956	297460.94	0.0990	P	1.9
6	☐	200.000	203.545	583782.91	0.2168	P	12.6
7	☐	1.000					

y = 0.0011 * x + 9.5771E-006

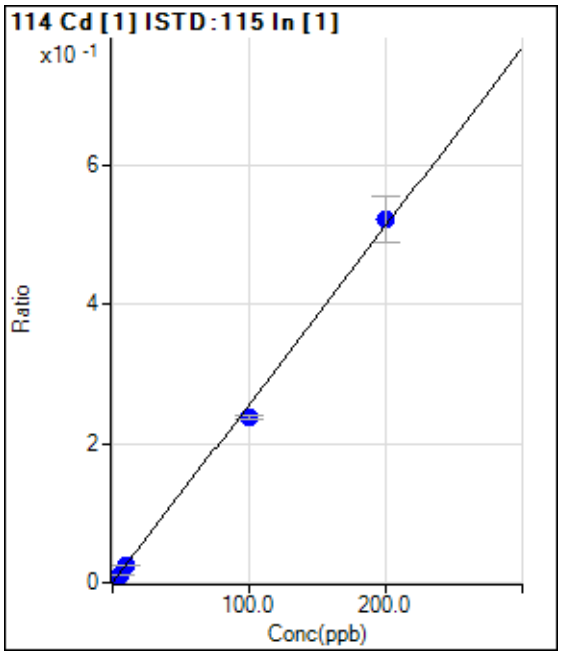
R = 0.9991

DL = 0.00318

BEC = 0.008993

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	86.67	0.0000	P	50.2
2	☐	2.000	1.924	15483.42	0.0050	P	0.8
3	☐	5.000	4.719	37636.30	0.0121	P	3.0
4	☐	10.000	9.689	76247.37	0.0249	P	1.3
5	☐	100.000	93.122	717796.58	0.2389	P	2.2
6	☐	200.000	203.462	1405415.66	0.5220	P	12.8
7	☐	1.000					

y = 0.0026 * x + 2.7604E-005

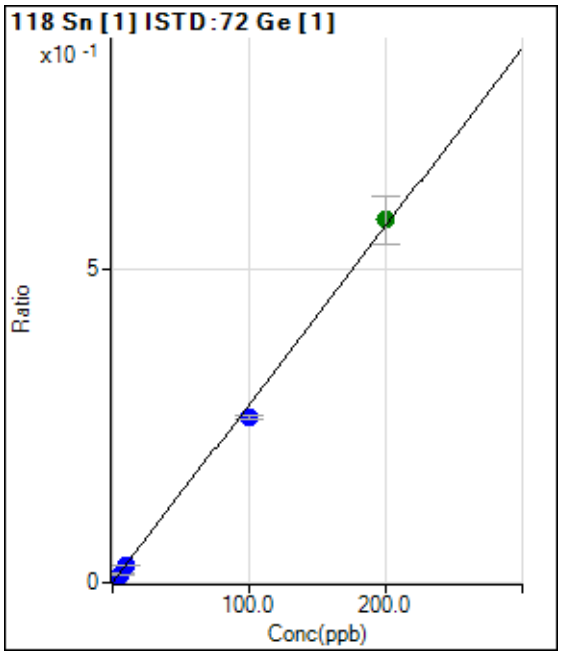
R = 0.9992

DL = 0.01621

BEC = 0.01076

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1086.76	0.0003	P	7.4
2	☐	2.000	1.879	17572.27	0.0057	P	2.7
3	☐	5.000	4.726	42691.15	0.0138	P	2.0
4	☐	10.000	9.596	84385.10	0.0277	P	2.4
5	☐	100.000	92.855	798281.37	0.2647	P	2.3
6	☐	200.000	203.601	1586646.92	0.5800	A	12.9
7	☐	1.000					

y = 0.0028 * x + 3.4727E-004

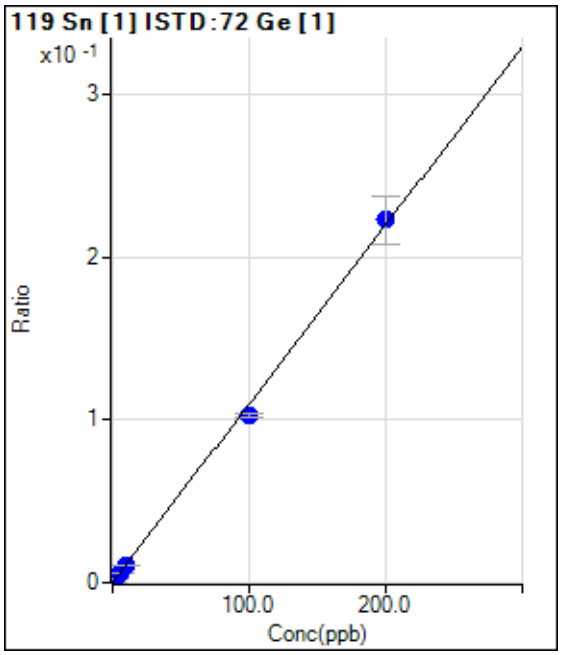
R = 0.9991

DL = 0.02723

BEC = 0.122

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	391.13	0.0001	P	10.4
2	☐	2.000	1.891	6789.49	0.0022	P	3.1
3	☐	5.000	4.816	16747.04	0.0054	P	1.4
4	☐	10.000	9.700	32868.33	0.0108	P	2.0
5	☐	100.000	93.936	311438.48	0.1033	P	2.0
6	☐	200.000	203.052	610135.30	0.2231	P	13.2
7	☐	1.000					

y = 0.0011 * x + 1.2499E-004

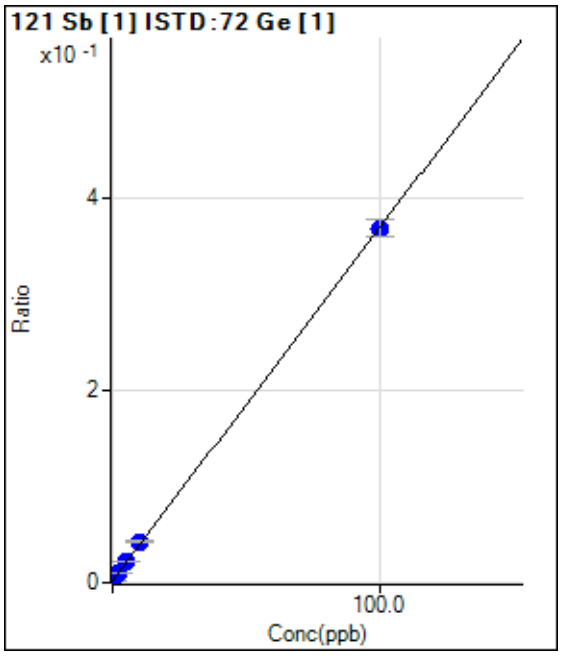
R = 0.9994

DL = 0.03566

BEC = 0.1138

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6143.09	0.0020	P	5.8
2	☐	2.000	2.244	31460.96	0.0102	P	2.3
3	☐	5.000	5.624	69903.62	0.0226	P	2.1
4	☐	10.000	11.075	129940.34	0.0426	P	3.1
5	☐	100.000	99.856	1110728.45	0.3684	P	5.2
6	☐			2324205.54	0.8487	A	11.6
7	☐	1.000					

y = 0.0037 * x + 0.0020

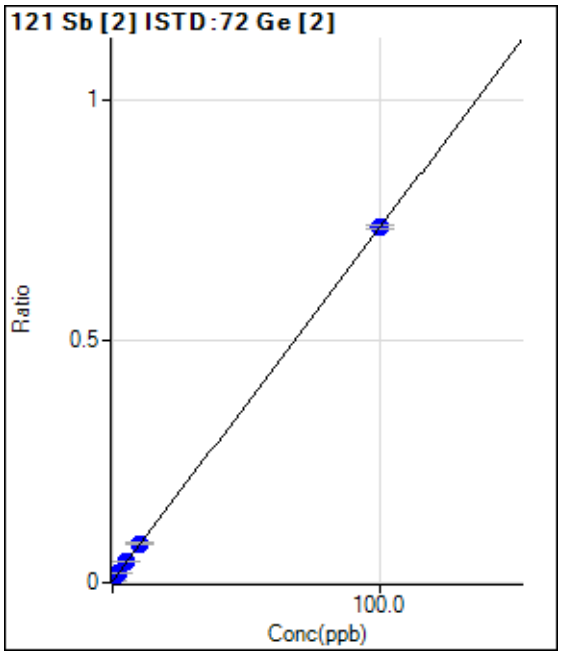
R = 0.9999

DL = 0.09242

BEC = 0.5349

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1362.67	0.0033	P	4.3
2	☐	2.000	2.106	7765.27	0.0187	P	0.8
3	☐	5.000	5.394	17556.59	0.0428	P	0.9
4	☐	10.000	10.606	33095.29	0.0810	P	1.7
5	☐	100.000	99.918	296268.66	0.7360	P	0.9
6	☐			593636.20	1.4960	P	0.8
7	☐	1.000					

y = 0.0073 * x + 0.0033

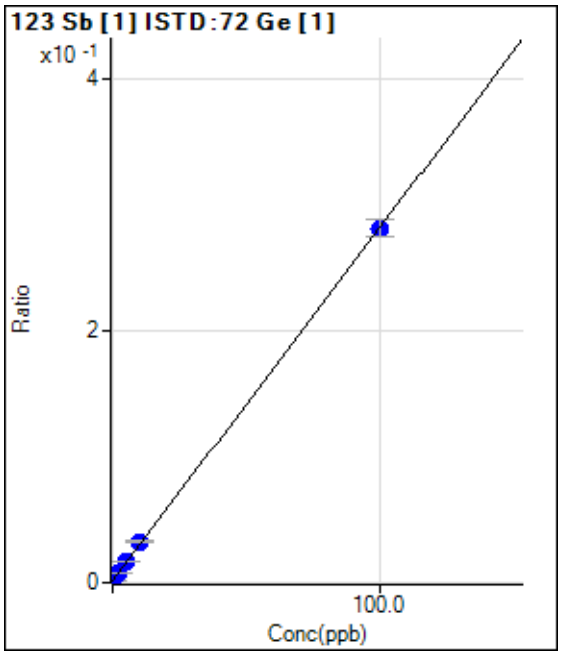
R = 1.0000

DL = 0.0572

BEC = 0.4456

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4619.24	0.0015	P	6.2
2	☐	2.000	2.268	24183.19	0.0078	P	2.0
3	☐	5.000	5.626	53385.42	0.0173	P	0.8
4	☐	10.000	11.055	99082.63	0.0325	P	3.0
5	☐	100.000	99.858	848957.32	0.2816	P	5.3
6	☐			1767114.80	0.6450	A	11.1
7	☐	1.000					

y = 0.0028 * x + 0.0015

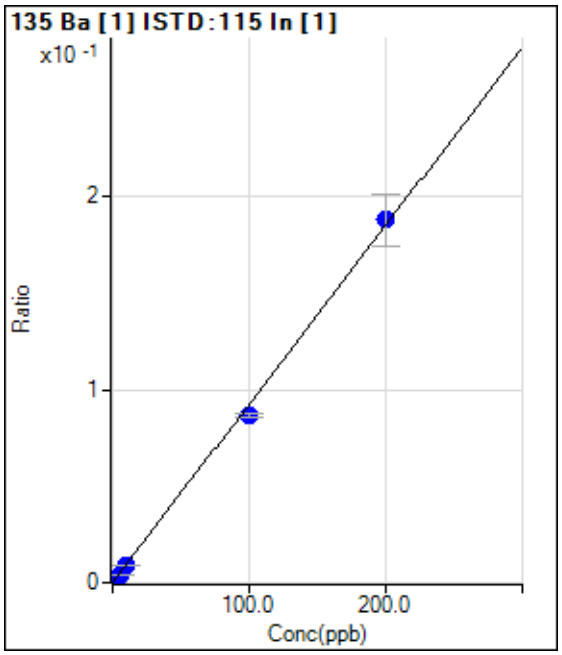
R = 1.0000

DL = 0.09794

BEC = 0.5262

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	144.45	0.0000	P	53.8
2	☐	2.000	1.874	5541.22	0.0018	P	6.8
3	☐	5.000	4.704	13624.10	0.0044	P	1.7
4	☐	10.000	9.507	27052.43	0.0088	P	2.6
5	☐	100.000	93.551	259770.28	0.0865	P	2.6
6	☐	200.000	203.258	505212.36	0.1878	P	14.0
7	☐	1.000					

y = 9.2379E-004 * x + 4.5960E-005

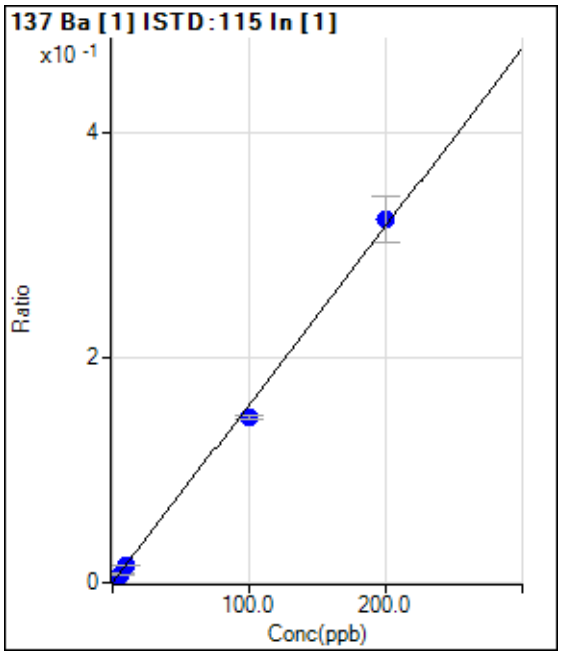
R = 0.9993

DL = 0.08031

BEC = 0.04975

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	234.46	0.0001	P	44.1
2	☐	2.000	1.812	9195.26	0.0029	P	3.0
3	☐	5.000	4.809	23893.00	0.0077	P	1.7
4	☐	10.000	9.668	47212.37	0.0154	P	0.6
5	☐	100.000	92.682	441817.83	0.1471	P	2.6
6	☐	200.000	203.682	869965.05	0.3231	P	12.8
7	☐	1.000					

y = 0.0016 * x + 7.4612E-005

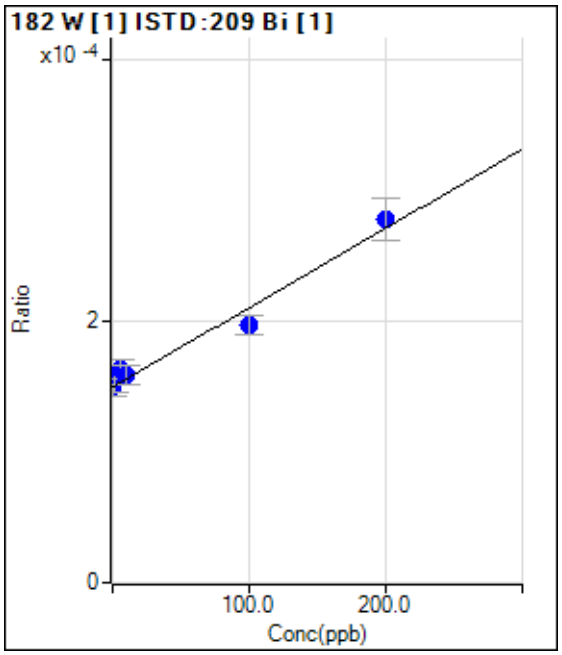
R = 0.9991

DL = 0.06222

BEC = 0.04704

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	441.14	0.0001	P	10.3
2	☐	2.000	9.367	455.59	0.0002	P	12.8
3	☐	5.000	22.983	480.03	0.0002	P	9.0
4	☐	10.000	14.746	452.25	0.0002	P	9.2
5	☐	100.000	77.627	555.60	0.0002	P	7.9
6	☐	200.000	210.426	711.16	0.0003	P	11.6
7	☐	1.000					

y = 6.0791E-007 * x + 1.4992E-004

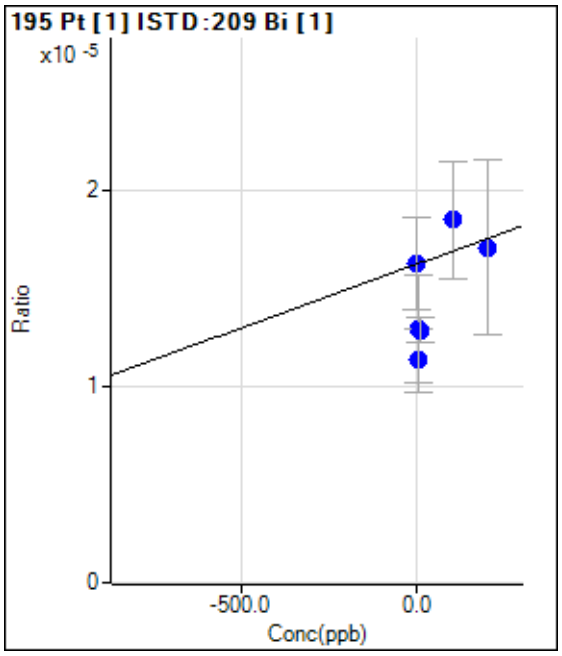
R = 0.9856

DL = 75.91

BEC = 246.6

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	47.78	0.0000	P	28.7
2	☐	2.000	-510.485	37.78	0.0000	P	41.8
3	☐	5.000	-755.586	33.34	0.0000	P	28.8
4	☐	10.000	-519.278	36.67	0.0000	P	9.3
5	☐	100.000	345.977	52.23	0.0000	P	32.3
6	☐	200.000	127.615	42.22	0.0000	P	52.4
7	☐	1.000					

y = 6.4969E-009 * x + 1.6266E-005

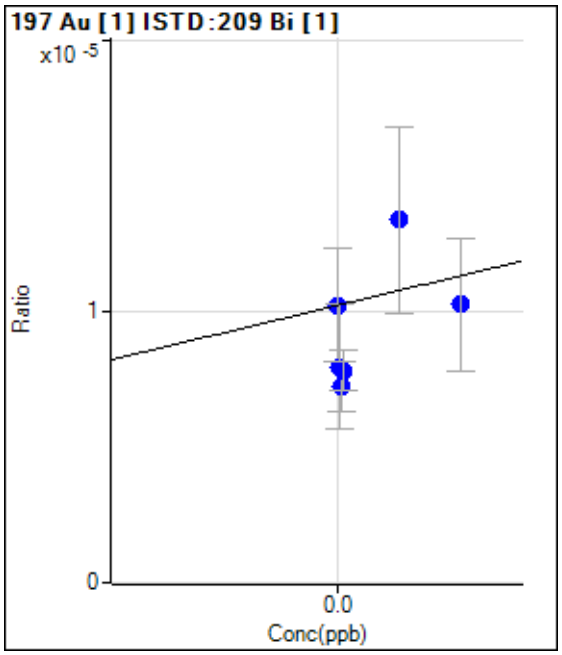
R = 0.6706

DL = 2159

BEC = 2504

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0000	P	40.7
2	☐	2.000	-416.230	23.33	0.0000	P	57.7
3	☐	5.000	-550.082	21.11	0.0000	P	25.8
4	☐	10.000	-441.799	22.22	0.0000	P	18.6
5	☐	100.000	576.097	37.78	0.0000	P	51.5
6	☐	200.000	2.601	26.67	0.0000	P	47.7
7	☐	1.000					

y = 5.4608E-009 * x + 1.0235E-005

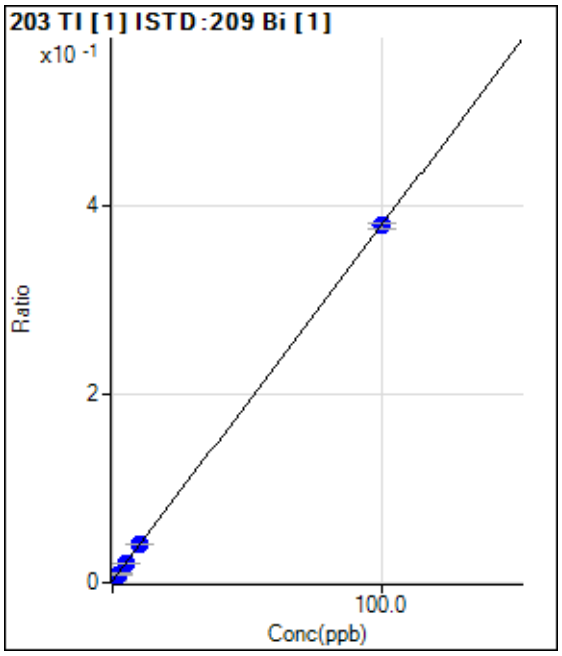
R = 0.5456

DL = 2288

BEC = 1874

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5494.03	0.0019	P	10.1
2	☐	2.000	1.909	26600.82	0.0091	P	3.5
3	☐	5.000	4.848	59053.38	0.0202	P	3.2
4	☐	10.000	10.233	115272.61	0.0405	P	0.7
5	☐	100.000	99.986	1069745.20	0.3795	P	1.3
6	☐			2149994.31	0.8429	A	11.7
7	☐	1.000					

y = 0.0038 * x + 0.0019

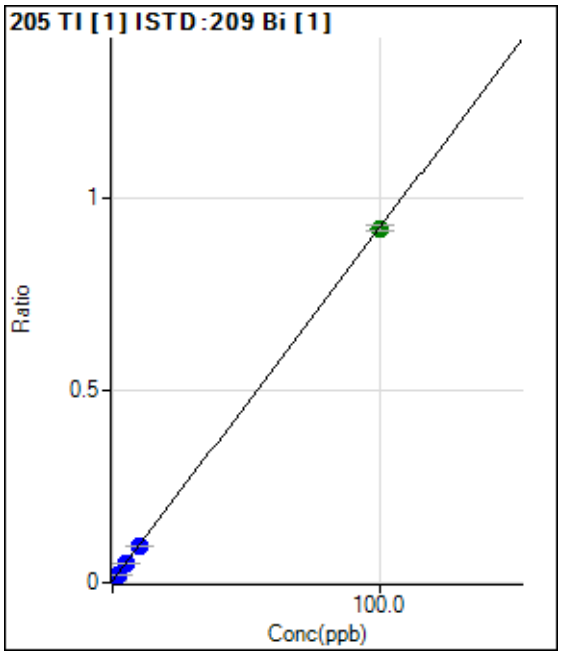
R = 1.0000

DL = 0.1508

BEC = 0.4953

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13083.88	0.0045	P	10.1
2	☐	2.000	1.837	62518.21	0.0213	P	3.5
3	☐	5.000	4.766	141247.58	0.0483	P	2.6
4	☐	10.000	9.968	273332.13	0.0961	P	0.6
5	☐	100.000	100.018	2604233.97	0.9238	A	1.4
6	☐			5054894.85	1.9832	A	12.6
7	☐	1.000					

y = 0.0092 * x + 0.0045

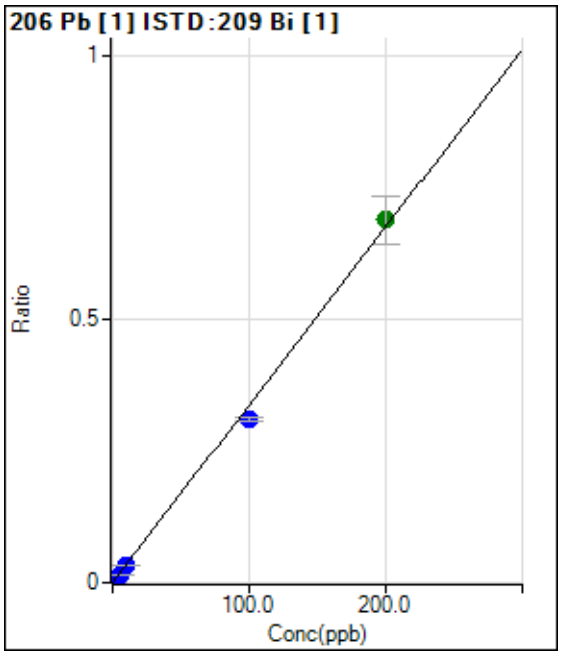
R = 1.0000

DL = 0.1464

BEC = 0.4846

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	713.39	0.0002	P	30.1
2	☐	2.000	1.871	19237.38	0.0066	P	0.5
3	☐	5.000	4.729	47467.91	0.0162	P	2.0
4	☐	10.000	9.606	93013.44	0.0327	P	1.2
5	☐	100.000	91.826	875198.94	0.3105	P	1.6
6	☐	200.000	204.115	1757179.38	0.6898	A	13.4
7	☐	1.000					

y = 0.0034 * x + 2.4214E-004

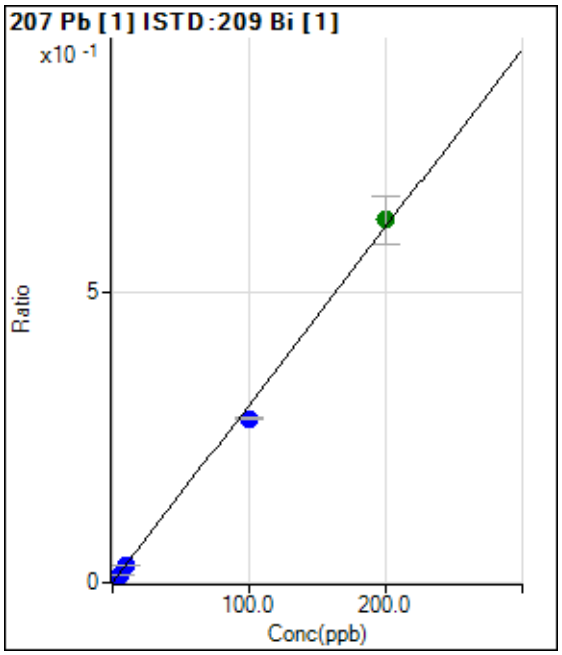
R = 0.9988

DL = 0.06467

BEC = 0.07167

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	608.93	0.0002	P	24.9
2	☐	2.000	1.862	17307.15	0.0059	P	1.4
3	☐	5.000	4.691	42603.77	0.0146	P	2.8
4	☐	10.000	9.817	86037.97	0.0302	P	0.8
5	☐	100.000	91.963	793815.98	0.2816	P	1.2
6	☐	200.000	204.037	1590870.36	0.6245	A	13.4
7	☐	1.000					

y = 0.0031 * x + 2.0668E-004

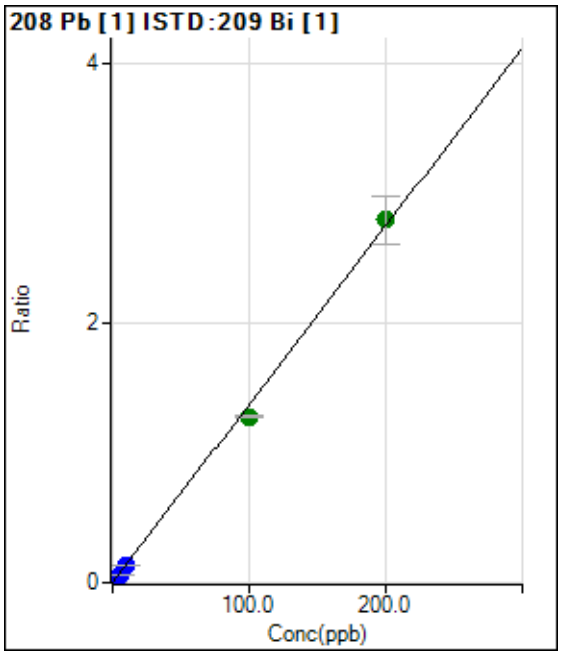
R = 0.9989

DL = 0.0505

BEC = 0.06755

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2690.23	0.0009	P	26.3
2	☐	2.000	1.866	77826.75	0.0266	P	1.1
3	☐	5.000	4.699	191682.29	0.0655	P	2.8
4	☐	10.000	9.667	380610.22	0.1338	P	0.8
5	☐	100.000	92.959	3604589.99	1.2786	A	1.1
6	☐	200.000	203.546	7130946.08	2.7986	A	13.1
7	☐	1.000					

y = 0.0137 * x + 9.1304E-004

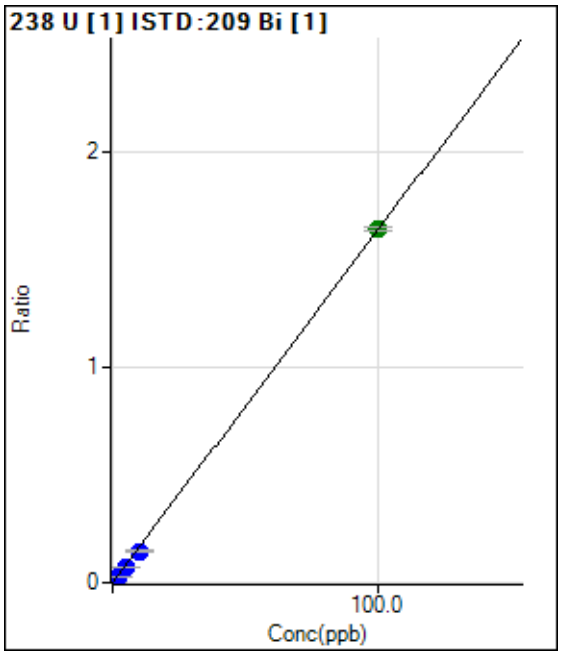
R = 0.9991

DL = 0.05245

BEC = 0.06643

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
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2	☐	2.000	1.731	83070.10	0.0283	P	2.0
3	☐	5.000	4.364	208922.80	0.0714	P	1.8
4	☐	10.000	8.955	416561.33	0.1464	P	1.1
5	☐	100.000	100.142	4614649.97	1.6369	A	1.1
6	☐			9127850.28	3.5810	A	12.6
7	☐	1.000					

y = 0.0163 * x + 5.3446E-005

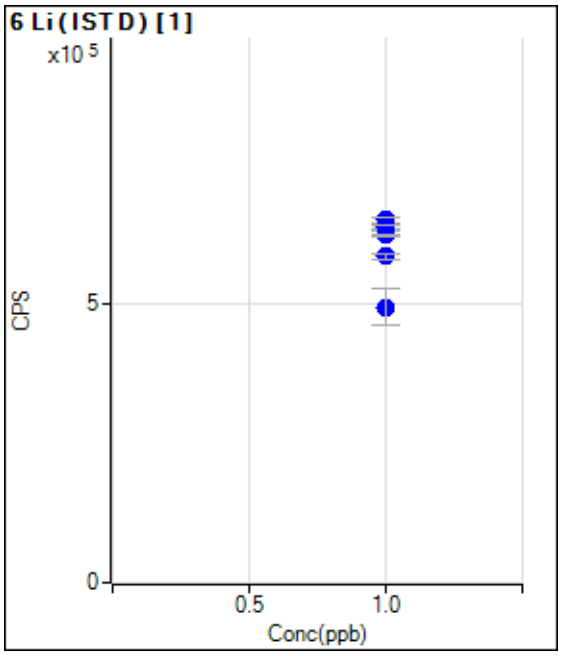
R = 1.0000

DL = 0.004526

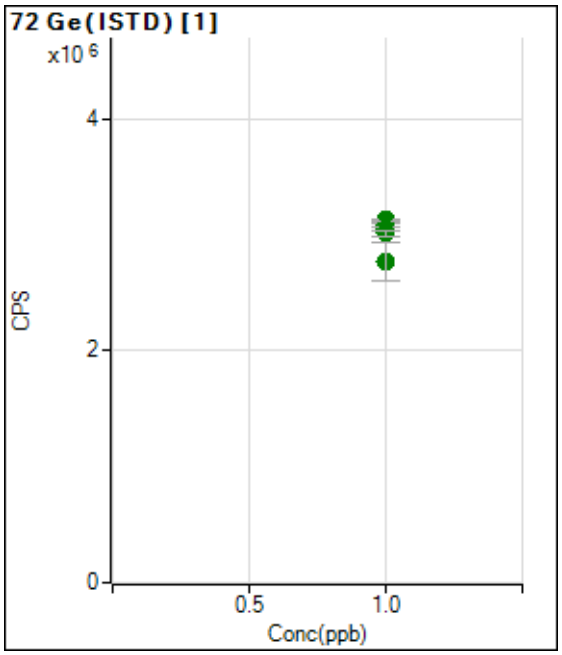
BEC = 0.00327

Weight: None

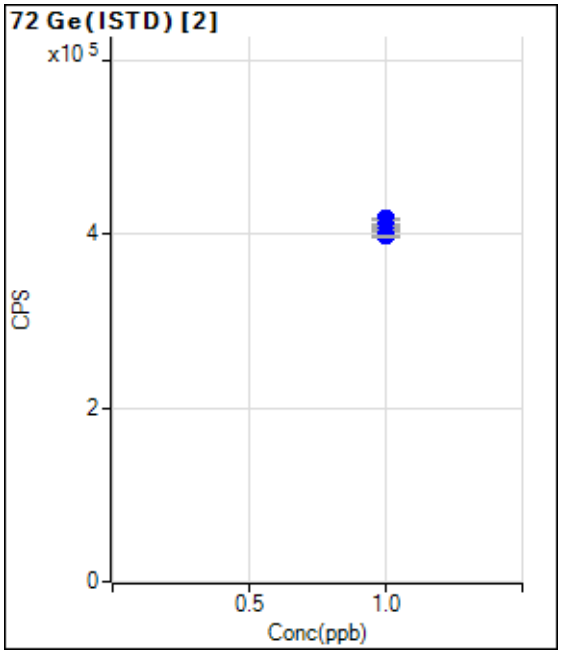
Min Conc: <None>



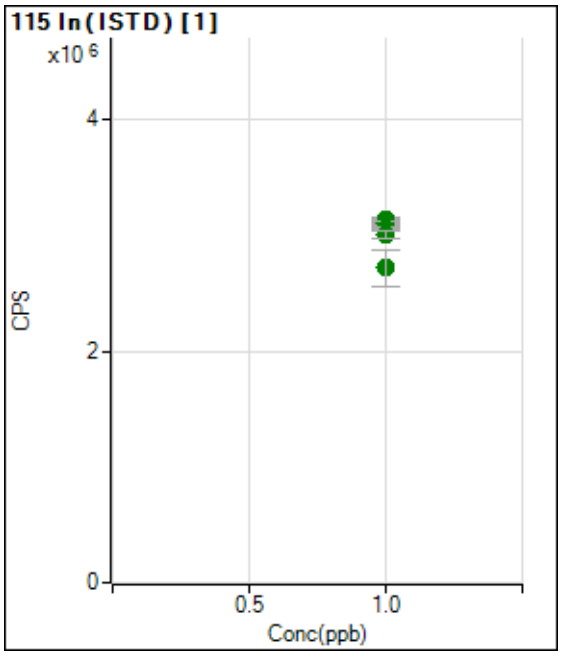
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		651501.00		P	1.4
2	☐	1.000		640460.01		P	1.4
3	☐	1.000		638200.08		P	1.7
4	☐	1.000		623870.29		P	0.7
5	☐	1.000		585786.95		P	1.5
6	☐	1.000		495051.09		P	13.0
7	☐	1.000					



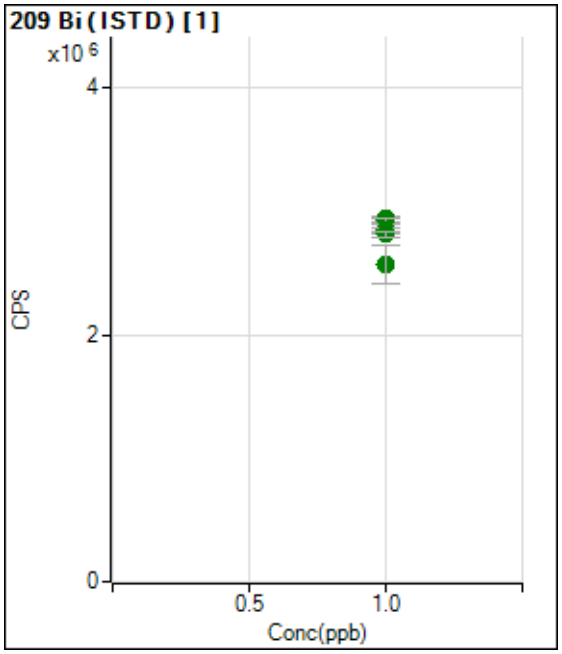
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3129453.35		A	0.1
2	☐	1.000		3085258.51		A	1.3
3	☐	1.000		3093222.17		A	1.2
4	☐	1.000		3050660.50		A	1.3
5	☐	1.000		3016472.15		A	1.7
6	☐	1.000		2764345.93		A	12.1
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		416983.91		P	0.3
2	☐	1.000		415043.28		P	0.2
3	☐	1.000		409937.52		P	0.5
4	☐	1.000		408377.09		P	0.7
5	☐	1.000		402538.95		P	0.6
6	☐	1.000		396816.34		P	0.5
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3134427.60		A	0.9
2	☐	1.000		3119551.83		A	1.2
3	☐	1.000		3102736.72		A	1.2
4	☐	1.000		3064251.57		A	0.2
5	☐	1.000		3005325.82		A	2.2
6	☐	1.000		2720047.55		A	11.9
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2939885.70		A	1.4
2	☐	1.000		2930918.98		A	1.6
3	☐	1.000		2927294.28		A	1.6
4	☐	1.000		2845083.17		A	1.2
5	☐	1.000		2819457.76		A	1.6
6	☐	1.000		2574831.98		A	12.0
7	☐	1.000					

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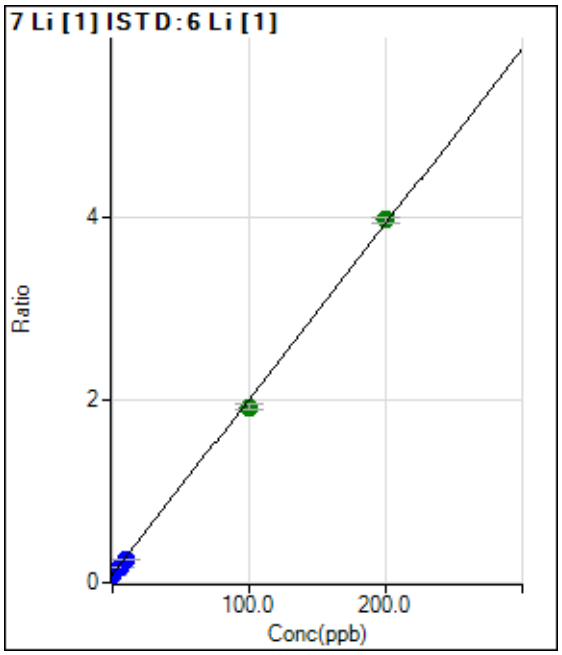
Analysis File: 17D24m00.batch.xml
DA Date-Time: 4/24/2017 6:11:57 PM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:
Tune Step: #1 042417a5.u
#2 042417he.u

Level	Standard Data File	Sample Name	Acq. Date-Time
1	070CALB.D	CAL BLK	4/24/2017 5:42:25 PM
2	071CALS.D	2/10/200	4/24/2017 5:46:58 PM
3	072CALS.D	5/25/500	4/24/2017 5:51:35 PM
4	073CALS.D	10/50/1000	4/24/2017 5:56:12 PM
5	074CALS.D	100/500/10K	4/24/2017 6:00:48 PM
6	075CALS.D	200/1000/20K	4/24/2017 6:05:06 PM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	52922.41	0.0911	P	0.9
2	☐	2.000	1.698	74049.71	0.1236	P	0.8
3	☐	5.000	4.396	104943.54	0.1752	P	0.8
4	☐	10.000	8.808	154825.57	0.2596	P	0.9
5	☐	100.000	95.610	1017777.74	1.9208	A	3.7
6	☐	200.000	202.273	1906221.06	3.9620	A	1.2
7	☐	1.000					

y = 0.0191 * x + 0.0911

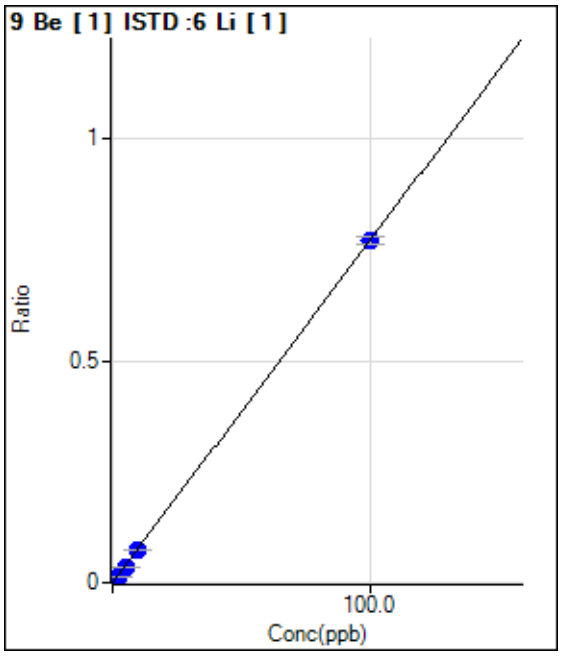
R = 0.9997

DL = 0.1355

BEC = 4.759

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	138.90	0.0002	P	4.0
2	☐	2.000	1.851	8713.56	0.0145	P	1.5
3	☐	5.000	4.650	21661.61	0.0362	P	2.4
4	☐	10.000	9.565	44203.51	0.0741	P	1.3
5	☐	100.000	100.064	409808.62	0.7733	P	2.5
6	☐			799180.11	1.6611	P	1.4
7	☐	1.000					

y = 0.0077 * x + 2.3941E-004

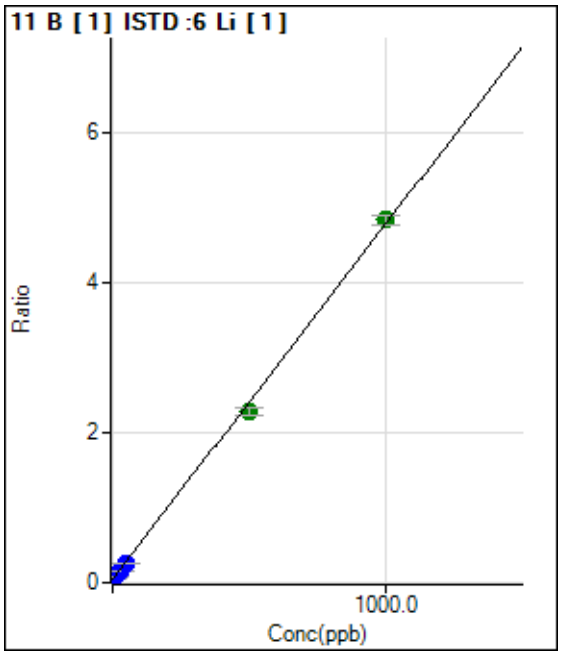
R = 1.0000

DL = 0.00371

BEC = 0.03099

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25642.66	0.0442	P	5.5
2	☐	10.000	8.066	49325.87	0.0824	P	4.5
3	☐	25.000	22.773	90967.99	0.1519	P	2.5
4	☐	50.000	45.977	155965.92	0.2616	P	2.3
5	☐	500.000	475.241	1213879.63	2.2911	A	4.5
6	☐	1000.000	1012.656	2324259.24	4.8320	A	3.0
7	☐	5.000					

y = 0.0047 * x + 0.0442

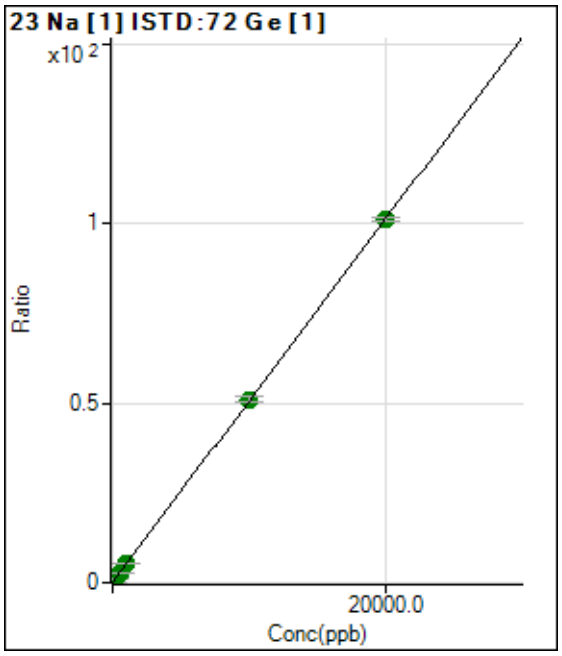
R = 0.9996

DL = 1.549

BEC = 9.352

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	222829.47	0.0732	P	13.1
2	☐	200.000	211.225	3634548.24	1.1409	A	1.2
3	☐	500.000	527.836	8770298.20	2.7413	A	1.3
4	☐	1000.000	1055.866	17305694.60	5.4104	A	2.1
5	☐	10000.00	10075.27	156940363.2	51.0018	A	2.6
6	☐	20000.00	19958.76	302928811.0	100.960	A	1.0
7	☐	100.000					

y = 0.0051 * x + 0.0732

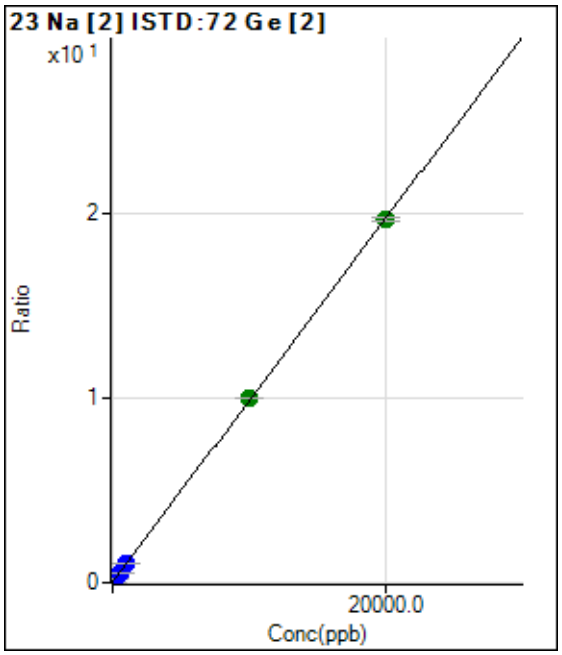
R = 1.0000

DL = 5.682

BEC = 14.48

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7774.25	0.0191	P	0.7
2	☐	200.000	209.593	93093.55	0.2254	P	0.7
3	☐	500.000	520.360	221244.78	0.5315	P	1.1
4	☐	1000.000	1037.724	434575.62	1.0409	P	0.5
5	☐	10000.00	10111.53	3923294.32	9.9757	A	0.4
6	☐	20000.00	19941.74	7607956.90	19.6554	A	0.9
7	☐	100.000					

y = 9.8468E-004 * x + 0.0191

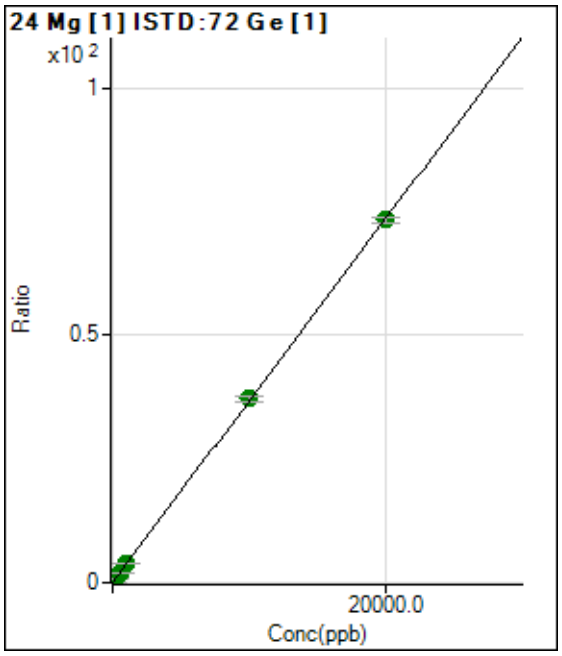
R = 1.0000

DL = 0.4038

BEC = 19.36

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	116080.09	0.0382	P	19.6
2	☐	200.000	214.316	2628504.53	0.8252	A	1.6
3	☐	500.000	530.321	6352081.01	1.9855	A	0.8
4	☐	1000.000	1058.854	12558409.12	3.9262	A	1.5
5	☐	10000.00	10097.47	114206806.0	37.1144	A	2.5
6	☐	20000.00	19947.41	219869736.7	73.2816	A	1.5
7	☐	100.000					

y = 0.0037 * x + 0.0382

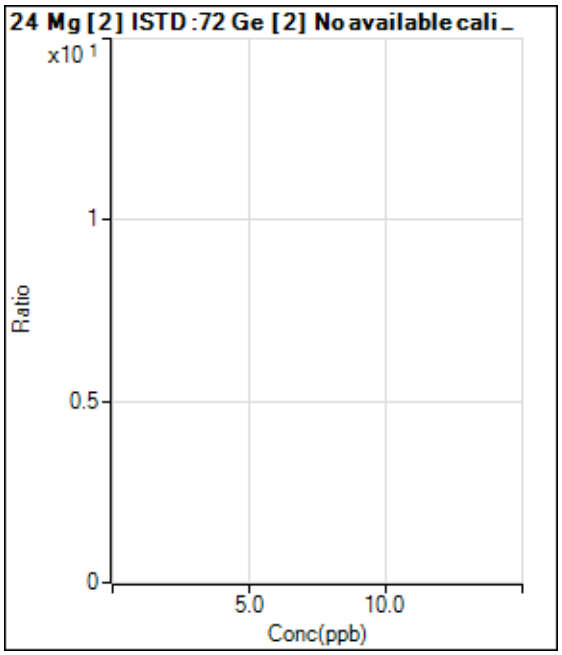
R = 1.0000

DL = 6.132

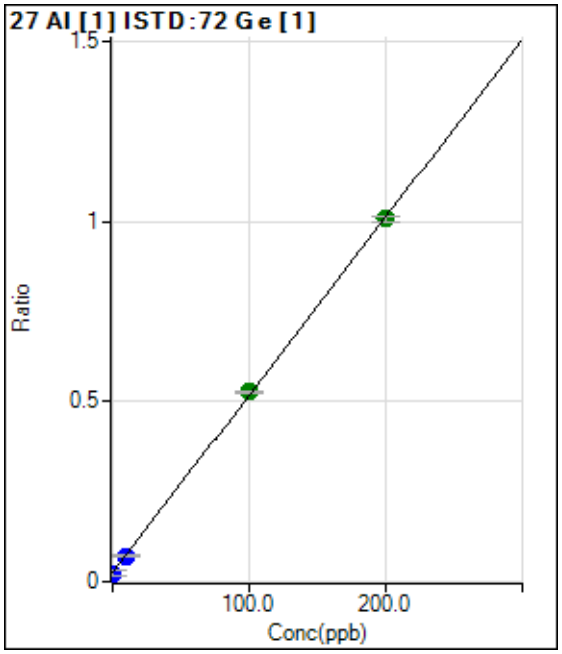
BEC = 10.41

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.00					
6	☐	20000.00					
7	☐	100.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.489	67038.39	0.0224	P	62.1
2	☐			122418.60	0.0384	P	18.4
3	☐			149495.44	0.0467	P	13.9
4	☐	10.000	9.569	230598.27	0.0720	P	8.4
5	☐	100.000	101.797	1621666.05	0.5269	A	0.9
6	☐	200.000	199.123	3021042.35	1.0069	A	1.3
7	☐	1.000					

y = 0.0049 * x + 0.0248

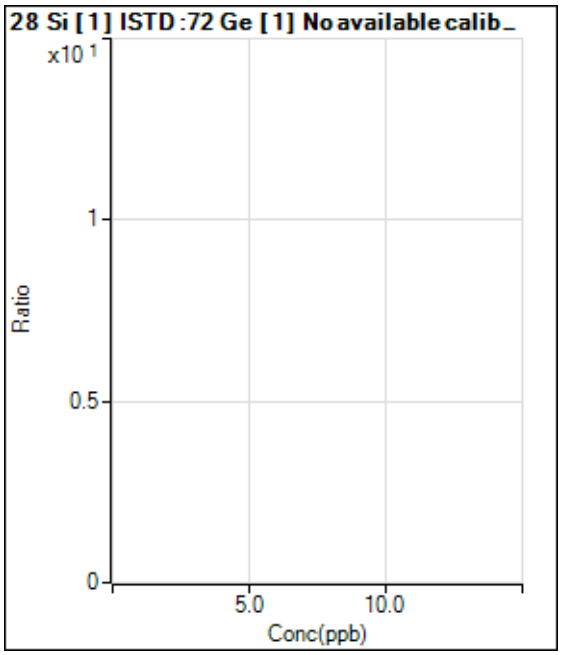
R = 0.9999

DL = 8.475

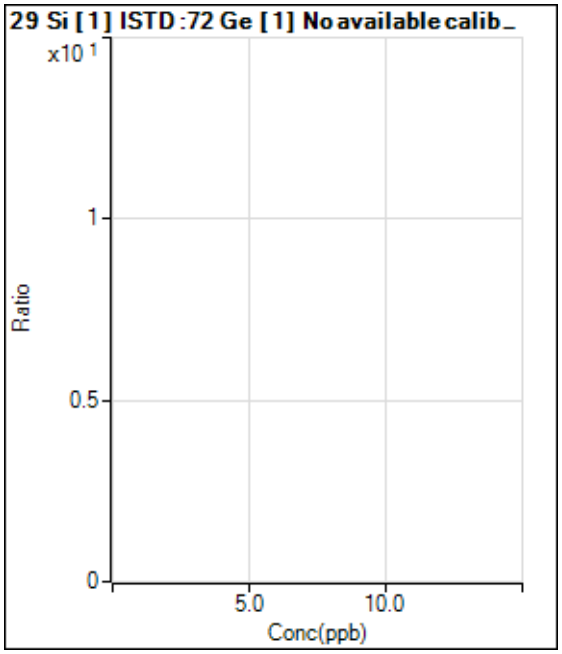
BEC = 5.035

Weight: None

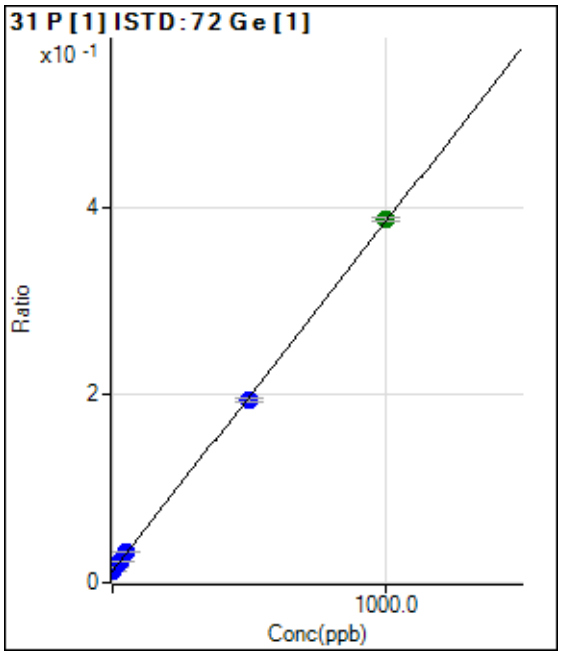
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37230.54	0.0122	P	11.0
2	☐	10.000	9.087	49723.77	0.0156	P	0.9
3	☐	25.000	26.679	70903.79	0.0222	P	1.0
4	☐	50.000	53.905	103337.85	0.0323	P	1.3
5	☐	500.000	487.709	596776.71	0.1939	P	2.1
6	☐	1000.000	1005.918	1161148.28	0.3870	A	1.0
7	☐	5.000					

y = 3.7256E−004 * x + 0.0122

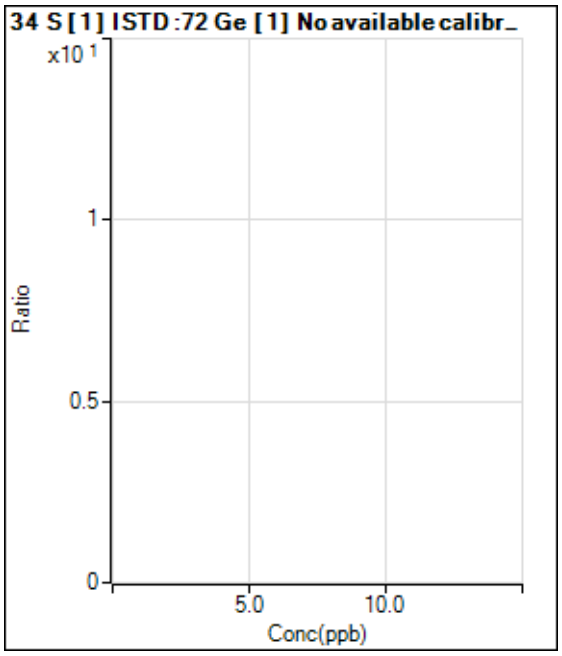
R = 0.9999

DL = 10.87

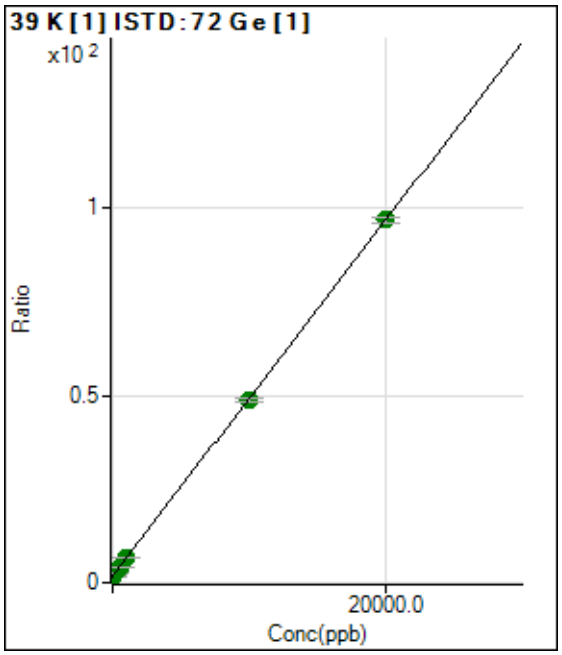
BEC = 32.81

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.00					
6	☐	40000.00					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5389683.67	1.7662	A	5.7
2	☐	200.000	196.611	8599142.23	2.6996	A	1.6
3	☐	500.000	516.631	13496917.30	4.2188	A	0.8
4	☐	1000.000	1038.414	21418317.18	6.6958	A	1.0
5	☐	10000.00	9945.585	150726871.0	48.9805	A	2.2
6	☐	20000.00	20024.90	290523302.3	96.8296	A	1.4
7	☐	100.000					

y = 0.0047 * x + 1.7662

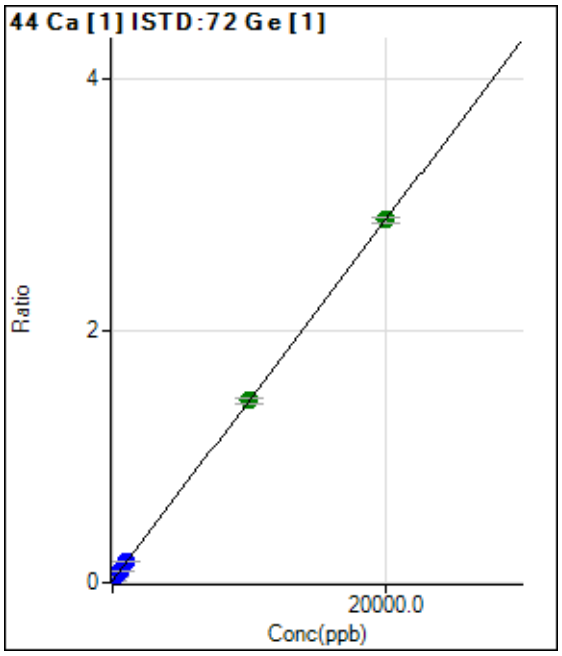
R = 1.0000

DL = 63.8

BEC = 372

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	49946.17	0.0164	P	17.7
2	☐	200.000	211.899	149006.08	0.0468	P	2.5
3	☐	500.000	530.559	295511.54	0.0924	P	1.2
4	☐	1000.000	1054.439	535277.65	0.1673	P	0.7
5	☐	10000.00	9984.762	4447029.55	1.4453	A	2.9
6	☐	20000.00	20004.01	8637703.41	2.8790	A	1.9
7	☐	100.000					

y = 1.4310E-004 * x + 0.0164

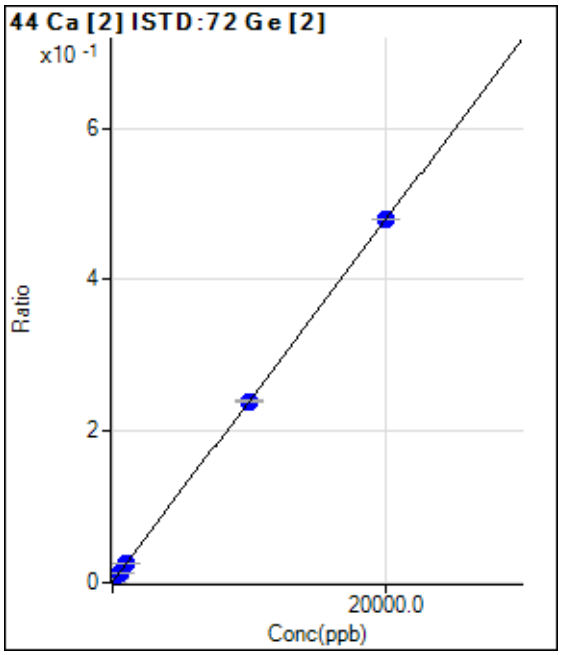
R = 1.0000

DL = 61.12

BEC = 114.9

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	375.58	0.0009	P	9.0
2	☐	200.000	231.268	2661.46	0.0064	P	4.0
3	☐	500.000	523.849	5593.38	0.0134	P	1.4
4	☐	1000.000	1049.938	10856.06	0.0260	P	1.7
5	☐	10000.00	9980.314	94130.95	0.2393	P	0.5
6	☐	20000.00	20006.43	185358.83	0.4789	P	0.1
7	☐	100.000					

y = 2.3889E-005 * x + 9.2053E-004

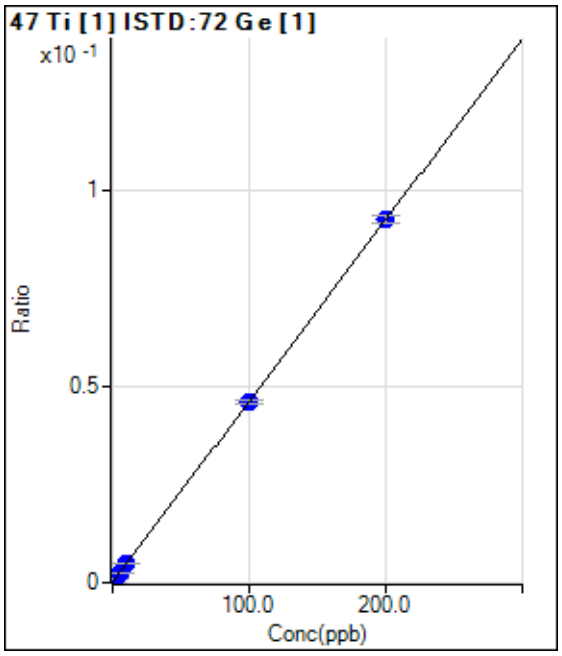
R = 1.0000

DL = 10.44

BEC = 38.53

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	222.23	0.0001	P	15.5
2	☐	2.000	2.064	3266.01	0.0010	P	2.8
3	☐	5.000	5.204	7909.93	0.0025	P	2.1
4	☐	10.000	10.421	15600.97	0.0049	P	3.1
5	☐	100.000	99.732	141742.04	0.0461	P	1.9
6	☐	200.000	200.107	277044.58	0.0923	P	2.1
7	☐	1.000					

y = 4.6110E-004 * x + 7.3069E-005

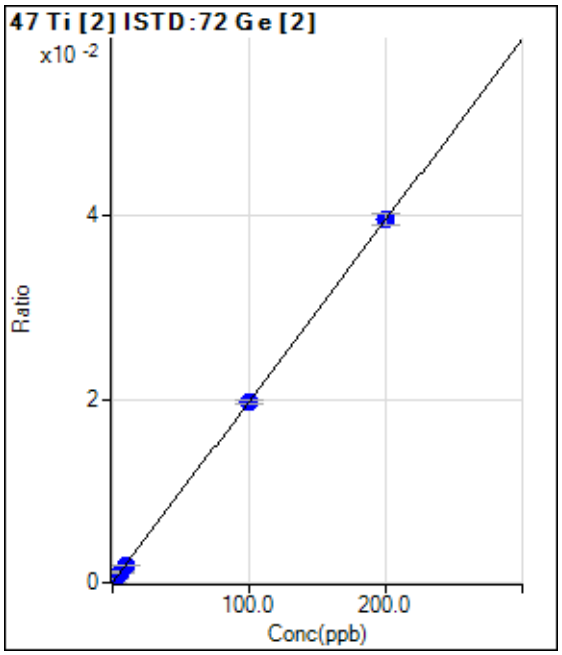
R = 1.0000

DL = 0.07357

BEC = 0.1585

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.00	0.0000	P	57.7
2	☐	2.000	2.258	194.46	0.0005	P	31.0
3	☐	5.000	5.467	460.03	0.0011	P	16.2
4	☐	10.000	9.782	817.84	0.0020	P	3.6
5	☐	100.000	99.646	7758.76	0.0197	P	3.1
6	☐	200.000	200.173	15329.63	0.0396	P	3.3
7	☐	1.000					

y = 1.9775E-004 * x + 2.4528E-005

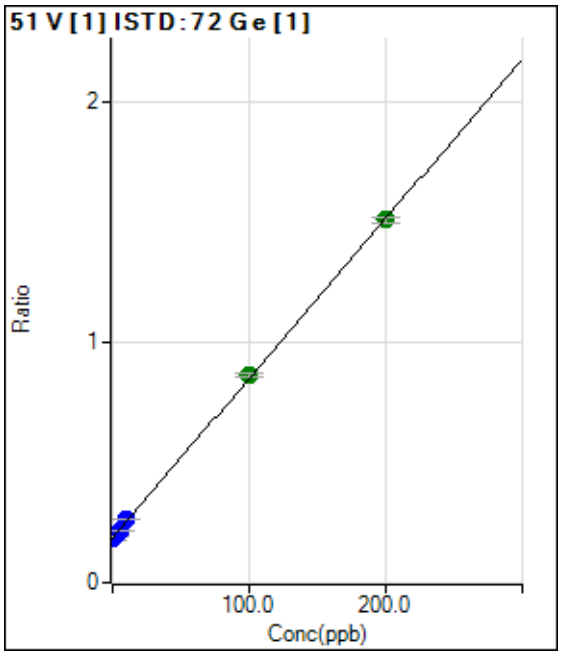
R = 1.0000

DL = 0.2148

BEC = 0.124

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.438	558827.48	0.1833	P	8.1
2	☐	2.000	0.327	600065.43	0.1884	P	0.3
3	☐	5.000	4.852	698572.84	0.2183	P	0.2
4	☐	10.000	11.593	841382.28	0.2630	P	0.8
5	☐	100.000	101.452	2642261.03	0.8586	A	1.9
6	☐	200.000	199.215	4519919.31	1.5065	A	1.7
7	☐	1.000					

y = 0.0066 * x + 0.1862

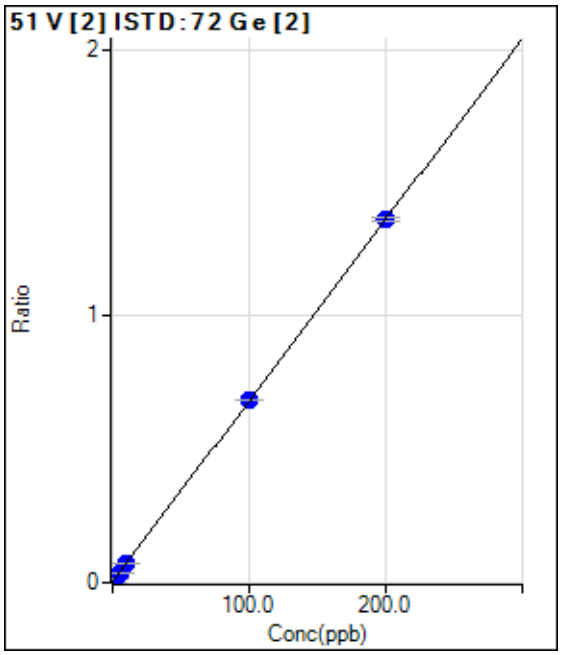
R = 0.9999

DL = 6.755

BEC = 28.09

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.157	950.07	0.0023	P	11.2
2	☐	2.000	2.012	7048.42	0.0171	P	4.5
3	☐	5.000	5.009	15581.01	0.0374	P	0.6
4	☐	10.000	10.080	30008.23	0.0719	P	1.3
5	☐	100.000	100.121	268848.40	0.6836	P	0.4
6	☐	200.000	199.935	527067.58	1.3617	P	1.0
7	☐	1.000					

y = 0.0068 * x + 0.0034

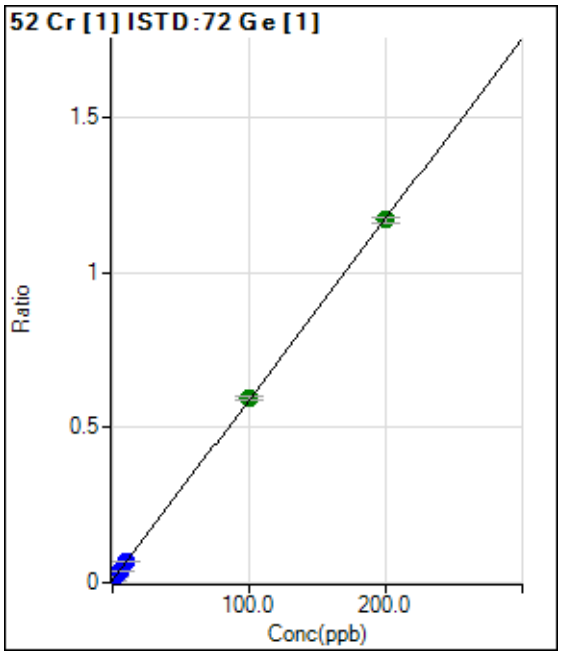
R = 1.0000

DL = 0.1151

BEC = 0.5001

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26522.45	0.0087	P	7.3
2	☐	2.000	2.071	66159.91	0.0208	P	0.9
3	☐	5.000	5.203	124825.96	0.0390	P	1.0
4	☐	10.000	10.586	225146.30	0.0704	P	1.4
5	☐	100.000	100.892	1835964.99	0.5966	A	2.3
6	☐	200.000	199.519	3514538.21	1.1714	A	1.4
7	☐	1.000					

y = 0.0058 * x + 0.0087

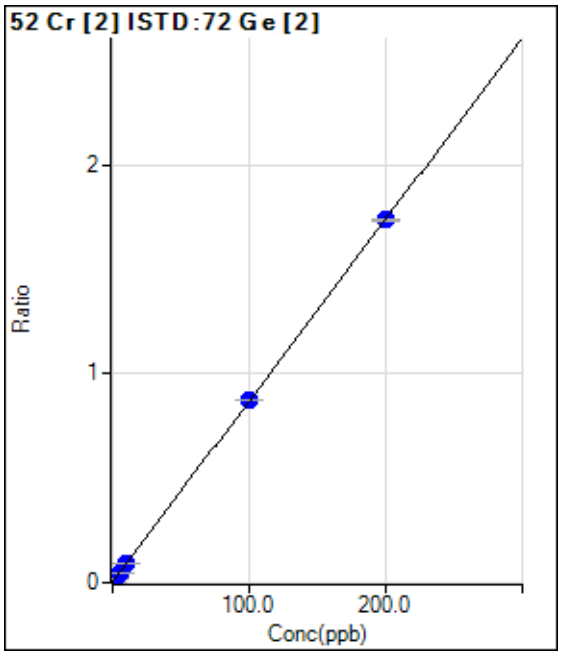
R = 1.0000

DL = 0.3287

BEC = 1.492

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	766.72	0.0019	P	8.5
2	☐	2.000	2.116	8367.97	0.0203	P	1.6
3	☐	5.000	5.259	19801.02	0.0476	P	1.7
4	☐	10.000	10.410	38538.62	0.0923	P	1.1
5	☐	100.000	100.360	343587.09	0.8736	P	0.4
6	☐	200.000	199.792	672468.46	1.7373	P	0.8
7	☐	1.000					

y = 0.0087 * x + 0.0019

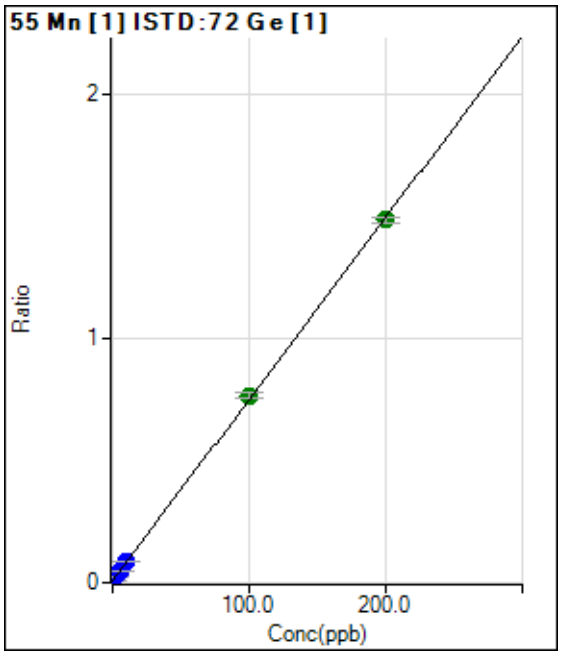
R = 1.0000

DL = 0.05496

BEC = 0.2164

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22780.43	0.0075	P	15.3
2	☐	2.000	2.049	72340.56	0.0227	P	2.5
3	☐	5.000	5.176	146906.32	0.0459	P	0.4
4	☐	10.000	10.428	271583.92	0.0849	P	1.7
5	☐	100.000	102.189	2357657.33	0.7662	A	2.4
6	☐	200.000	198.879	4452501.22	1.4840	A	1.6
7	☐	1.000					

y = 0.0074 * x + 0.0075

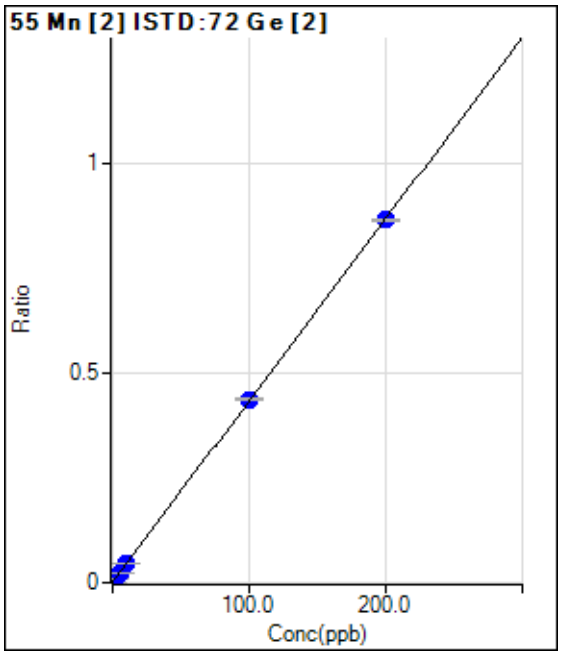
R = 0.9999

DL = 0.4635

BEC = 1.009

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	295.57	0.0007	P	17.7
2	☐	2.000	2.039	3951.76	0.0096	P	4.6
3	☐	5.000	5.086	9490.81	0.0228	P	3.2
4	☐	10.000	10.560	19432.85	0.0465	P	1.9
5	☐	100.000	100.811	172317.49	0.4382	P	0.9
6	☐	200.000	199.564	335462.38	0.8667	P	0.3
7	☐	1.000					

y = 0.0043 * x + 7.2412E-004

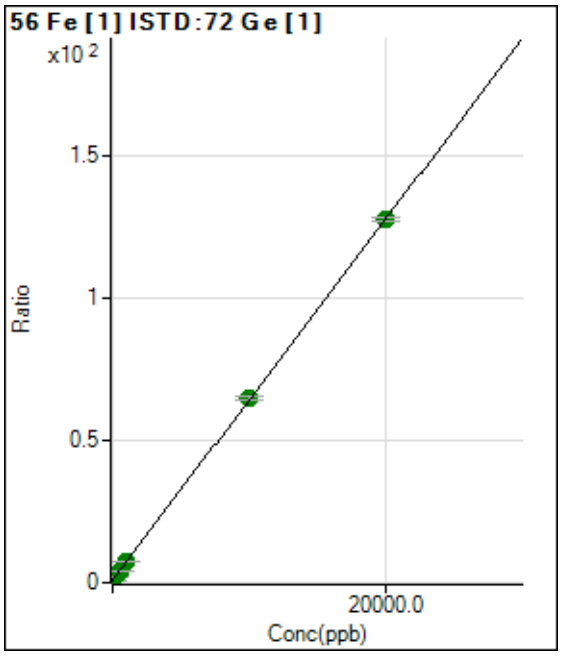
R = 1.0000

DL = 0.08885

BEC = 0.1669

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2824576.94	0.9263	A	7.8
2	☐	200.000	207.633	7147160.52	2.2437	A	1.5
3	☐	500.000	523.152	13582670.91	4.2456	A	1.1
4	☐	1000.000	1054.799	24369384.36	7.6188	A	1.8
5	☐	10000.00	10069.93	199461252.5	64.8178	A	2.2
6	☐	20000.00	19961.63	382786367.6	127.578	A	1.2
7	☐	100.000					

y = 0.0063 * x + 0.9263

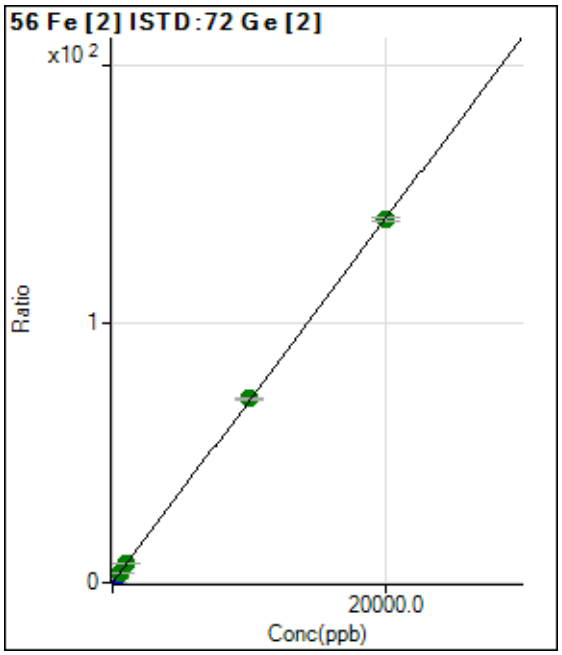
R = 1.0000

DL = 34.21

BEC = 146

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10569.28	0.0259	P	1.5
2	☐	200.000	208.227	615069.58	1.4895	P	1.3
3	☐	500.000	531.454	1565948.38	3.7614	A	0.3
4	☐	1000.000	1053.312	3101866.55	7.4295	A	0.4
5	☐	10000.00	10105.65	27945945.14	71.0573	A	0.7
6	☐	20000.00	19943.64	54269087.52	140.207	A	1.1
7	☐	100.000					

y = 0.0070 * x + 0.0259

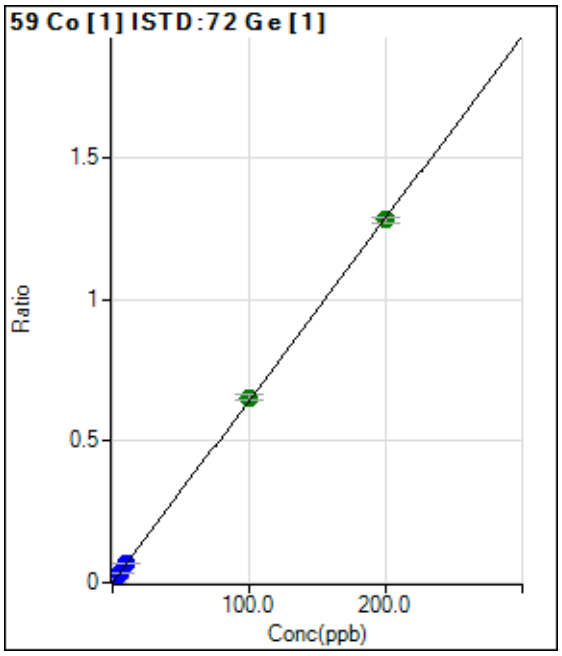
R = 1.0000

DL = 0.1666

BEC = 3.686

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	452.25	0.0001	P	16.5
2	☐	2.000	2.106	43693.61	0.0137	P	1.7
3	☐	5.000	5.234	108353.60	0.0339	P	1.2
4	☐	10.000	10.524	217310.68	0.0679	P	2.3
5	☐	100.000	101.630	2015062.94	0.6549	A	2.7
6	☐	200.000	199.152	3849795.36	1.2831	A	1.6
7	☐	1.000					

y = 0.0064 * x + 1.4872E-004

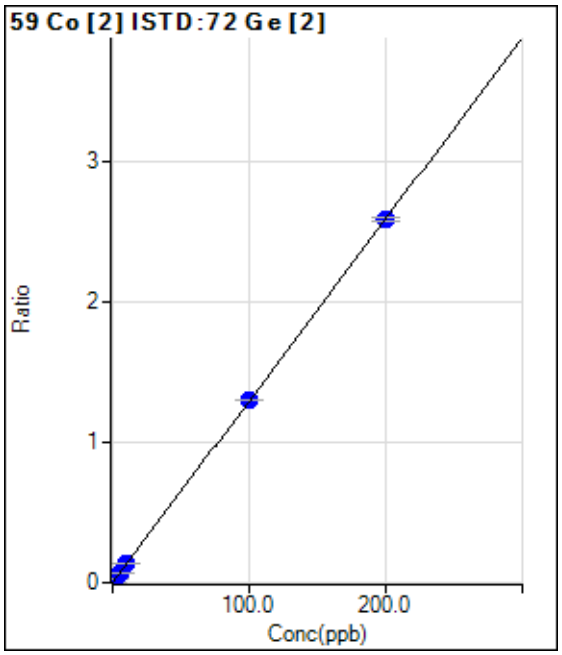
R = 1.0000

DL = 0.01144

BEC = 0.02309

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	72.22	0.0002	P	18.5
2	☐	2.000	2.104	11291.96	0.0273	P	4.7
3	☐	5.000	5.200	28034.90	0.0673	P	0.7
4	☐	10.000	10.659	57551.14	0.1378	P	1.8
5	☐	100.000	100.629	511243.12	1.2999	P	0.3
6	☐	200.000	199.647	998198.49	2.5788	P	0.9
7	☐	1.000					

y = 0.0129 * x + 1.7703E-004

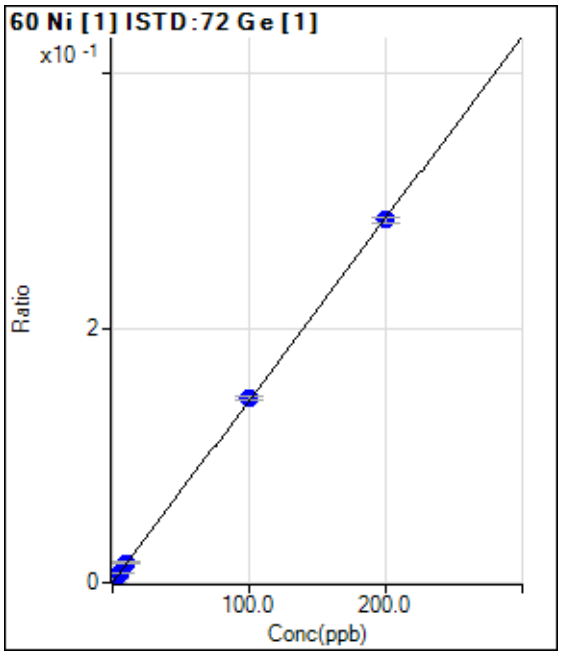
R = 1.0000

DL = 0.007605

BEC = 0.01371

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	147.79	0.0000	P	23.6
2	☐	2.000	2.150	9961.09	0.0031	P	1.2
3	☐	5.000	5.394	24870.05	0.0078	P	0.9
4	☐	10.000	10.975	50427.69	0.0158	P	2.1
5	☐	100.000	101.552	447689.43	0.1455	P	1.9
6	☐	200.000	199.164	855907.40	0.2853	P	1.3
7	☐	1.000					

y = 0.0014 * x + 4.8717E-005

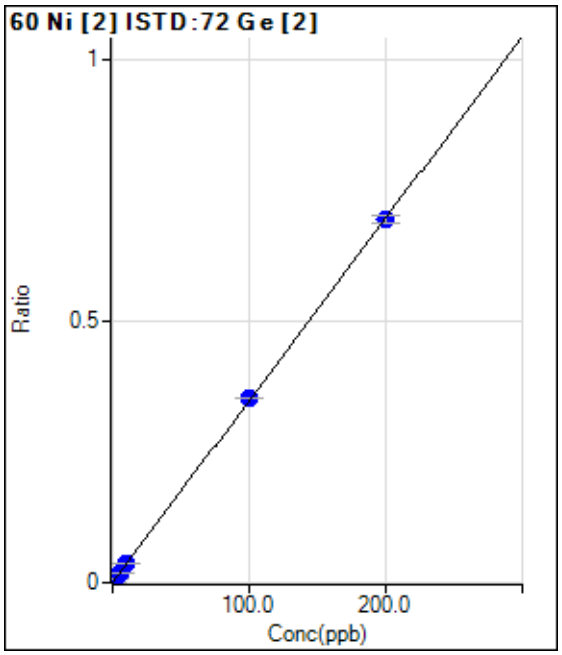
R = 1.0000

DL = 0.02413

BEC = 0.03402

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	80.00	0.0002	P	41.5
2	☐	2.000	2.072	3055.98	0.0074	P	6.4
3	☐	5.000	5.236	7660.94	0.0184	P	2.3
4	☐	10.000	10.320	15062.76	0.0361	P	2.0
5	☐	100.000	101.355	138671.07	0.3526	P	0.5
6	☐	200.000	199.300	268272.30	0.6931	P	2.2
7	☐	1.000					

y = 0.0035 * x + 1.9648E-004

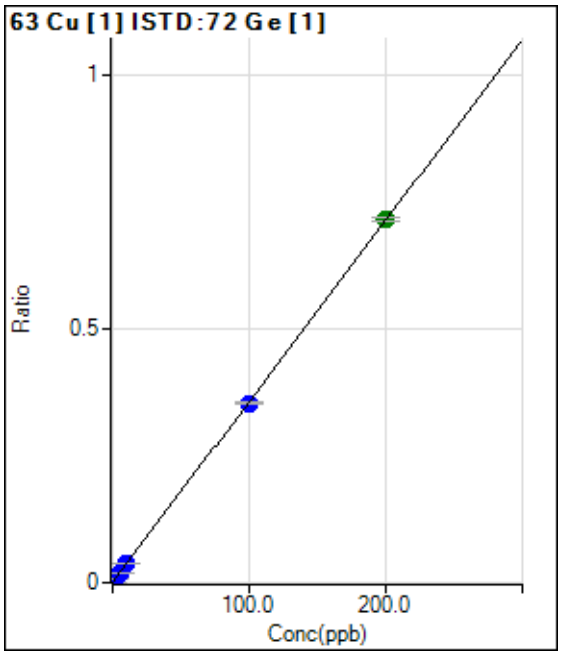
R = 1.0000

DL = 0.07036

BEC = 0.05651

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1803.51	0.0006	P	16.0
2	☐	2.000	2.110	25871.54	0.0081	P	2.7
3	☐	5.000	5.255	61901.69	0.0193	P	0.3
4	☐	10.000	10.605	122948.84	0.0384	P	1.9
5	☐	100.000	99.172	1091017.18	0.3545	P	1.9
6	☐	200.000	200.376	2147483.86	0.7157	A	1.0
7	☐	1.000					

y = 0.0036 * x + 5.9288E-004

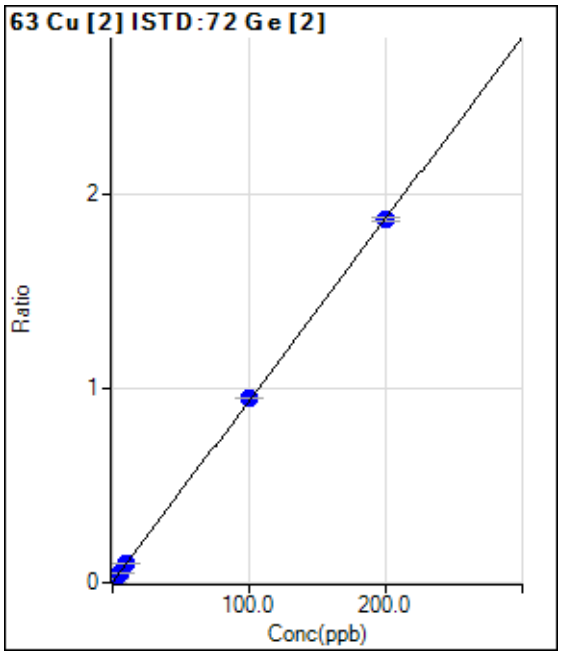
R = 1.0000

DL = 0.07973

BEC = 0.1661

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	548.93	0.0013	P	5.7
2	☐	2.000	2.056	8485.82	0.0206	P	2.1
3	☐	5.000	5.221	20866.90	0.0501	P	1.8
4	☐	10.000	10.616	41969.28	0.1005	P	0.7
5	☐	100.000	101.129	372109.61	0.9462	P	0.4
6	☐	200.000	199.399	721598.32	1.8643	P	1.1
7	☐	1.000					

y = 0.0093 * x + 0.0013

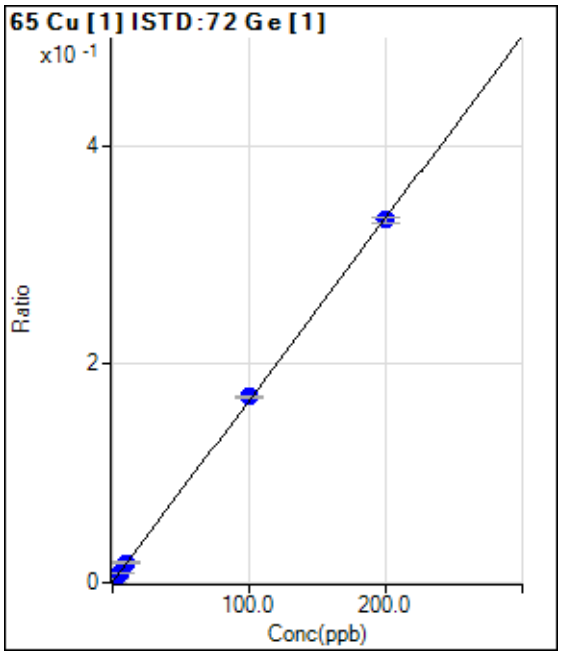
R = 1.0000

DL = 0.02446

BEC = 0.1441

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	877.84	0.0003	P	11.0
2	☐	2.000	2.150	12330.51	0.0039	P	1.5
3	☐	5.000	5.438	29922.73	0.0094	P	1.0
4	☐	10.000	10.788	58428.92	0.0183	P	2.5
5	☐	100.000	101.767	522856.87	0.1699	P	2.0
6	☐	200.000	199.065	996301.40	0.3321	P	1.9
7	☐	1.000					

y = 0.0017 * x + 2.8800E-004

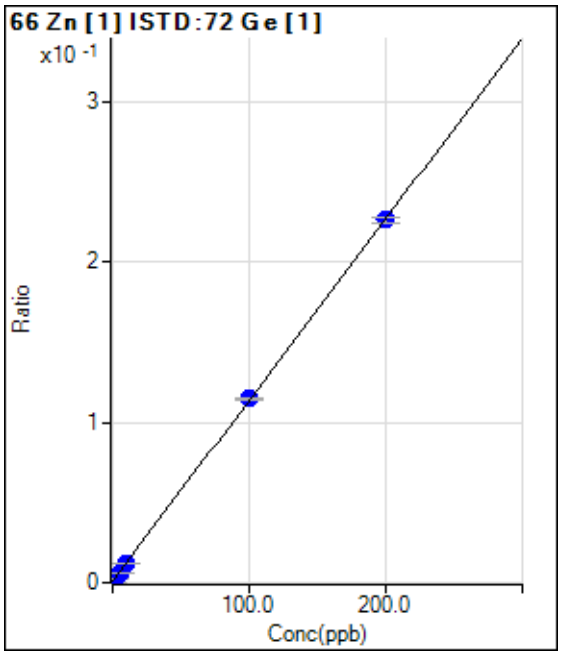
R = 0.9999

DL = 0.057

BEC = 0.1728

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.314	1727.95	0.0006	P	11.1
2	☐	2.000	1.795	9401.88	0.0030	P	1.8
3	☐	5.000	4.940	20811.34	0.0065	P	2.7
4	☐	10.000	10.219	39880.08	0.0125	P	2.2
5	☐	100.000	100.735	353138.99	0.1147	P	1.3
6	☐	200.000	199.625	679537.00	0.2265	P	1.6
7	☐	1.000					

y = 0.0011 * x + 9.2259E-004

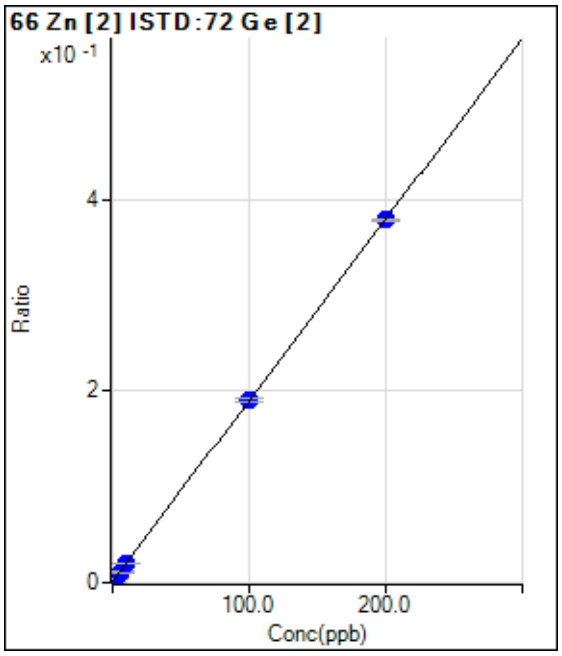
R = 1.0000

DL = 0.1679

BEC = 0.8165

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.227	386.69	0.0009	P	2.8
2	☐	2.000	1.819	1986.87	0.0048	P	4.8
3	☐	5.000	5.111	4590.84	0.0110	P	4.0
4	☐	10.000	10.114	8548.06	0.0205	P	2.4
5	☐	100.000	100.378	75084.53	0.1909	P	1.9
6	☐	200.000	199.804	146569.22	0.3787	P	0.8
7	☐	1.000					

y = 0.0019 * x + 0.0014

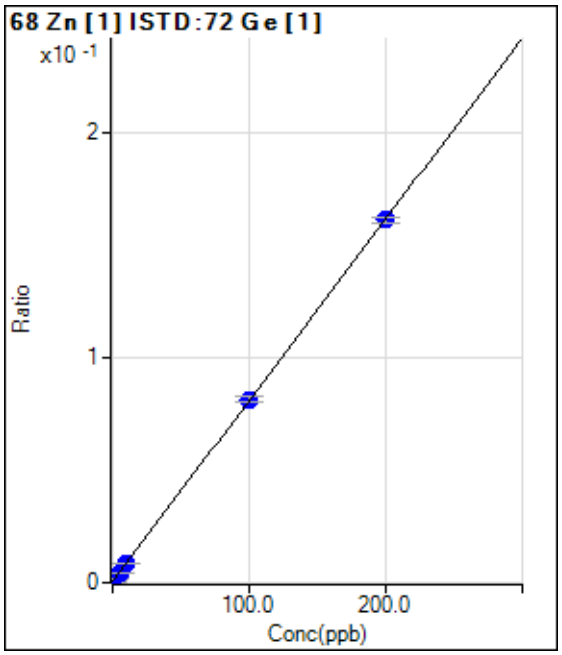
R = 1.0000

DL = 0.04209

BEC = 0.7289

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1337.89	0.0004	P	11.4
2	☐	2.000	2.115	6830.57	0.0021	P	2.5
3	☐	5.000	5.235	14907.14	0.0047	P	1.4
4	☐	10.000	10.465	28396.80	0.0089	P	0.9
5	☐	100.000	100.576	250852.04	0.0815	P	2.6
6	☐	200.000	199.682	484302.64	0.1614	P	1.7
7	☐	1.000					

y = 8.0618E-004 * x + 4.3933E-004

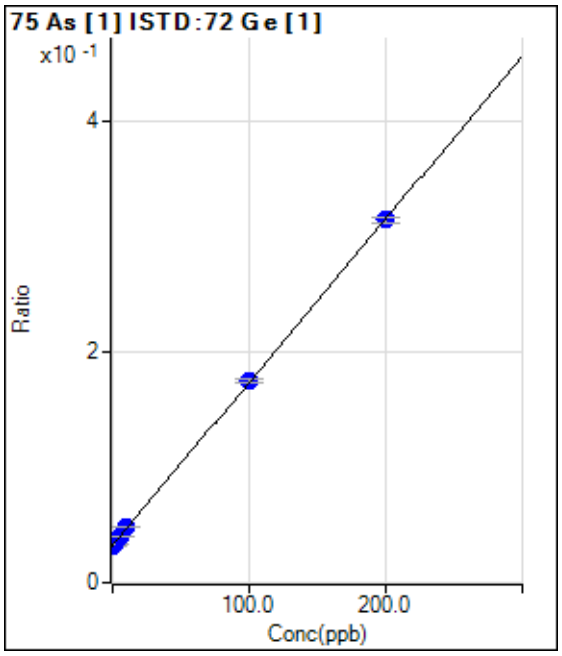
R = 1.0000

DL = 0.1866

BEC = 0.5449

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	98501.95	0.0323	P	8.9
2	☐	2.000	0.938	107170.34	0.0336	P	0.9
3	☐	5.000	5.370	127637.71	0.0399	P	0.4
4	☐	10.000	11.707	156224.42	0.0488	P	0.8
5	☐	100.000	100.758	537068.73	0.1745	P	1.6
6	☐	200.000	199.537	941851.63	0.3139	P	1.8
7	☐	1.000					

y = 0.0014 * x + 0.0323

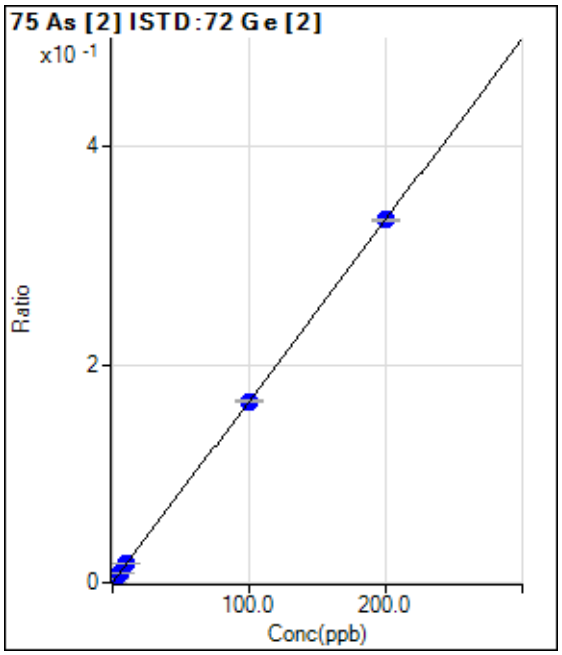
R = 0.9999

DL = 6.121

BEC = 22.9

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	60.00	0.0001	P	17.2
2	☐	2.000	1.960	1407.49	0.0034	P	5.6
3	☐	5.000	5.257	3703.06	0.0089	P	2.9
4	☐	10.000	10.306	7222.75	0.0173	P	0.2
5	☐	100.000	99.966	65488.87	0.1665	P	0.6
6	☐	200.000	199.996	128897.54	0.3330	P	0.2
7	☐	1.000					

y = 0.0017 * x + 1.4702E-004

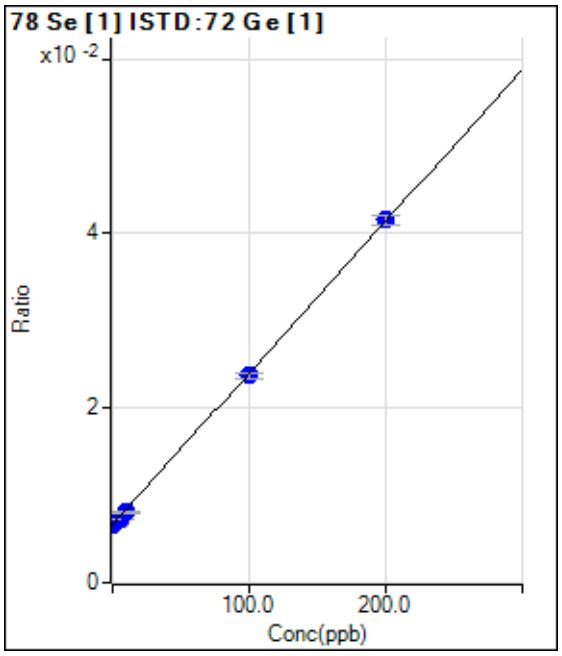
R = 1.0000

DL = 0.04562

BEC = 0.08834

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20277.48	0.0066	P	6.7
2	☐	2.000	0.541	21471.50	0.0067	P	1.9
3	☐	5.000	3.296	23096.60	0.0072	P	1.3
4	☐	10.000	8.177	25804.93	0.0081	P	2.1
5	☐	100.000	98.555	73154.57	0.0238	P	2.9
6	☐	200.000	200.871	124671.05	0.0416	P	2.6
7	☐	1.000					

y = 1.7379E-004 * x + 0.0066

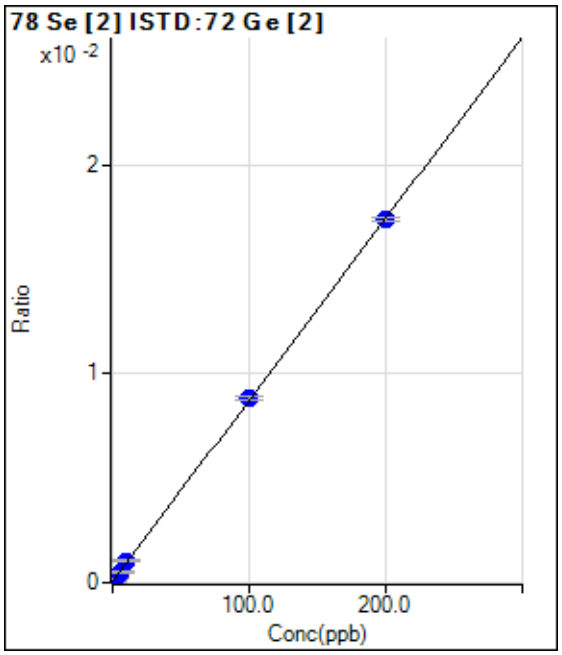
R = 0.9999

DL = 7.717

BEC = 38.25

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21.85	0.0001	P	53.7
2	☐	2.000	1.917	90.74	0.0002	P	4.9
3	☐	5.000	5.147	208.15	0.0005	P	9.0
4	☐	10.000	11.493	438.53	0.0011	P	6.0
5	☐	100.000	101.056	3468.55	0.0088	P	1.8
6	☐	200.000	199.395	6715.87	0.0174	P	0.9
7	☐	1.000					

y = 8.6745E-005 * x + 5.3468E-005

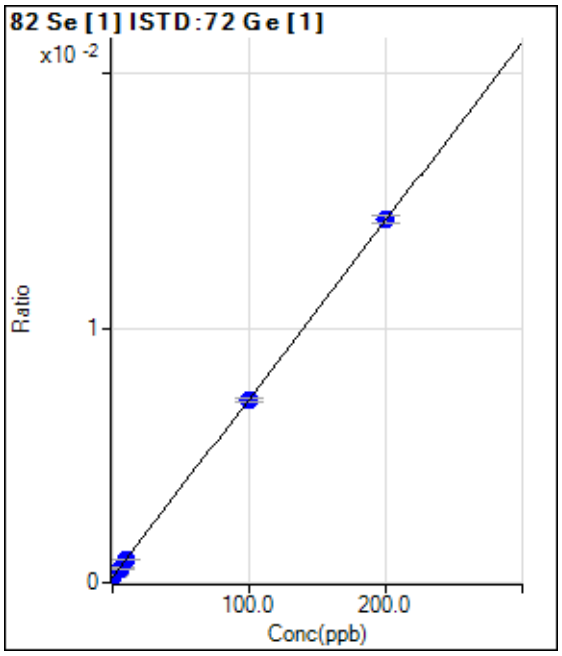
R = 1.0000

DL = 0.9939

BEC = 0.6164

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	645.58	0.0002	P	10.2
2	☐	2.000	1.896	1097.83	0.0003	P	7.6
3	☐	5.000	5.036	1806.42	0.0006	P	2.6
4	☐	10.000	10.212	2966.60	0.0009	P	0.1
5	☐	100.000	99.224	22043.03	0.0072	P	2.1
6	☐	200.000	200.377	42750.67	0.0142	P	2.2
7	☐	1.000					

y = 7.0055E-005 * x + 2.1190E-004

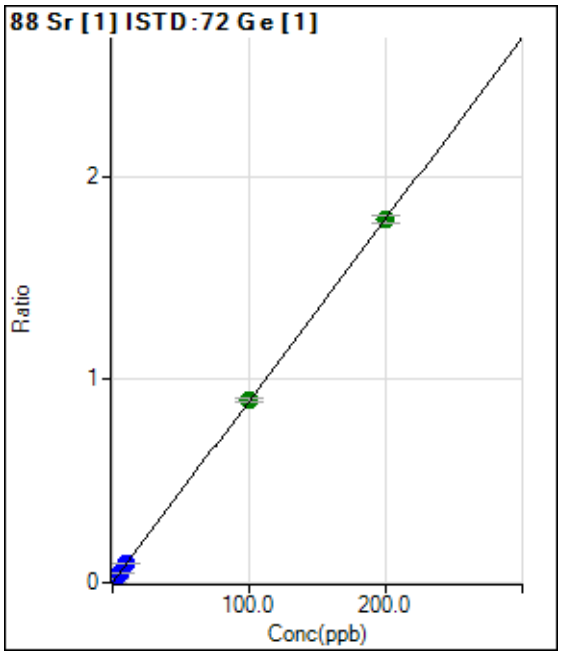
R = 1.0000

DL = 0.9248

BEC = 3.025

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2046.91	0.0007	P	53.5
2	☐	2.000	2.085	61538.41	0.0193	P	1.8
3	☐	5.000	5.146	149327.30	0.0467	P	0.5
4	☐	10.000	10.391	299214.78	0.0935	P	1.5
5	☐	100.000	100.716	2771892.49	0.9008	A	2.1
6	☐	200.000	199.618	5354200.44	1.7846	A	2.1
7	☐	1.000					

y = 0.0089 * x + 6.8233E-004

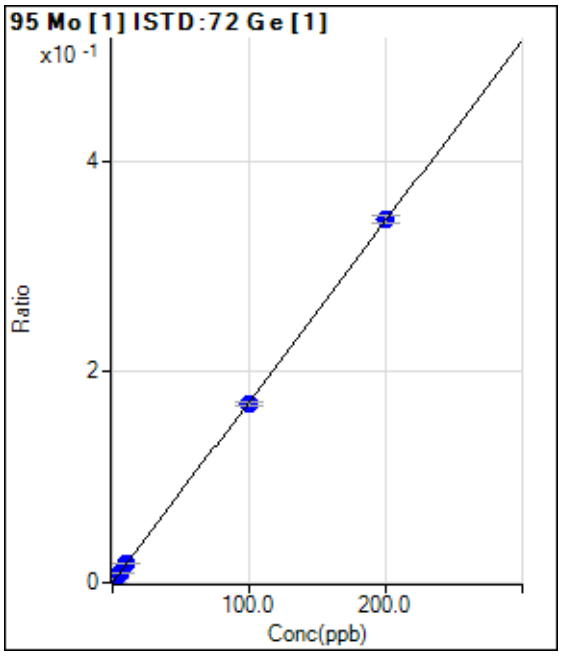
R = 1.0000

DL = 0.1226

BEC = 0.07635

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	242.24	0.0001	P	43.5
2	☐	2.000	2.031	11361.01	0.0036	P	1.8
3	☐	5.000	5.115	28347.28	0.0089	P	2.5
4	☐	10.000	10.302	56831.21	0.0178	P	1.8
5	☐	100.000	98.701	521694.81	0.1695	P	2.4
6	☐	200.000	200.631	1033692.30	0.3445	P	2.0
7	☐	1.000					

y = 0.0017 * x + 8.0465E-005

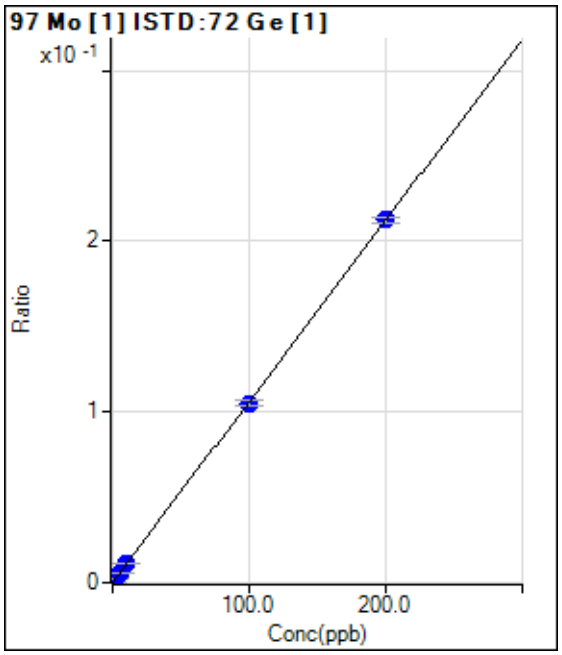
R = 1.0000

DL = 0.0611

BEC = 0.04687

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	182.23	0.0001	P	35.2
2	☐	2.000	2.042	7089.62	0.0022	P	0.2
3	☐	5.000	5.083	17432.08	0.0054	P	2.2
4	☐	10.000	10.284	35066.91	0.0110	P	1.5
5	☐	100.000	99.252	323981.98	0.1053	P	2.4
6	☐	200.000	200.357	637488.89	0.2125	P	1.8
7	☐	1.000					

y = 0.0011 * x + 6.0354E-005

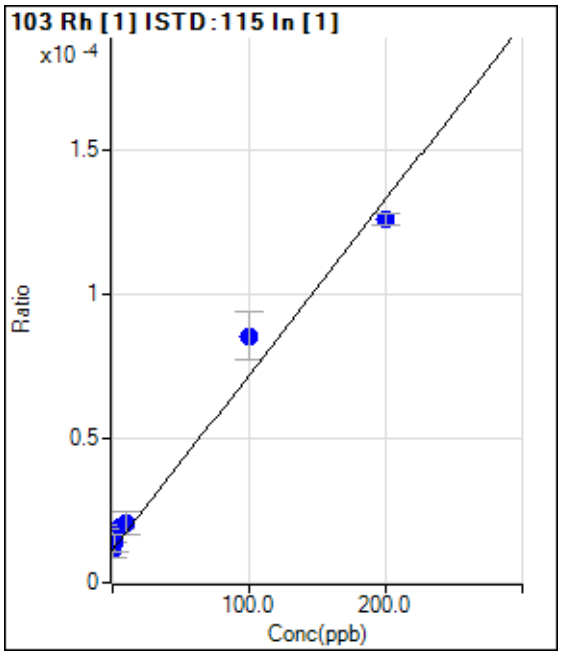
R = 1.0000

DL = 0.06013

BEC = 0.05693

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34.44	0.0000	P	45.6
2	☐	2.000	4.153	44.44	0.0000	P	48.5
3	☐	5.000	13.235	62.22	0.0000	P	7.1
4	☐	10.000	15.412	65.56	0.0000	P	36.9
5	☐	100.000	122.100	261.13	0.0001	P	19.8
6	☐	200.000	188.452	372.24	0.0001	P	3.2
7	☐	1.000					

y = 6.0681E-007 * x + 1.1311E-005

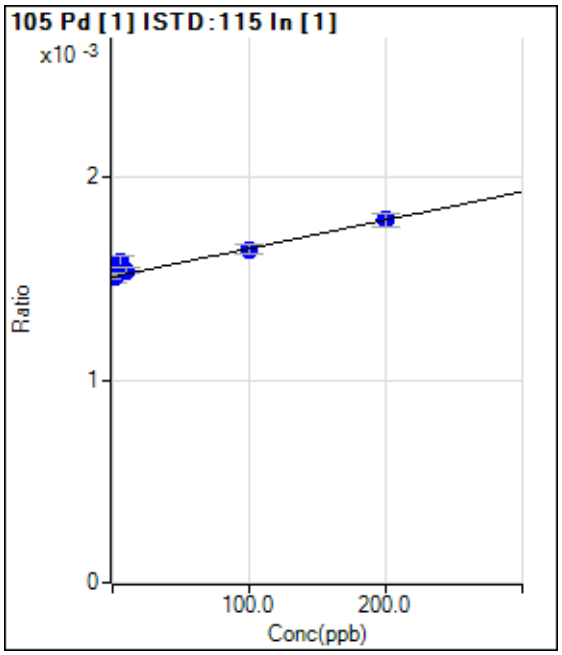
R = 0.9912

DL = 25.52

BEC = 18.64

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4656.42	0.0015	P	3.5
2	☐	2.000	-2.906	4814.25	0.0015	P	1.3
3	☐	5.000	53.061	5097.72	0.0016	P	3.8
4	☐	10.000	22.160	4900.95	0.0015	P	1.6
5	☐	100.000	96.055	5029.90	0.0016	P	2.8
6	☐	200.000	200.212	5304.45	0.0018	P	3.6
7	☐	1.000					

y = 1.4018E-006 * x + 0.0015

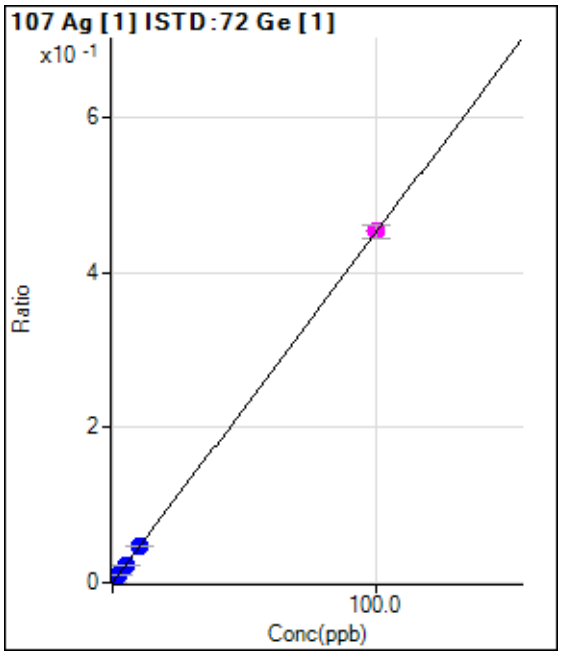
R = 0.9690

DL = 111.8

BEC = 1076

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	144.45	0.0000	P	8.4
2	☐	2.000	2.025	29389.33	0.0092	P	1.5
3	☐	5.000	5.106	74176.75	0.0232	P	1.2
4	☐	10.000	10.361	150329.77	0.0470	P	2.2
5	☐	100.000	99.958	1393782.44	0.4530	M	4.3
6	☐			2723911.94	0.9079	A	1.8
7	☐	1.000					

y = 0.0045 * x + 4.7363E-005

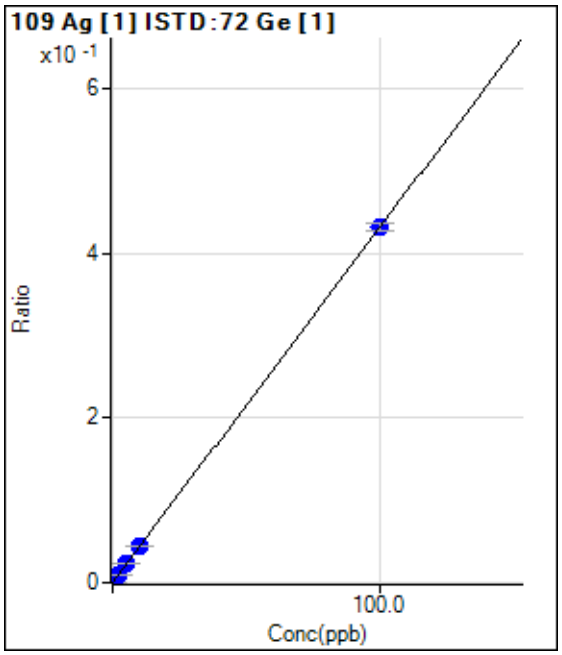
R = 1.0000

DL = 0.002646

BEC = 0.01045

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	120.01	0.0000	P	14.1
2	☐	2.000	2.060	28527.84	0.0090	P	1.7
3	☐	5.000	5.140	71299.22	0.0223	P	0.5
4	☐	10.000	10.372	143715.34	0.0449	P	1.7
5	☐	100.000	99.955	1331427.18	0.4327	P	2.2
6	☐			2638033.76	0.8792	A	1.2
7	☐	1.000					

y = 0.0043 * x + 3.9343E-005

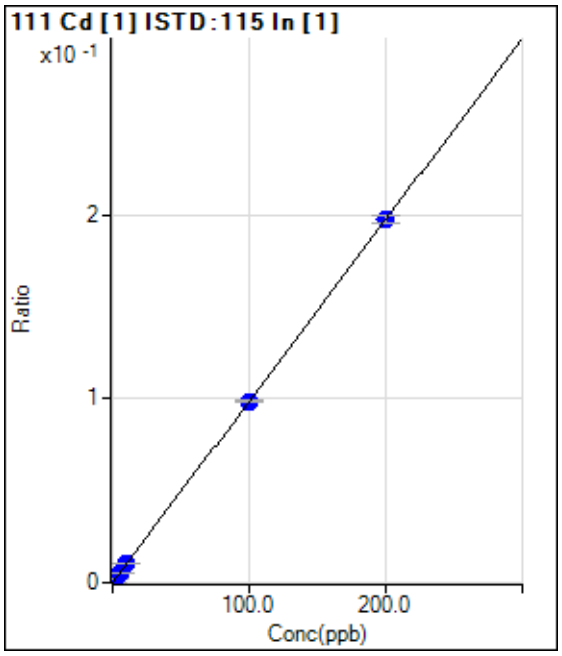
R = 1.0000

DL = 0.003853

BEC = 0.00909

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.67	0.0000	P	64.3
2	☐	2.000	1.979	6264.80	0.0020	P	1.0
3	☐	5.000	5.099	16206.46	0.0050	P	3.8
4	☐	10.000	10.341	32487.49	0.0102	P	2.7
5	☐	100.000	99.880	301612.76	0.0986	P	1.5
6	☐	200.000	200.041	584742.22	0.1974	P	2.1
7	☐	1.000					

y = 9.8672E-004 * x + 5.5154E-006

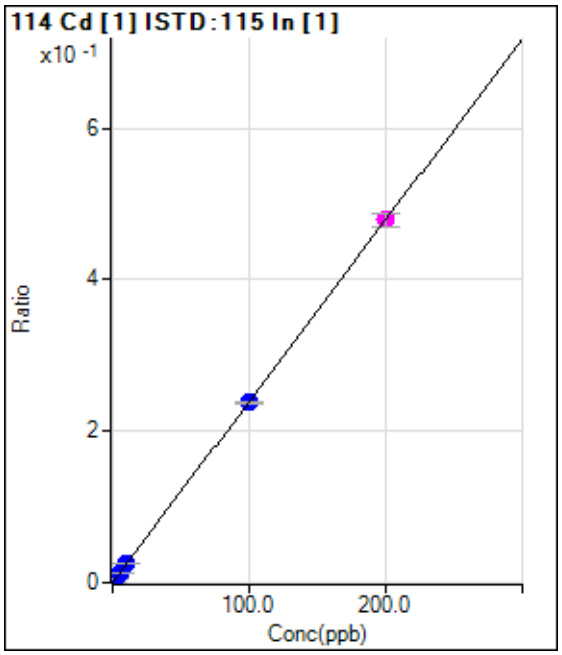
R = 1.0000

DL = 0.01078

BEC = 0.00559

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	66.67	0.0000	P	44.3
2	☐	2.000	2.010	15460.12	0.0048	P	0.6
3	☐	5.000	4.935	38078.50	0.0118	P	1.3
4	☐	10.000	10.308	78581.60	0.0247	P	1.0
5	☐	100.000	99.600	729525.04	0.2384	P	1.3
6	☐	200.000	200.186	1419133.57	0.4791	M	3.5
7	☐	1.000					

y = 0.0024 * x + 2.1798E-005

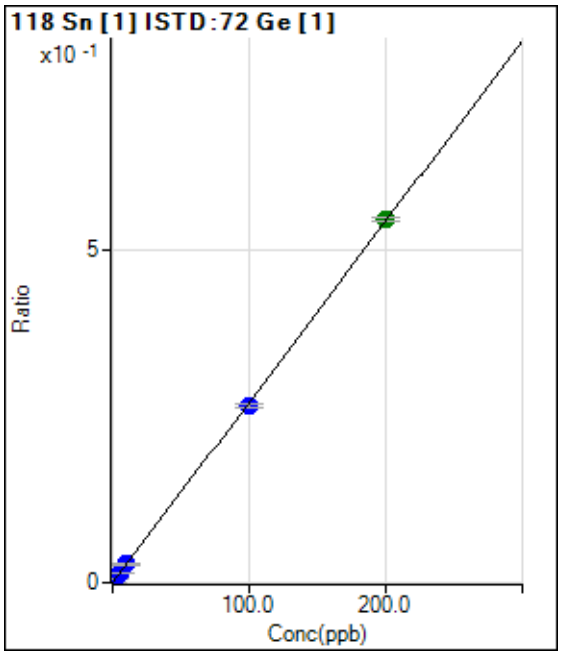
R = 1.0000

DL = 0.01209

BEC = 0.009108

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	787.83	0.0003	P	9.3
2	☐	2.000	1.982	17905.03	0.0056	P	2.0
3	☐	5.000	4.953	43700.71	0.0137	P	1.2
4	☐	10.000	10.079	88051.06	0.0275	P	1.5
5	☐	100.000	98.011	816830.42	0.2654	P	2.4
6	☐	200.000	200.992	1632475.24	0.5441	A	1.1
7	☐	1.000					

y = 0.0027 * x + 2.5811E-004

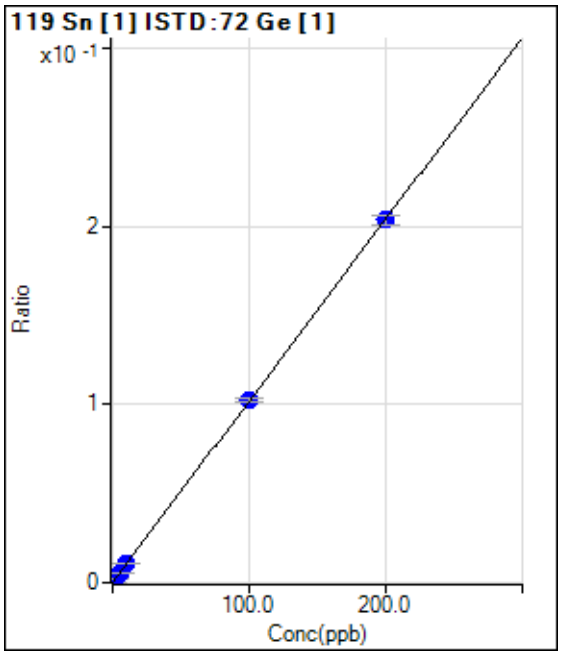
R = 0.9999

DL = 0.02652

BEC = 0.09539

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	338.91	0.0001	P	19.9
2	☐	2.000	2.030	6946.27	0.0022	P	1.6
3	☐	5.000	5.180	17249.73	0.0054	P	1.3
4	☐	10.000	10.258	33800.35	0.0106	P	2.8
5	☐	100.000	100.421	315387.56	0.1025	P	1.6
6	☐	200.000	199.772	611307.45	0.2038	P	2.3
7	☐	1.000					

y = 0.0010 * x + 1.1156E-004

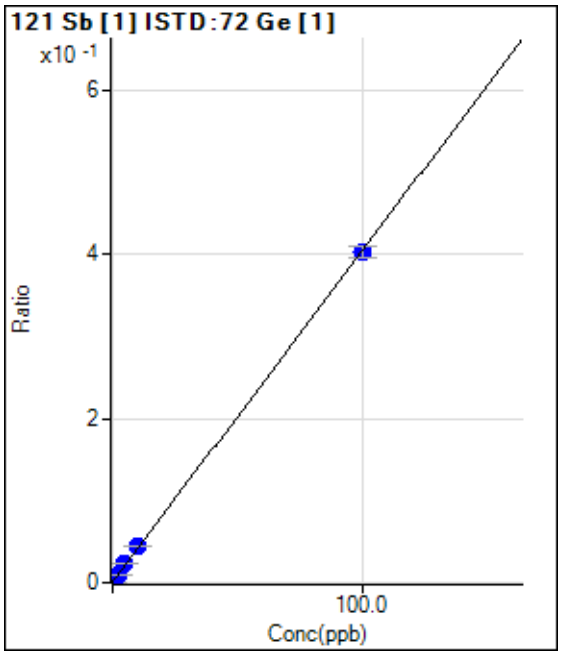
R = 1.0000

DL = 0.06532

BEC = 0.1094

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2360.22	0.0008	P	20.9
2	☐	2.000	2.137	29858.39	0.0094	P	1.6
3	☐	5.000	5.436	72432.68	0.0226	P	1.1
4	☐	10.000	11.027	144325.52	0.0451	P	2.0
5	☐	100.000	99.873	1238255.03	0.4024	P	3.0
6	☐			2571230.01	0.8571	A	3.5
7	☐	1.000					

y = 0.0040 * x + 7.7763E-004

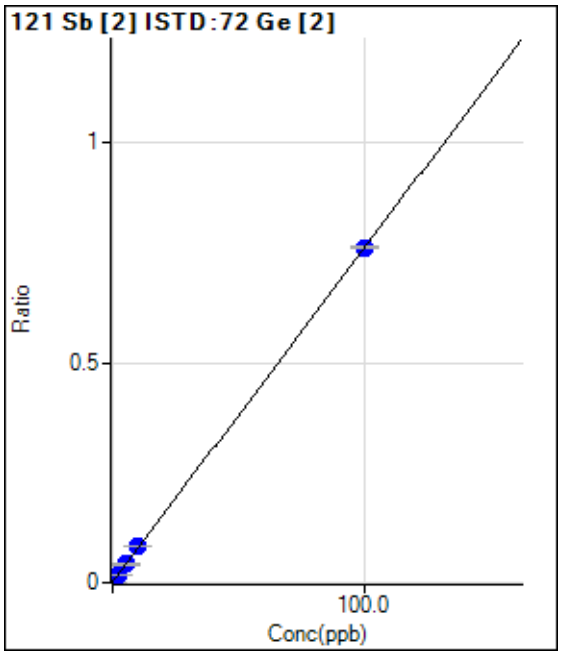
R = 1.0000

DL = 0.1211

BEC = 0.1934

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	500.02	0.0012	P	6.5
2	☐	2.000	2.118	7164.27	0.0173	P	1.1
3	☐	5.000	5.305	17325.61	0.0416	P	1.8
4	☐	10.000	10.522	33957.05	0.0813	P	0.3
5	☐	100.000	99.930	299697.56	0.7620	P	0.6
6	☐			600711.94	1.5519	P	0.4
7	☐	1.000					

y = 0.0076 * x + 0.0012

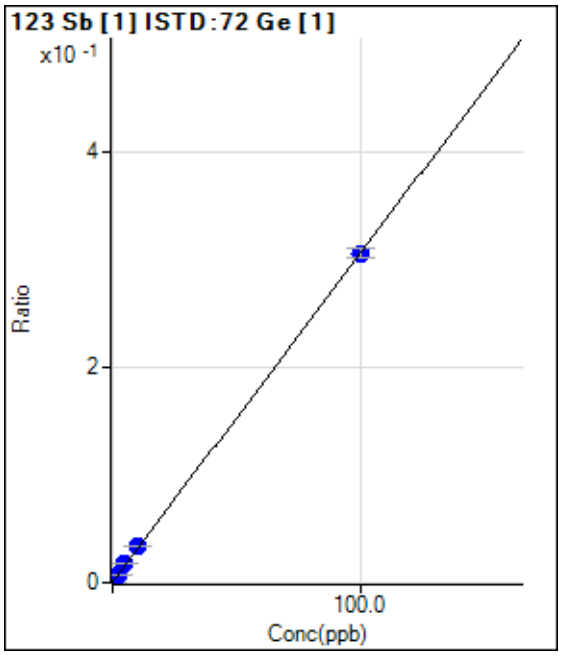
R = 1.0000

DL = 0.03154

BEC = 0.1611

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1705.67	0.0006	P	20.3
2	☐	2.000	2.161	22816.79	0.0072	P	2.1
3	☐	5.000	5.456	55122.32	0.0172	P	2.3
4	☐	10.000	11.061	109881.69	0.0344	P	1.9
5	☐	100.000	99.868	940537.81	0.3057	P	2.8
6	☐			1953520.92	0.6512	A	2.7
7	☐	1.000					

y = 0.0031 * x + 5.6184E-004

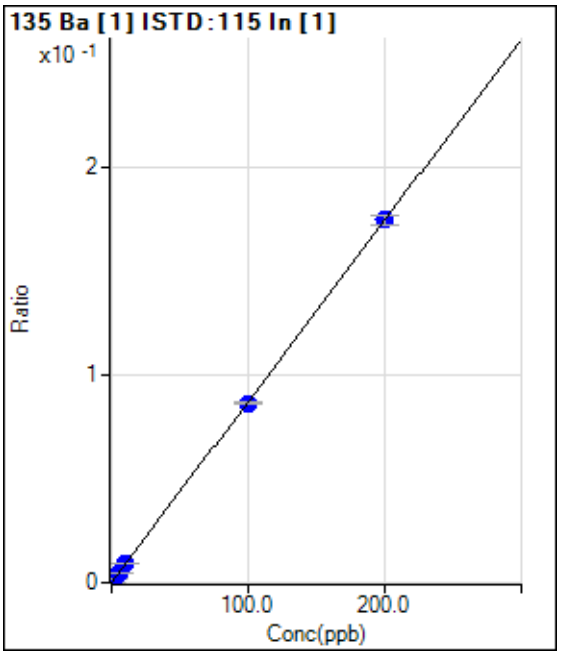
R = 1.0000

DL = 0.1117

BEC = 0.1839

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	128.90	0.0000	P	37.7
2	☐	2.000	1.945	5572.33	0.0017	P	3.5
3	☐	5.000	5.109	14494.83	0.0045	P	1.9
4	☐	10.000	10.276	28693.12	0.0090	P	2.5
5	☐	100.000	99.260	265412.57	0.0867	P	0.6
6	☐	200.000	200.354	518403.93	0.1750	P	2.8
7	☐	1.000					

y = 8.7329E-004 * x + 4.2257E-005

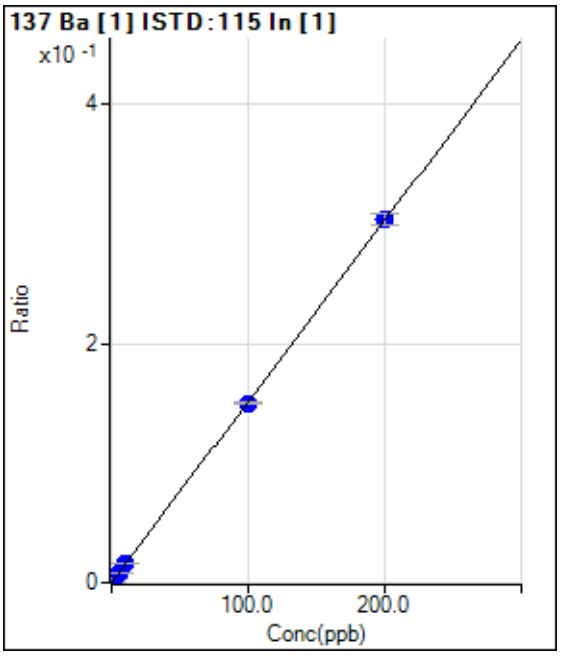
R = 1.0000

DL = 0.05478

BEC = 0.04839

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	255.57	0.0001	P	46.6
2	☐	2.000	1.981	9863.42	0.0031	P	1.2
3	☐	5.000	4.912	24195.67	0.0075	P	1.8
4	☐	10.000	10.202	49409.98	0.0155	P	2.2
5	☐	100.000	98.990	458762.04	0.1499	P	1.1
6	☐	200.000	200.497	899100.45	0.3035	P	3.1
7	☐	1.000					

y = 0.0015 * x + 8.3943E-005

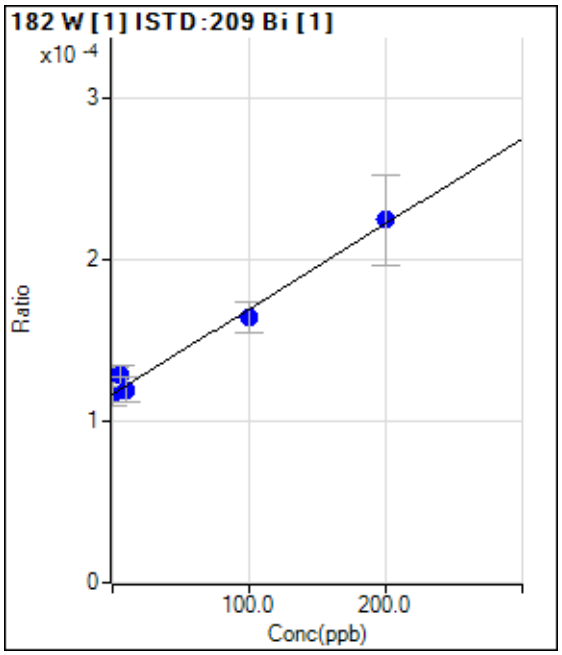
R = 1.0000

DL = 0.07747

BEC = 0.05546

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	340.02	0.0001	P	12.0
2	☐	2.000	22.496	391.14	0.0001	P	7.8
3	☐	5.000	21.310	392.25	0.0001	P	9.9
4	☐	10.000	5.114	365.58	0.0001	P	13.6
5	☐	100.000	90.405	488.92	0.0002	P	11.8
6	☐	200.000	204.429	652.61	0.0002	P	25.0
7	☐	1.000					

y = 5.2812E-007 * x + 1.1690E-004

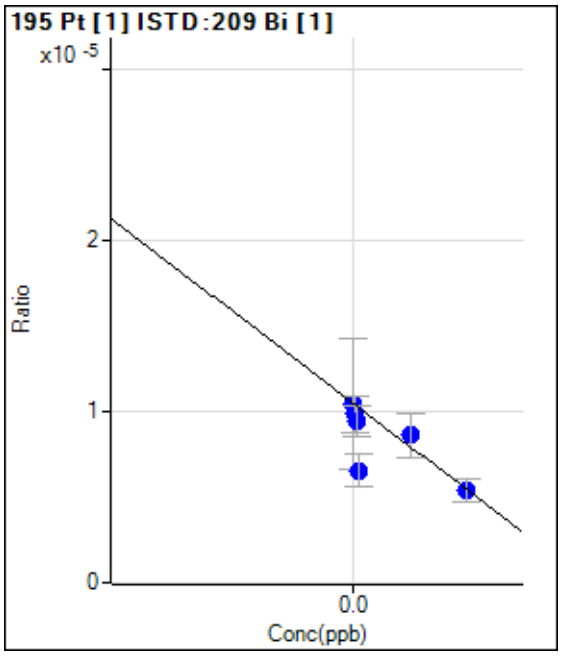
R = 0.9897

DL = 79.64

BEC = 221.4

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0000	P	72.5
2	☐	2.000	23.918	30.00	0.0000	P	21.8
3	☐	5.000	40.197	28.89	0.0000	P	19.3
4	☐	10.000	157.126	20.00	0.0000	P	28.5
5	☐	100.000	74.445	25.56	0.0000	P	30.1
6	☐	200.000	204.322	15.55	0.0000	P	25.3
7	☐	1.000					

y = -2.5021E-008 * x + 1.0473E-005

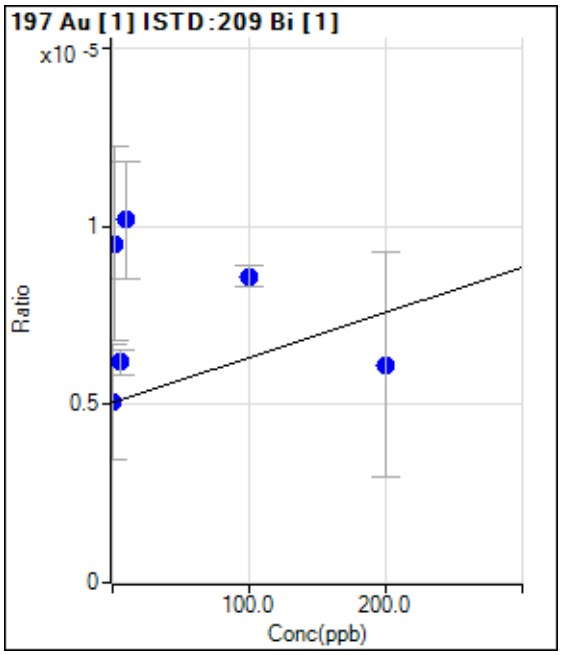
R = -0.7199

DL = -910.2

BEC = -418.6

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14.44	0.0000	P	63.9
2	☐	2.000	353.428	28.89	0.0000	P	57.1
3	☐	5.000	89.234	18.89	0.0000	P	12.0
4	☐	10.000	405.693	31.11	0.0000	P	32.7
5	☐	100.000	281.010	25.56	0.0000	P	6.8
6	☐	200.000	84.090	17.78	0.0000	P	103.
7	☐	1.000					

y = 1.2633E-008 * x + 5.0587E-006

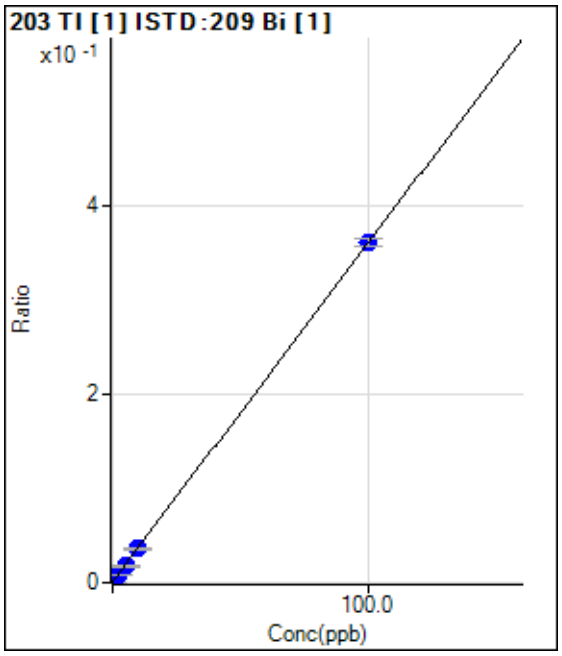
R = -0.2059

DL = 767.7

BEC = 400.4

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2736.95	0.0009	P	2.7
2	☐	2.000	1.837	22881.20	0.0075	P	3.3
3	☐	5.000	4.657	54031.96	0.0177	P	4.1
4	☐	10.000	9.764	110094.55	0.0360	P	2.8
5	☐	100.000	100.044	1069822.29	0.3605	P	2.4
6	☐			2174437.92	0.7489	A	2.4
7	☐	1.000					

y = 0.0036 * x + 9.3675E-004

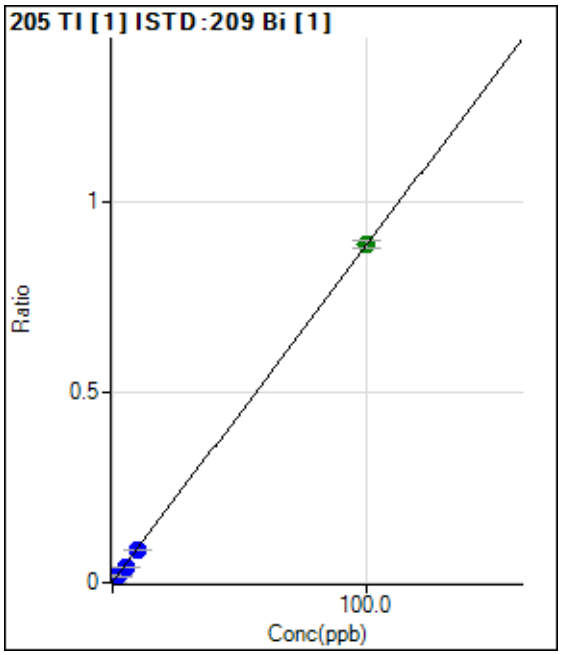
R = 1.0000

DL = 0.0214

BEC = 0.2606

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6470.70	0.0022	P	3.1
2	☐	2.000	1.745	53636.95	0.0177	P	3.9
3	☐	5.000	4.474	127955.25	0.0419	P	4.0
4	☐	10.000	9.404	261363.84	0.0855	P	3.5
5	☐	100.000	100.091	2638012.70	0.8890	A	2.4
6	☐			5110752.62	1.7602	A	2.2
7	☐	1.000					

y = 0.0089 * x + 0.0022

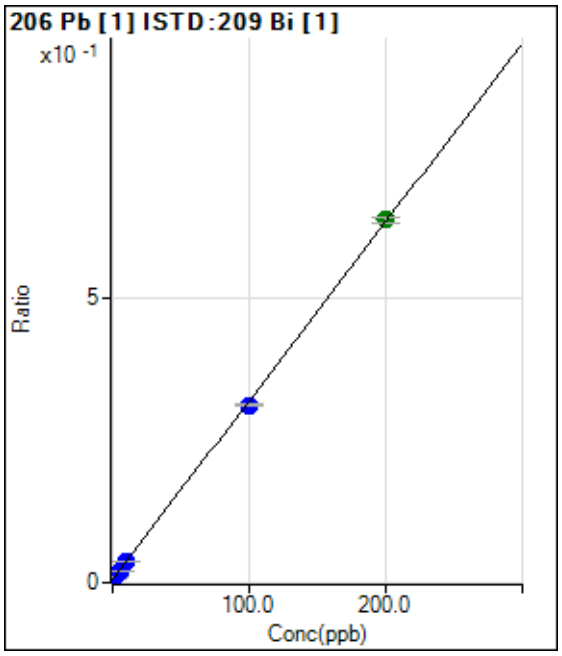
R = 1.0000

DL = 0.0235

BEC = 0.2502

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16067.97	0.0055	P	13.6
2	☐	2.000	1.937	35199.23	0.0116	P	1.9
3	☐	5.000	4.899	63815.54	0.0209	P	2.0
4	☐	10.000	9.952	112124.98	0.0367	P	0.4
5	☐	100.000	97.543	922822.23	0.3110	P	1.2
6	☐	200.000	201.234	1845775.84	0.6357	A	1.8
7	☐	1.000					

y = 0.0031 * x + 0.0055

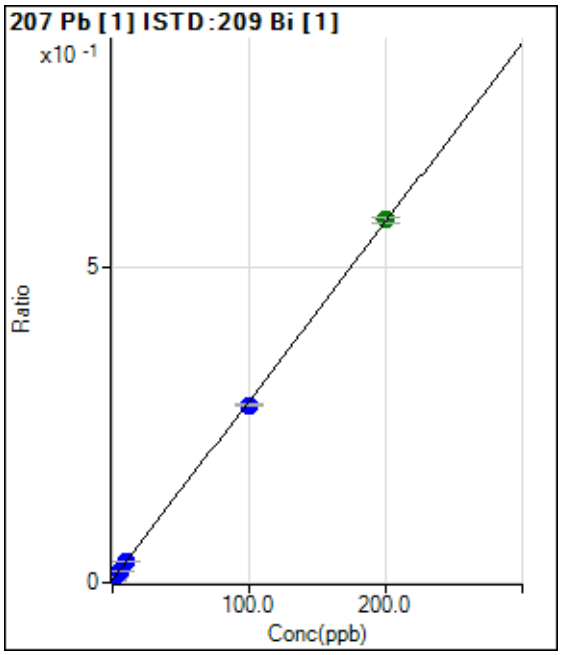
R = 0.9999

DL = 0.7209

BEC = 1.765

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13675.60	0.0047	P	14.3
2	☐	2.000	1.863	30302.07	0.0100	P	1.5
3	☐	5.000	4.835	56274.27	0.0184	P	1.2
4	☐	10.000	9.974	100708.25	0.0330	P	0.8
5	☐	100.000	97.697	835074.34	0.2814	P	1.8
6	☐	200.000	201.158	1668057.18	0.5745	A	1.7
7	☐	1.000					

y = 0.0028 * x + 0.0047

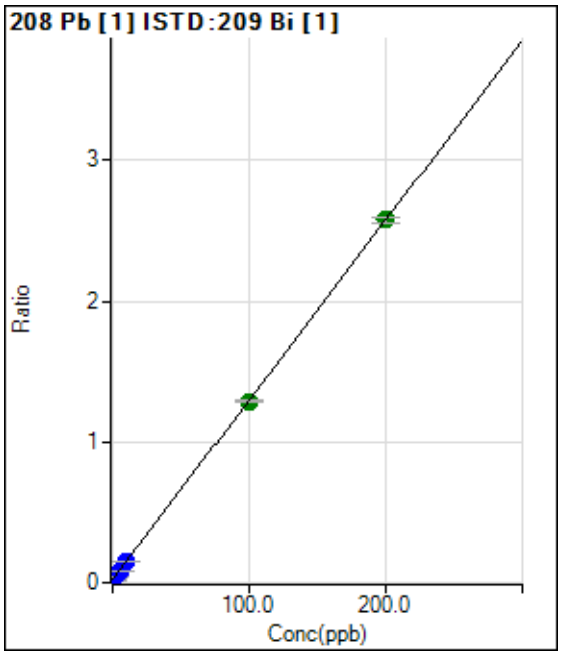
R = 0.9999

DL = 0.7118

BEC = 1.661

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	62512.10	0.0215	P	14.0
2	☐	2.000	1.884	138299.40	0.0456	P	1.3
3	☐	5.000	4.831	254352.21	0.0832	P	0.7
4	☐	10.000	9.980	454947.23	0.1489	P	0.6
5	☐	100.000	99.469	3830536.60	1.2909	A	1.8
6	☐	200.000	200.272	7483551.16	2.5773	A	1.6
7	☐	1.000					

y = 0.0128 * x + 0.0215

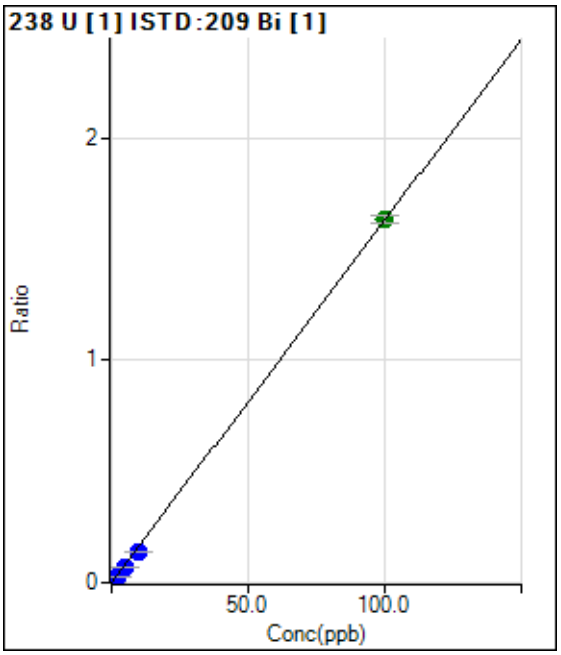
R = 1.0000

DL = 0.7058

BEC = 1.685

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	125.56	0.0000	P	35.2
2	☐	2.000	1.700	84192.06	0.0277	P	1.0
3	☐	5.000	4.244	211492.59	0.0692	P	2.9
4	☐	10.000	8.680	432174.85	0.1414	P	0.6
5	☐	100.000	100.176	4841698.85	1.6317	A	2.2
6	☐			9469377.77	3.2613	A	2.0
7	☐	1.000					

y = 0.0163 * x + 4.3577E-005

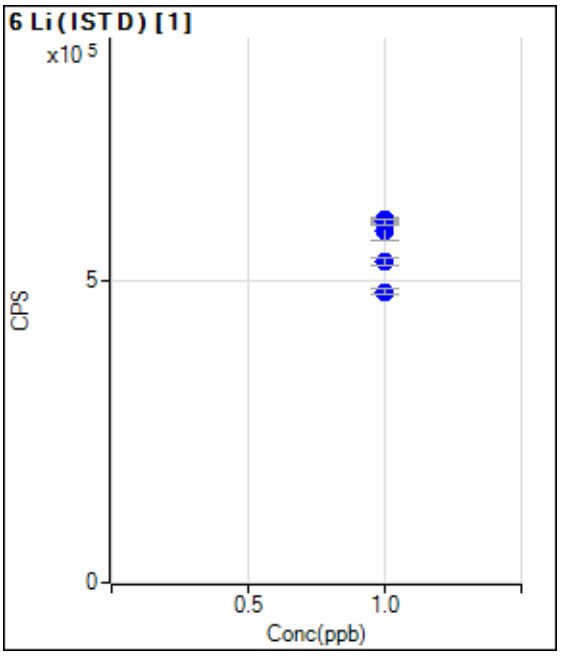
R = 0.9999

DL = 0.002826

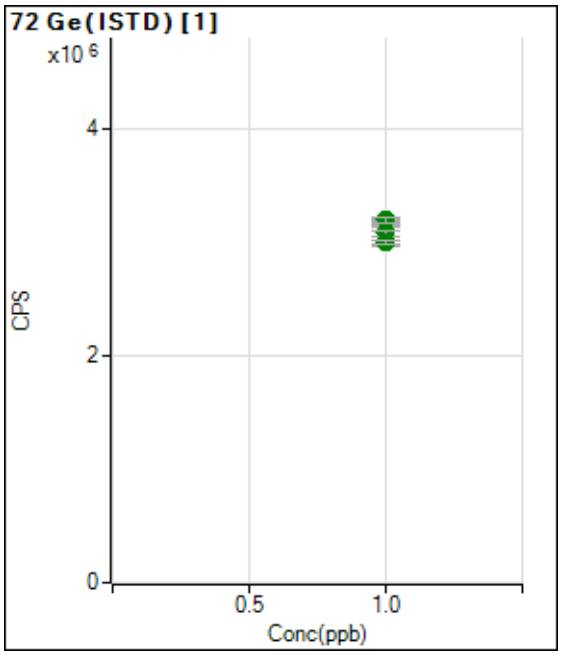
BEC = 0.002675

Weight: None

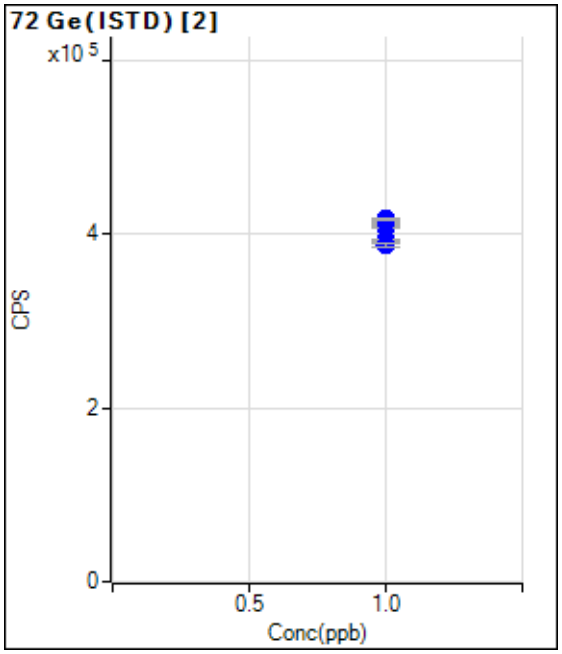
Min Conc: <None>



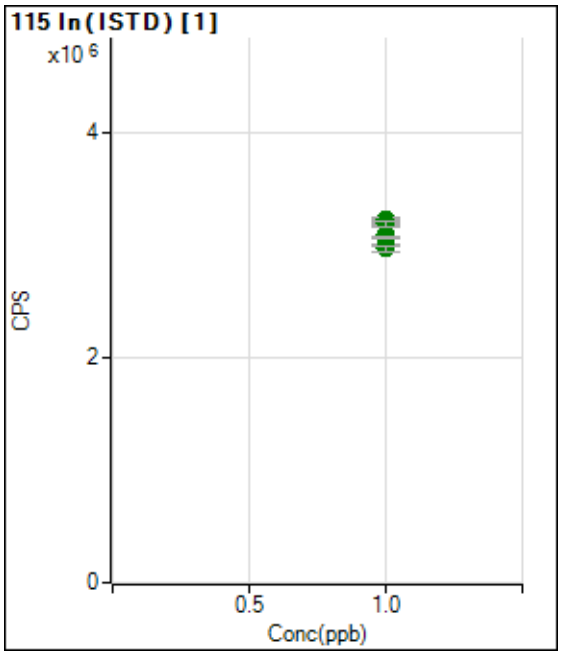
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		580972.65		P	5.3
2	☐	1.000		599265.09		P	1.6
3	☐	1.000		599054.24		P	1.4
4	☐	1.000		596367.92		P	1.7
5	☐	1.000		530164.01		P	2.2
6	☐	1.000		481201.20		P	1.9
7	☐	1.000					



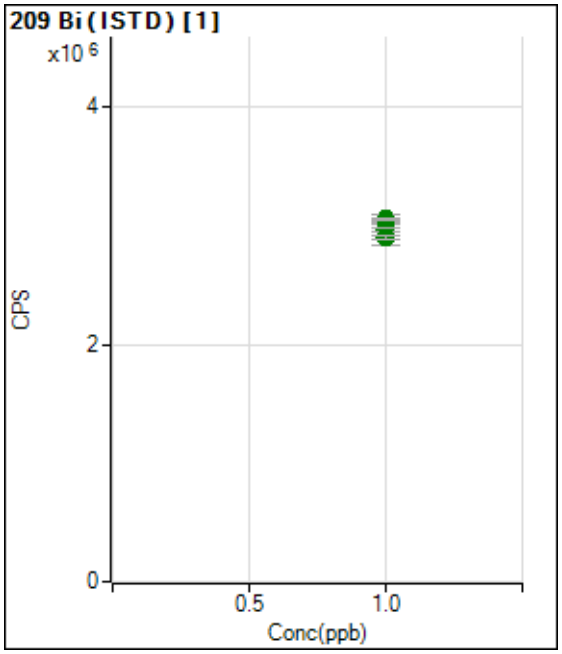
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3057756.54		A	5.3
2	☐	1.000		3185858.39		A	1.5
3	☐	1.000		3199375.75		A	0.9
4	☐	1.000		3199072.84		A	1.4
5	☐	1.000		3078075.18		A	1.8
6	☐	1.000		3000692.77		A	1.2
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		407879.66		P	0.6
2	☐	1.000		412939.83		P	0.2
3	☐	1.000		416316.66		P	0.5
4	☐	1.000		417506.38		P	0.2
5	☐	1.000		393288.83		P	0.5
6	☐	1.000		387083.82		P	0.7
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3088742.88		A	5.1
2	☐	1.000		3199943.02		A	1.4
3	☐	1.000		3218643.48		A	1.8
4	☐	1.000		3182974.45		A	1.3
5	☐	1.000		3060463.18		A	0.8
6	☐	1.000		2963163.43		A	1.9
7	☐	1.000					

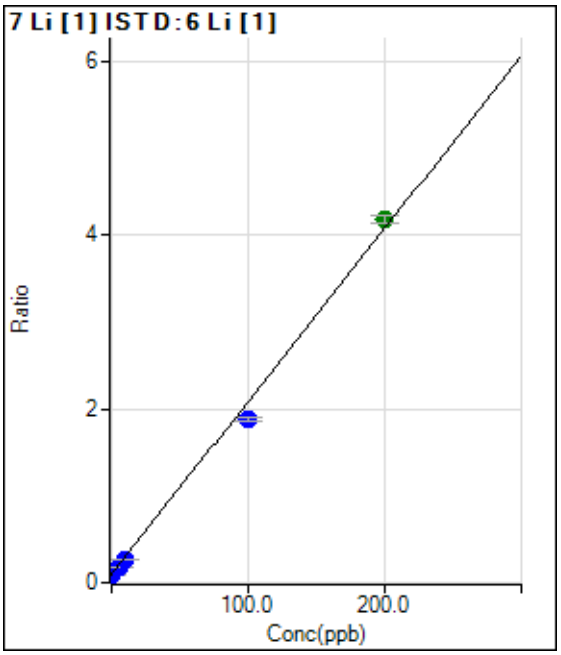


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2922575.97		A	6.1
2	☐	1.000		3035571.38		A	1.1
3	☐	1.000		3058583.00		A	2.0
4	☐	1.000		3055819.18		A	0.8
5	☐	1.000		2967667.75		A	1.0
6	☐	1.000		2903858.56		A	0.9
7	☐	1.000					

Calibration for 112SMPL.D

Batch Folder:	C:¥ICPMH¥1¥DATA¥17D24m00.B¥
Analysis File:	17D24m00.batch.xml
DA Date-Time:	4/24/2017 8:54:48 PM
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	
Tune Step:	#1 042417a5.u
	#2 042417he.u

Level	Standard Data File	Sample Name	Acq. Date-Time
1	106CALB.D	CAL BLK	4/24/2017 8:23:48 PM
2	107CALS.D	2/10/200	4/24/2017 8:28:28 PM
3	108CALS.D	5/25/500	4/24/2017 8:33:12 PM
4	109CALS.D	10/50/1000	4/24/2017 8:37:59 PM
5	110CALS.D	100/500/10K	4/24/2017 8:42:46 PM
6	111CALS.D	200/1000/20K	4/24/2017 8:47:26 PM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	46454.24	0.0988	P	0.2
2	☐	2.000	1.637	62652.47	0.1314	P	0.6
3	☐	5.000	4.147	89271.65	0.1813	P	1.0
4	☐	10.000	8.626	131426.12	0.2704	P	1.1
5	☐	100.000	90.080	848959.02	1.8908	P	2.6
6	☐	200.000	205.054	1660374.08	4.1780	A	2.2
7	☐	1.000					

y = 0.0199 * x + 0.0988

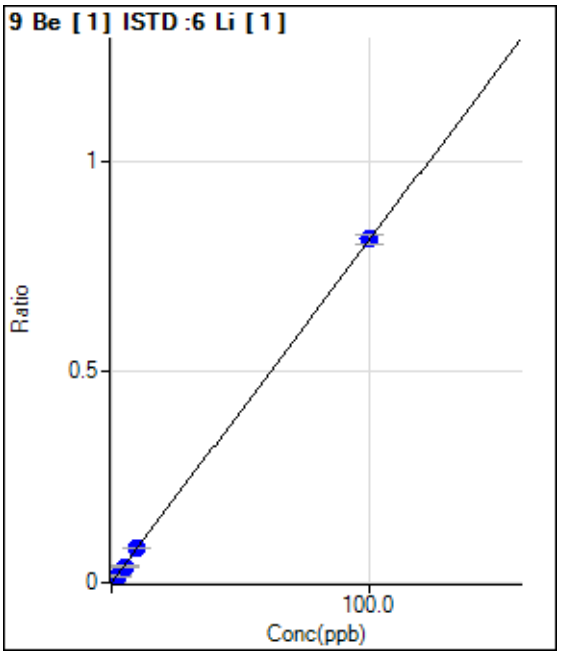
R = 0.9984

DL = 0.02872

BEC = 4.966

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	181.12	0.0004	P	16.5
2	☐	2.000	1.895	7534.14	0.0158	P	2.6
3	☐	5.000	4.700	19008.56	0.0386	P	3.4
4	☐	10.000	9.830	39044.67	0.0803	P	0.6
5	☐	100.000	100.034	365446.33	0.8139	P	2.8
6	☐			709896.18	1.7862	P	1.3
7	☐	1.000					

y = 0.0081 * x + 3.8554E-004

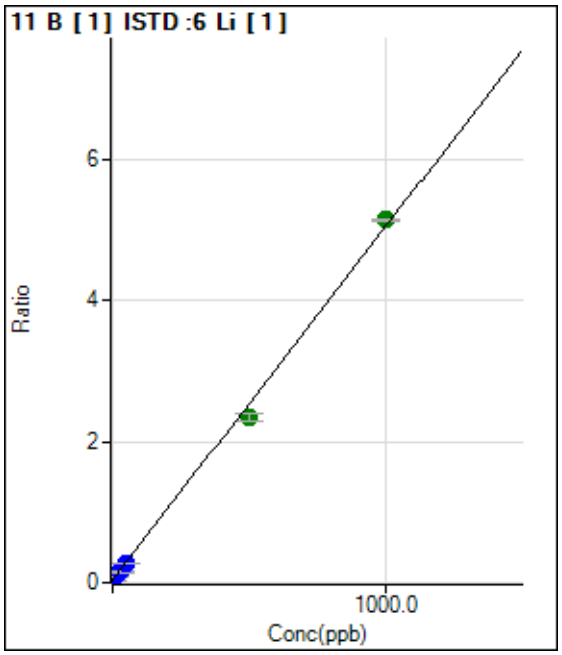
R = 1.0000

DL = 0.02349

BEC = 0.04741

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17926.32	0.0381	P	1.8
2	☐	10.000	8.454	38359.82	0.0804	P	1.5
3	☐	25.000	22.530	74253.74	0.1508	P	4.3
4	☐	50.000	45.201	128438.26	0.2643	P	1.8
5	☐	500.000	461.531	1053743.61	2.3474	A	3.9
6	☐	1000.000	1019.552	2042826.98	5.1394	A	0.7
7	☐	5.000					

y = 0.0050 * x + 0.0381

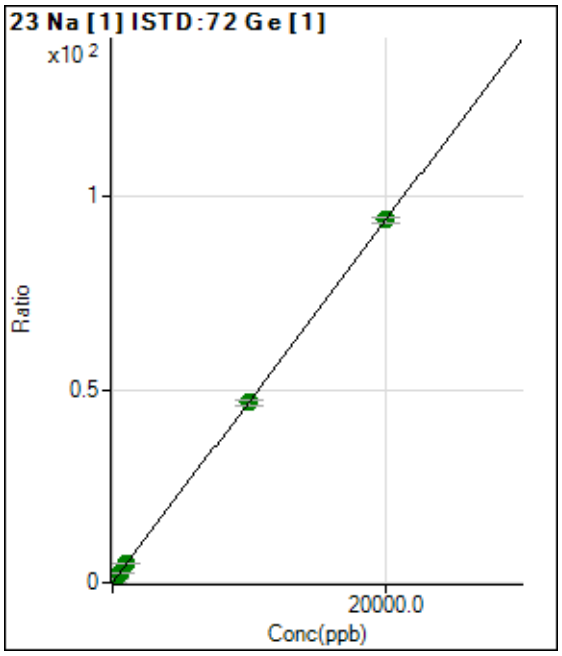
R = 0.9990

DL = 0.421

BEC = 7.619

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	152388.64	0.0508	P	10.9
2	☐	200.000	211.863	3188388.42	1.0449	A	1.0
3	☐	500.000	520.099	7890524.05	2.4911	A	1.9
4	☐	1000.000	1058.154	15651992.96	5.0157	A	1.1
5	☐	10000.00	9931.092	145050192.2	46.6476	A	2.4
6	☐	20000.00	20030.92	281028691.3	94.0362	A	1.6
7	☐	100.000					

y = 0.0047 * x + 0.0508

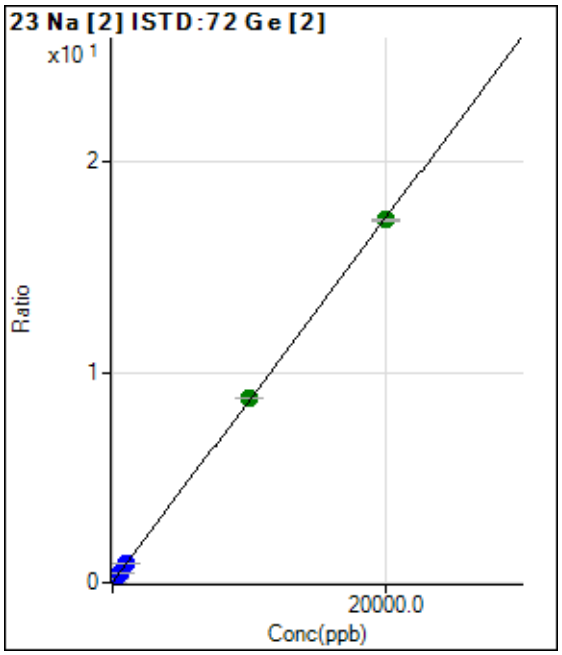
R = 1.0000

DL = 3.527

BEC = 10.83

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5336.61	0.0134	P	4.5
2	☐	200.000	206.389	78495.82	0.1922	P	1.0
3	☐	500.000	520.345	193156.94	0.4641	P	0.6
4	☐	1000.000	1053.076	386421.30	0.9256	P	0.5
5	☐	10000.00	10157.10	3594442.41	8.8117	A	0.1
6	☐	20000.00	19918.22	6936765.04	17.2671	A	0.7
7	☐	100.000					

y = 8.6623E-004 * x + 0.0134

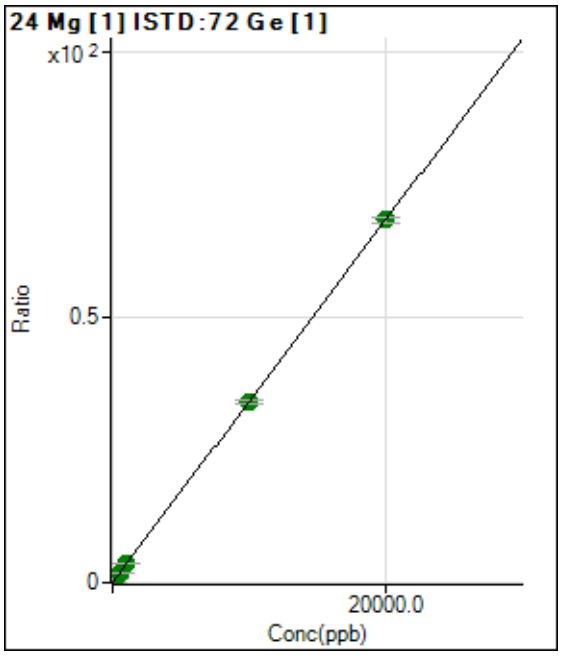
R = 1.0000

DL = 2.065

BEC = 15.45

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	152936.37	0.0510	P	10.2
2	☐	200.000	211.215	2352342.41	0.7709	A	2.3
3	☐	500.000	517.869	5752400.61	1.8162	A	2.4
4	☐	1000.000	1062.073	11457099.00	3.6713	A	0.6
5	☐	10000.00	9960.424	105730115.0	34.0032	A	2.6
6	☐	20000.00	20016.12	204060454.7	68.2801	A	1.4
7	☐	100.000					

y = 0.0034 * x + 0.0510

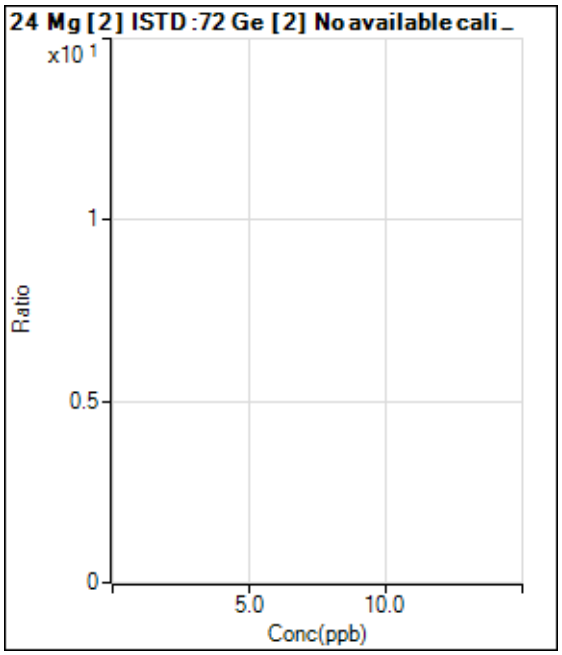
R = 1.0000

DL = 4.596

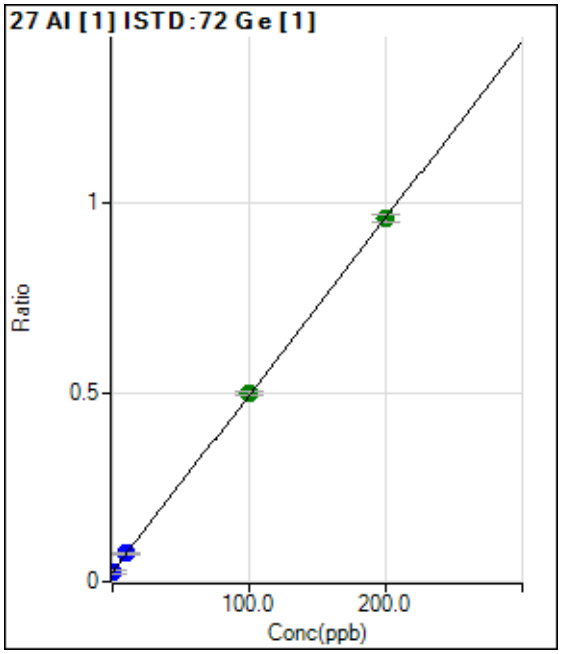
BEC = 14.96

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.00					
6	☐	20000.00					
7	☐	100.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.588	70018.06	0.0233	P	41.5
2	☐			123747.07	0.0406	P	22.6
3	☐			164373.79	0.0517	P	16.0
4	☐	10.000	10.229	230499.20	0.0738	P	10.2
5	☐	100.000	100.741	1543676.64	0.4964	A	2.1
6	☐	200.000	199.618	2863036.80	0.9581	A	2.2
7	☐	1.000					

y = 0.0047 * x + 0.0261

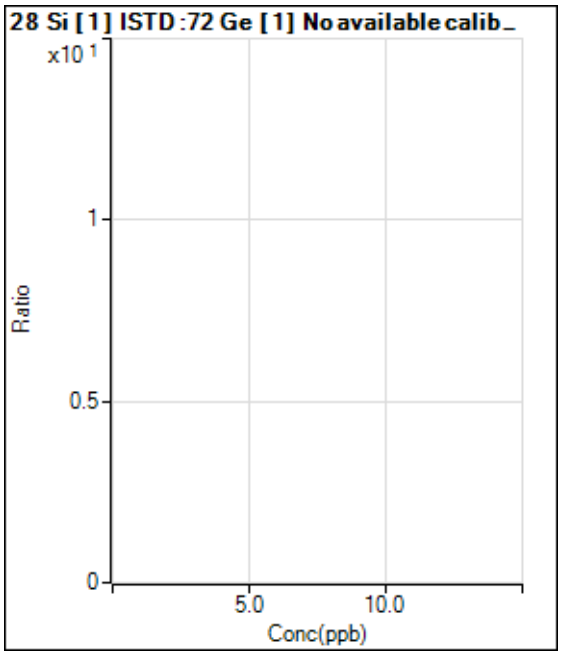
R = 1.0000

DL = 6.215

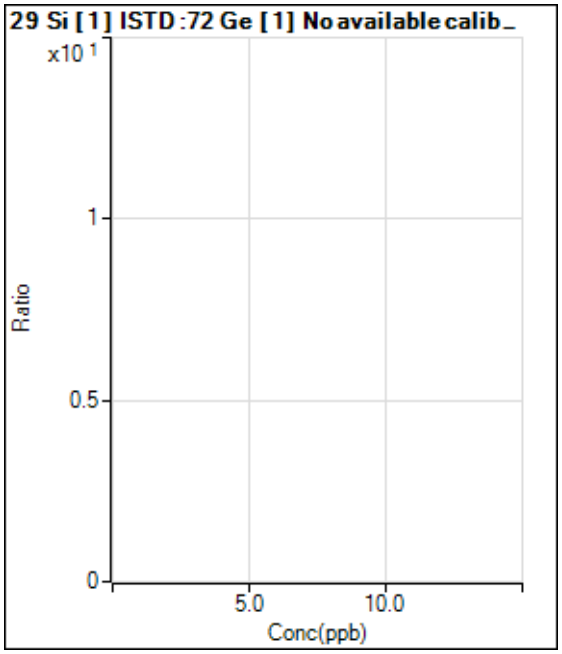
BEC = 5.581

Weight: None

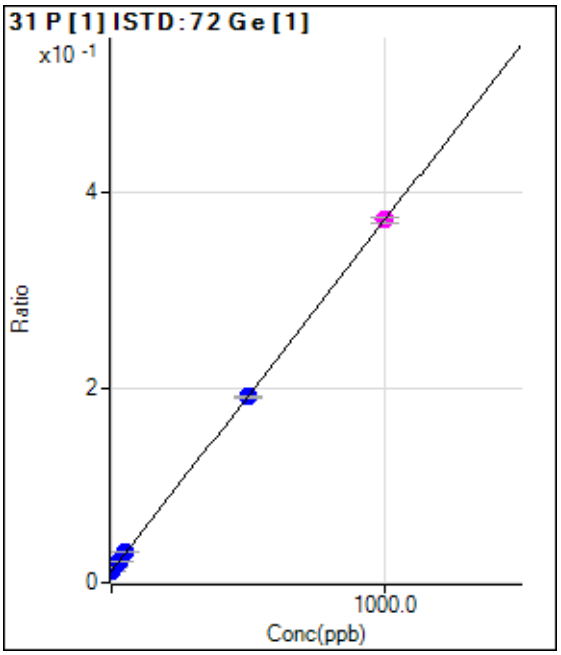
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34970.40	0.0117	P	1.1
2	☐	10.000	10.710	47341.63	0.0155	P	1.8
3	☐	25.000	27.492	68271.12	0.0216	P	2.5
4	☐	50.000	56.013	99296.38	0.0318	P	0.7
5	☐	500.000	496.502	591889.52	0.1903	P	1.6
6	☐	1000.000	1001.379	1111787.32	0.3720	M	1.9
7	☐	5.000					

y = 3.5986E−004 * x + 0.0117

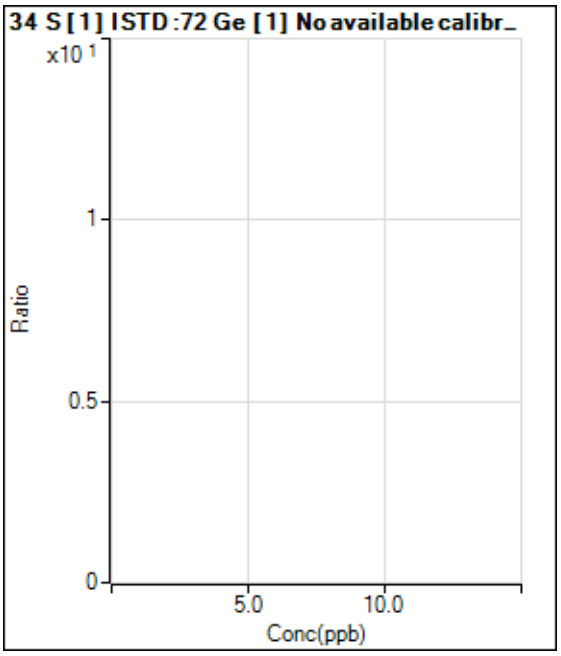
R = 1.0000

DL = 1.083

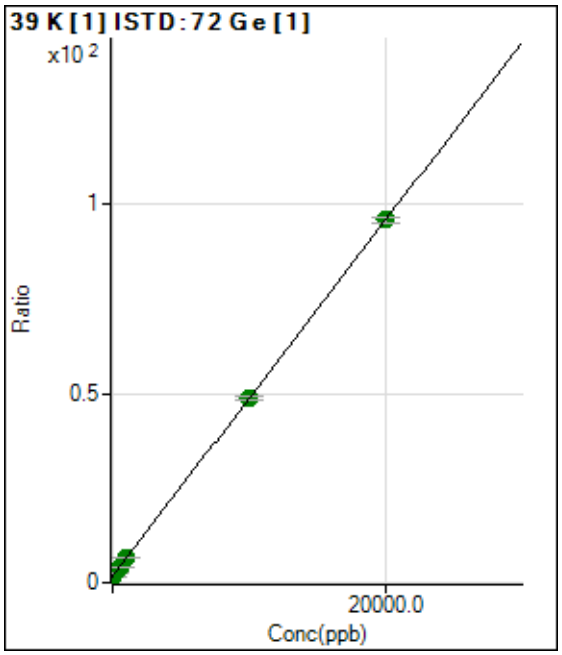
BEC = 32.4

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.00					
6	☐	40000.00					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5130774.75	1.7109	A	0.1
2	☐	200.000	209.094	8219947.38	2.6938	A	1.1
3	☐	500.000	508.558	12990392.58	4.1015	A	2.3
4	☐	1000.000	1046.821	20696281.08	6.6317	A	0.3
5	☐	10000.00	9962.386	150942861.0	48.5415	A	2.2
6	☐	20000.00	20016.16	286315435.7	95.8017	A	1.3
7	☐	100.000					

y = 0.0047 * x + 1.7109

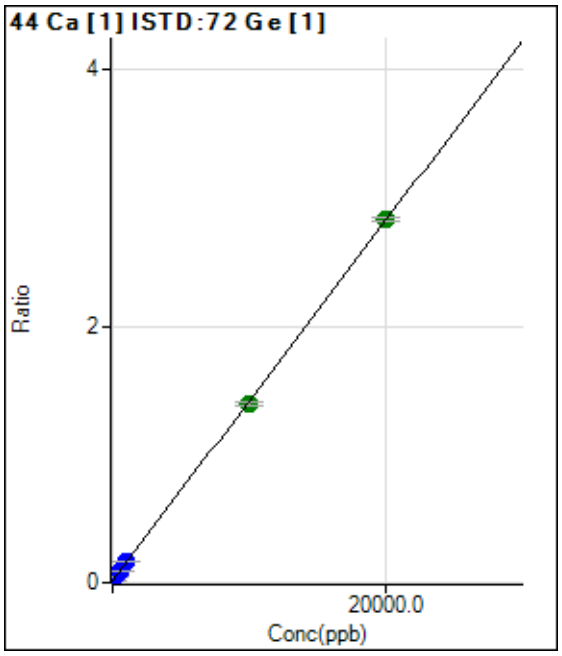
R = 1.0000

DL = 1.489

BEC = 364

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	45392.33	0.0151	P	12.9
2	☐	200.000	219.632	140096.59	0.0459	P	5.6
3	☐	500.000	524.053	280722.91	0.0886	P	0.5
4	☐	1000.000	1064.296	512915.62	0.1644	P	0.5
5	☐	10000.00	9875.237	4352521.84	1.3997	A	2.3
6	☐	20000.00	20058.36	8450540.01	2.8275	A	1.1
7	☐	100.000					

y = 1.4021E-004 * x + 0.0151

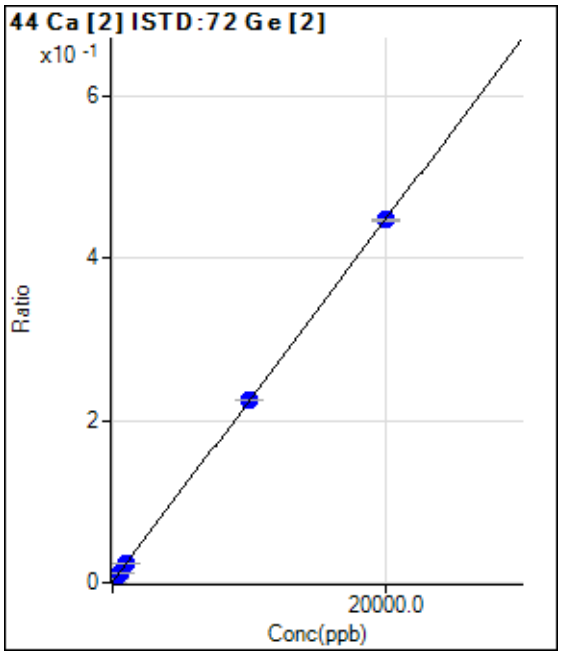
R = 1.0000

DL = 41.67

BEC = 107.9

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	402.24	0.0010	P	17.0
2	☐	200.000	214.150	2364.72	0.0058	P	5.7
3	☐	500.000	515.418	5208.80	0.0125	P	1.3
4	☐	1000.000	1051.142	10217.87	0.0245	P	3.3
5	☐	10000.00	10034.84	91800.76	0.2250	P	0.7
6	☐	20000.00	19979.49	179601.33	0.4471	P	0.7
7	☐	100.000					

y = 2.2326E-005 * x + 0.0010

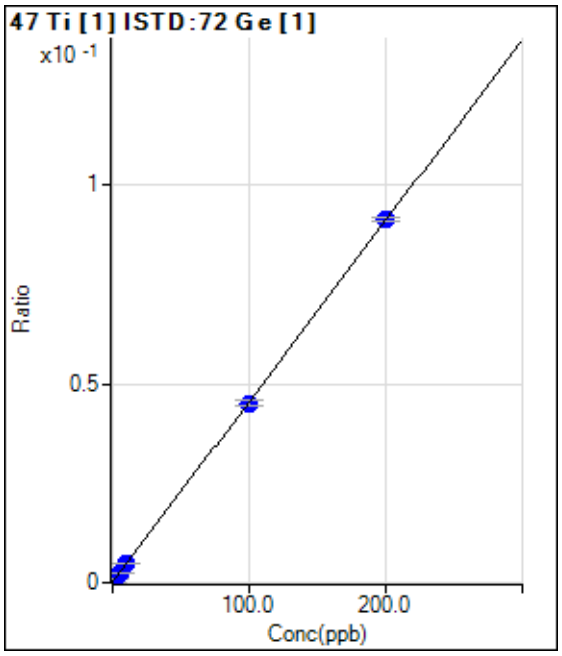
R = 1.0000

DL = 23

BEC = 45.18

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	250.01	0.0001	P	9.7
2	☐	2.000	2.150	3237.12	0.0011	P	4.7
3	☐	5.000	5.094	7594.22	0.0024	P	5.4
4	☐	10.000	10.377	14979.27	0.0048	P	1.5
5	☐	100.000	99.051	140241.03	0.0451	P	3.4
6	☐	200.000	200.452	272556.05	0.0912	P	1.2
7	☐	1.000					

y = 4.5454E-004 * x + 8.3390E-005

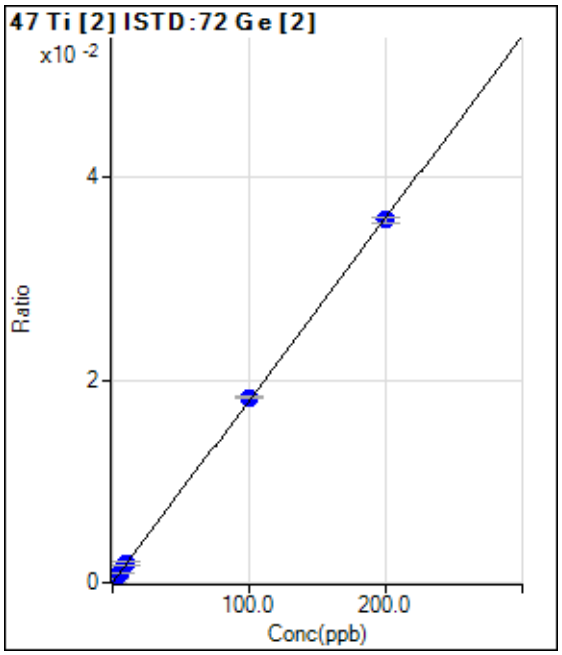
R = 1.0000

DL = 0.05349

BEC = 0.1835

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4.44	0.0000	P	114.
2	☐	2.000	2.498	187.79	0.0005	P	0.7
3	☐	5.000	5.275	398.91	0.0010	P	1.6
4	☐	10.000	10.728	808.95	0.0019	P	18.2
5	☐	100.000	101.706	7455.25	0.0183	P	0.8
6	☐	200.000	199.099	14369.88	0.0358	P	1.8
7	☐	1.000					

y = 1.7959E-004 * x + 1.1165E-005

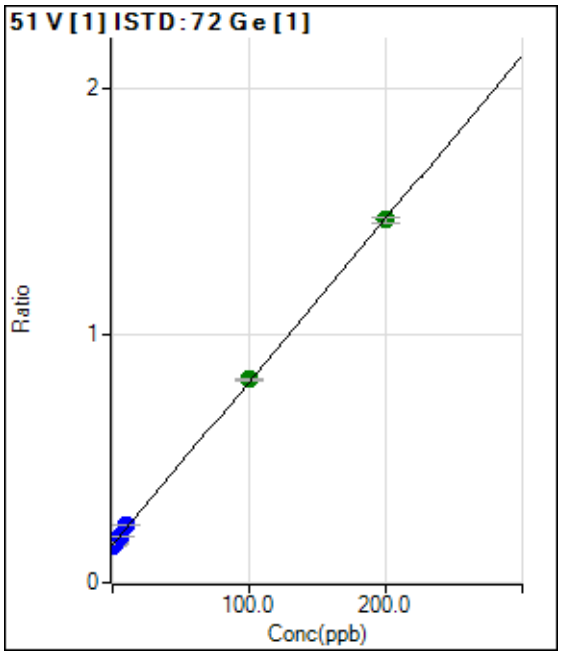
R = 1.0000

DL = 0.2142

BEC = 0.06217

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.299	432609.38	0.1443	P	0.1
2	☐	2.000	0.860	483602.57	0.1585	P	1.1
3	☐	5.000	5.047	589371.85	0.1861	P	2.0
4	☐	10.000	11.769	718940.12	0.2304	P	0.2
5	☐	100.000	101.403	2553230.52	0.8210	A	1.1
6	☐	200.000	199.220	4379637.00	1.4655	A	1.7
7	☐	1.000					

y = 0.0066 * x + 0.1528

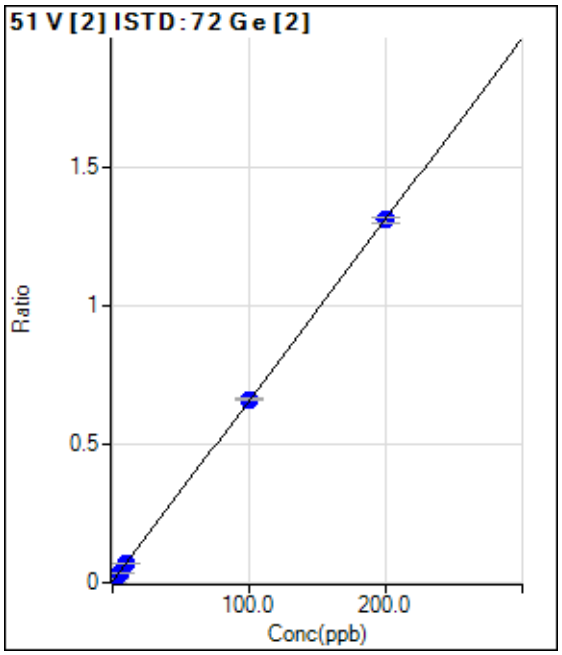
R = 0.9999

DL = 0.04313

BEC = 23.19

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.221	811.18	0.0020	P	6.3
2	☐	2.000	1.745	6085.79	0.0149	P	5.7
3	☐	5.000	4.931	14881.43	0.0358	P	2.1
4	☐	10.000	10.254	29478.24	0.0706	P	0.9
5	☐	100.000	100.597	270031.99	0.6620	P	0.6
6	☐	200.000	199.693	526549.29	1.3107	P	1.5
7	☐	1.000					

y = 0.0065 * x + 0.0035

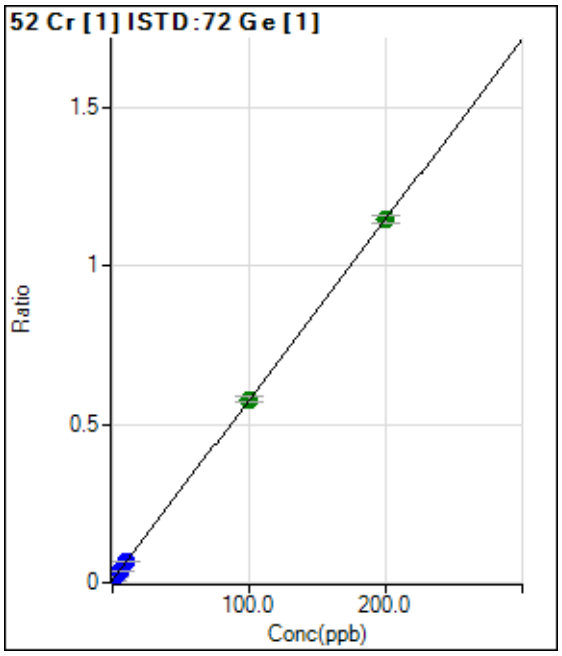
R = 1.0000

DL = 0.05891

BEC = 0.5312

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23333.34	0.0078	P	1.9
2	☐	2.000	2.048	59298.51	0.0194	P	0.9
3	☐	5.000	5.158	117617.68	0.0371	P	1.9
4	☐	10.000	10.549	211623.58	0.0678	P	0.9
5	☐	100.000	100.139	1795900.91	0.5776	A	3.3
6	☐	200.000	199.899	3422609.01	1.1453	A	2.0
7	☐	1.000					

y = 0.0057 * x + 0.0078

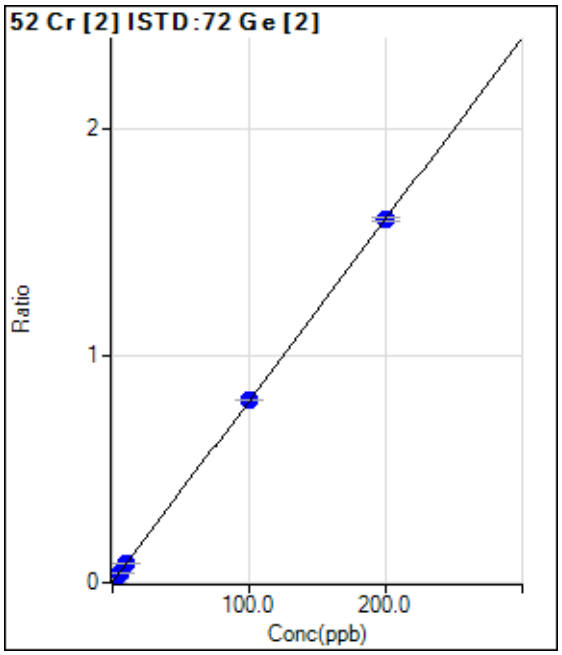
R = 1.0000

DL = 0.07997

BEC = 1.367

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	705.60	0.0018	P	3.2
2	☐	2.000	2.113	7634.26	0.0187	P	2.5
3	☐	5.000	5.277	18328.21	0.0440	P	1.5
4	☐	10.000	10.520	35918.58	0.0860	P	0.9
5	☐	100.000	100.641	329527.66	0.8078	P	0.2
6	☐	200.000	199.645	643095.10	1.6008	P	1.1
7	☐	1.000					

y = 0.0080 * x + 0.0018

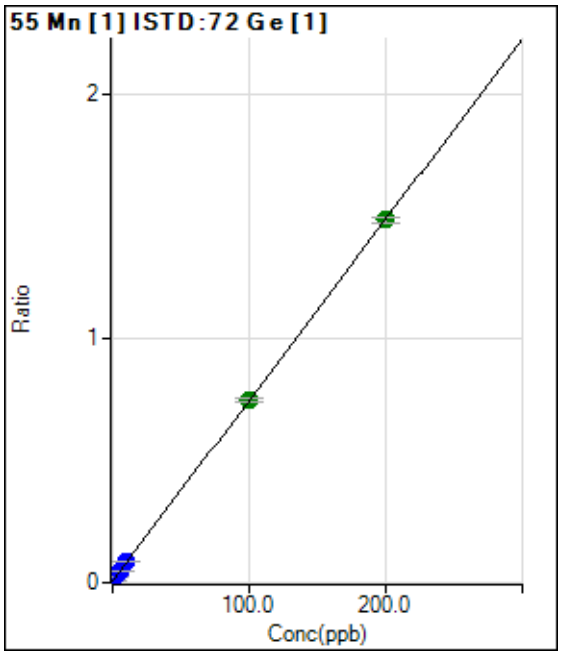
R = 1.0000

DL = 0.02103

BEC = 0.2208

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18918.90	0.0063	P	6.6
2	☐	2.000	2.093	66454.83	0.0218	P	3.5
3	☐	5.000	5.106	139564.08	0.0441	P	1.3
4	☐	10.000	10.582	263831.22	0.0845	P	0.3
5	☐	100.000	100.140	2321725.28	0.7466	A	2.3
6	☐	200.000	199.898	4435157.40	1.4841	A	1.8
7	☐	1.000					

y = 0.0074 * x + 0.0063

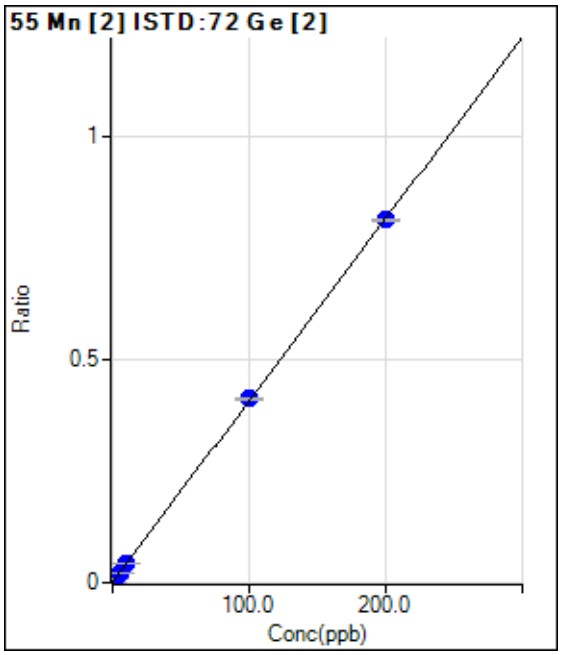
R = 1.0000

DL = 0.1696

BEC = 0.8531

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	286.68	0.0007	P	16.1
2	☐	2.000	2.136	3851.71	0.0094	P	1.5
3	☐	5.000	5.167	9066.11	0.0218	P	1.8
4	☐	10.000	10.802	18685.43	0.0448	P	1.0
5	☐	100.000	100.934	168149.60	0.4122	P	0.5
6	☐	200.000	199.487	327027.51	0.8140	P	0.4
7	☐	1.000					

y = 0.0041 * x + 7.1885E-004

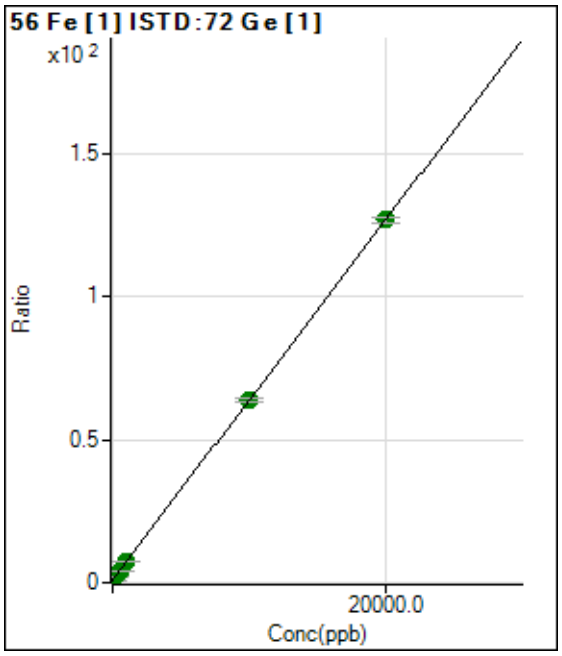
R = 1.0000

DL = 0.08536

BEC = 0.1763

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2735423.05	0.9121	A	1.5
2	☐	200.000	211.354	6847307.40	2.2440	A	1.8
3	☐	500.000	516.278	13194064.25	4.1656	A	2.1
4	☐	1000.000	1057.524	23644083.54	7.5765	A	0.9
5	☐	10000.00	9970.872	198232241.4	63.7480	A	2.3
6	☐	20000.00	20011.16	379602056.5	127.021	A	1.6
7	☐	100.000					

y = 0.0063 * x + 0.9121

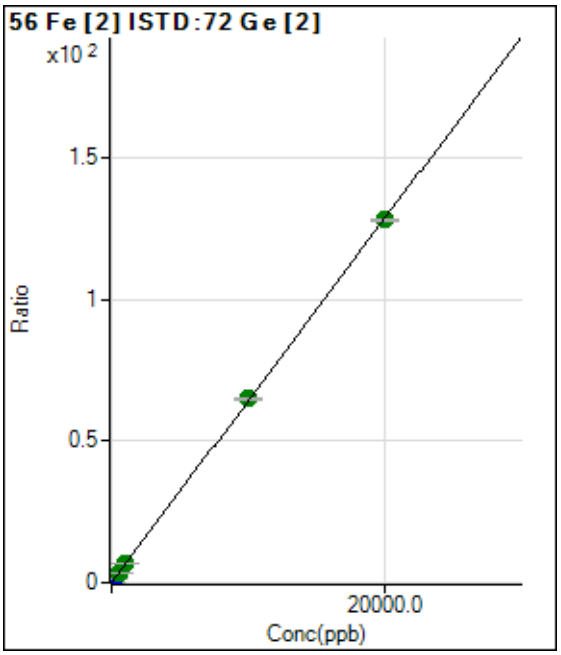
R = 1.0000

DL = 6.719

BEC = 144.7

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11483.24	0.0288	P	2.8
2	☐	200.000	205.384	550540.26	1.3477	P	0.7
3	☐	500.000	530.936	1430987.06	3.4383	A	0.6
4	☐	1000.000	1068.029	2875470.09	6.8874	A	1.1
5	☐	10000.00	10105.79	26483336.55	64.9256	A	0.3
6	☐	20000.00	19942.87	51460686.46	128.096	A	0.8
7	☐	100.000					

y = 0.0064 * x + 0.0288

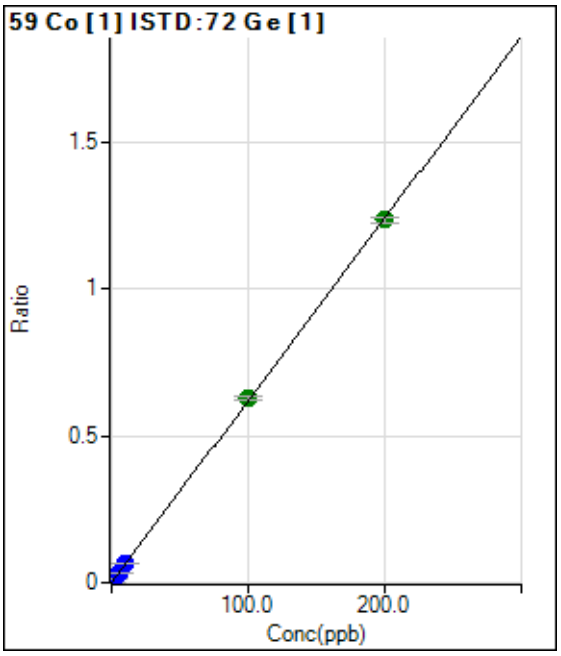
R = 1.0000

DL = 0.3782

BEC = 4.483

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	498.92	0.0002	P	24.1
2	☐	2.000	2.067	39587.85	0.0130	P	1.9
3	☐	5.000	5.193	102463.89	0.0323	P	1.1
4	☐	10.000	10.598	205445.65	0.0658	P	0.4
5	☐	100.000	101.302	1952463.25	0.6278	A	1.7
6	☐	200.000	199.314	3691324.77	1.2351	A	1.4
7	☐	1.000					

y = 0.0062 * x + 1.6622E-004

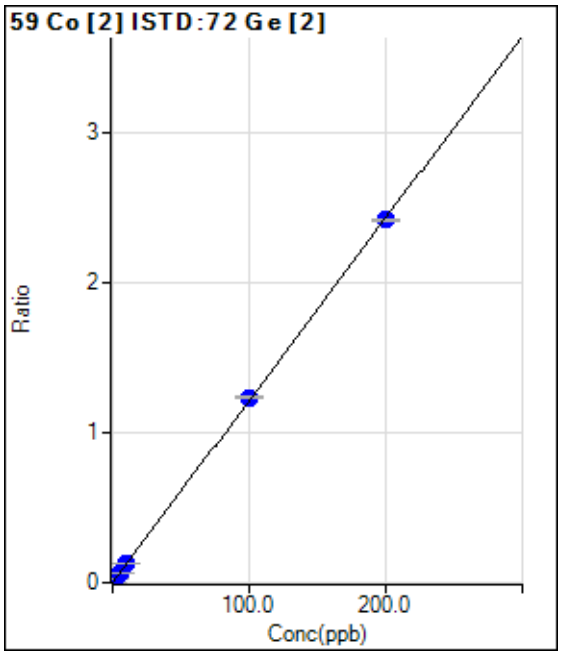
R = 1.0000

DL = 0.01938

BEC = 0.02683

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	66.67	0.0002	P	14.6
2	☐	2.000	2.131	10629.30	0.0260	P	2.4
3	☐	5.000	5.321	26931.96	0.0647	P	1.9
4	☐	10.000	10.723	54370.39	0.1302	P	1.1
5	☐	100.000	101.571	502622.46	1.2323	P	0.8
6	☐	200.000	199.169	970655.38	2.4161	P	0.5
7	☐	1.000					

y = 0.0121 * x + 1.6708E-004

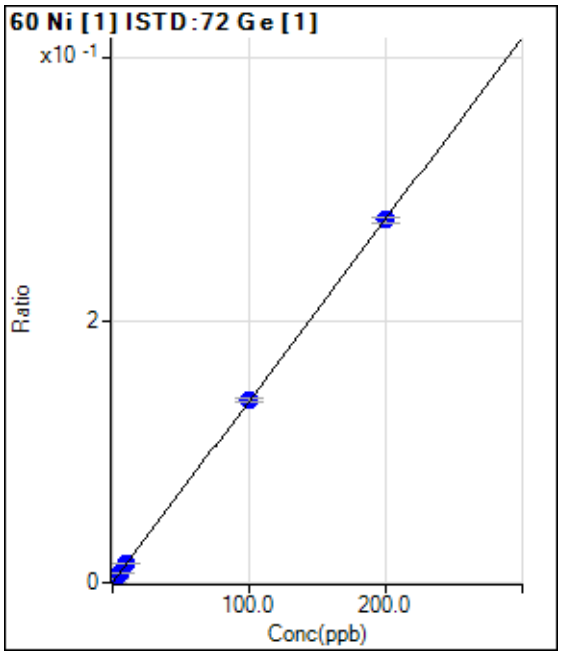
R = 1.0000

DL = 0.006049

BEC = 0.01377

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	206.68	0.0001	P	15.0
2	☐	2.000	2.144	9270.64	0.0030	P	1.5
3	☐	5.000	5.280	23375.73	0.0074	P	3.4
4	☐	10.000	10.890	47278.59	0.0152	P	1.3
5	☐	100.000	100.585	433367.23	0.1394	P	2.1
6	☐	200.000	199.655	826470.04	0.2766	P	1.9
7	☐	1.000					

y = 0.0014 * x + 6.8879E-005

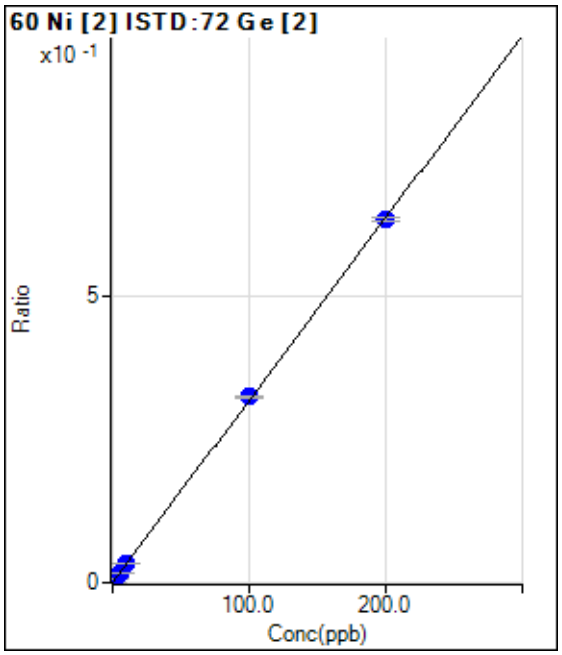
R = 1.0000

DL = 0.02233

BEC = 0.04974

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	71.12	0.0002	P	32.7
2	☐	2.000	2.087	2783.68	0.0068	P	2.9
3	☐	5.000	5.290	7073.98	0.0170	P	1.6
4	☐	10.000	10.654	14215.36	0.0340	P	1.7
5	☐	100.000	101.883	132189.72	0.3241	P	0.6
6	☐	200.000	199.018	254250.10	0.6329	P	1.0
7	☐	1.000					

y = 0.0032 * x + 1.7818E-004

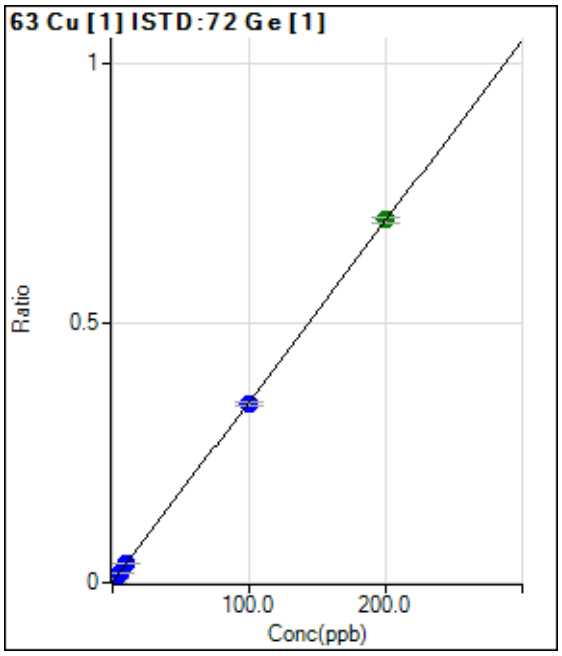
R = 0.9999

DL = 0.05504

BEC = 0.05605

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2718.13	0.0009	P	5.0
2	☐	2.000	2.020	24216.84	0.0079	P	1.1
3	☐	5.000	5.105	59153.22	0.0187	P	2.1
4	☐	10.000	10.437	116194.27	0.0372	P	1.6
5	☐	100.000	98.794	1072026.23	0.3448	P	2.4
6	☐	200.000	200.578	2088977.26	0.6990	A	1.9
7	☐	1.000					

y = 0.0035 * x + 9.0621E-004

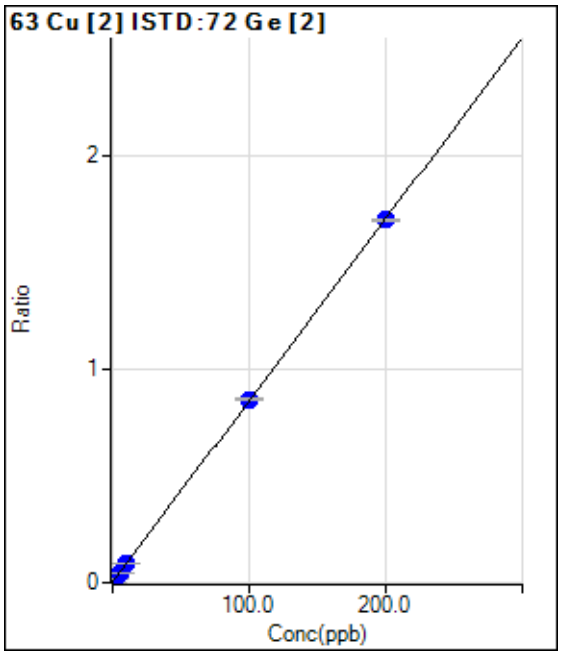
R = 1.0000

DL = 0.03935

BEC = 0.2604

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	834.50	0.0021	P	10.7
2	☐	2.000	1.974	7705.40	0.0189	P	1.3
3	☐	5.000	5.149	19073.62	0.0458	P	1.8
4	☐	10.000	10.518	38172.51	0.0914	P	1.8
5	☐	100.000	100.789	350073.11	0.8582	P	0.5
6	☐	200.000	199.576	681901.52	1.6973	P	0.4
7	☐	1.000					

y = 0.0085 * x + 0.0021

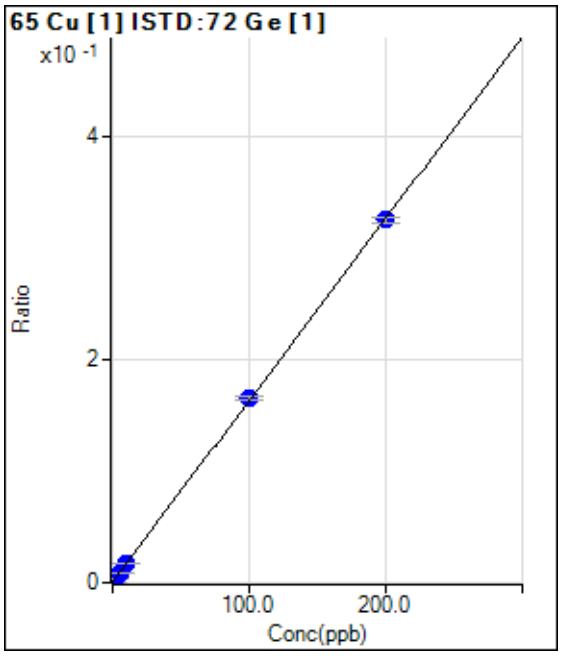
R = 1.0000

DL = 0.07904

BEC = 0.2464

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1436.80	0.0005	P	7.6
2	☐	2.000	2.025	11515.48	0.0038	P	3.1
3	☐	5.000	5.159	28098.49	0.0089	P	2.4
4	☐	10.000	10.697	55806.59	0.0179	P	1.1
5	☐	100.000	101.008	512493.00	0.1648	P	2.4
6	☐	200.000	199.457	971182.37	0.3250	P	1.8
7	☐	1.000					

y = 0.0016 * x + 4.7899E-004

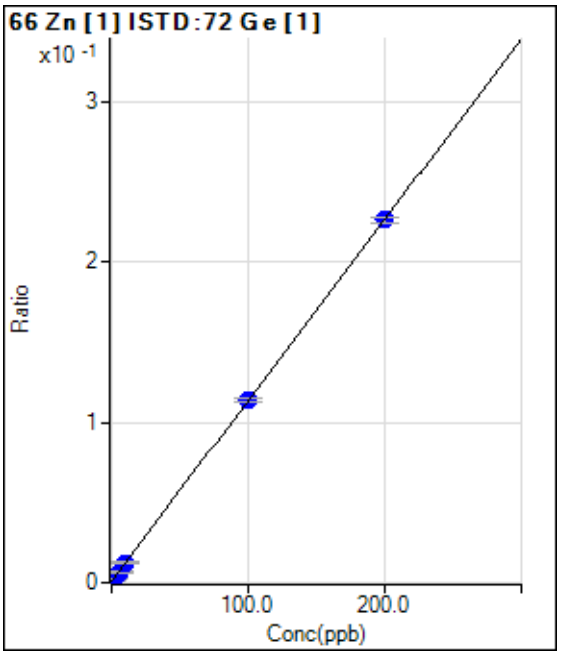
R = 1.0000

DL = 0.06757

BEC = 0.2944

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.217	1951.32	0.0007	P	12.9
2	☐	2.000	1.839	9050.58	0.0030	P	4.5
3	☐	5.000	5.021	20750.02	0.0066	P	3.3
4	☐	10.000	10.363	39232.89	0.0126	P	0.9
5	☐	100.000	100.022	353217.33	0.1136	P	2.6
6	☐	200.000	199.972	676043.75	0.2262	P	1.8
7	☐	1.000					

y = 0.0011 * x + 8.9477E-004

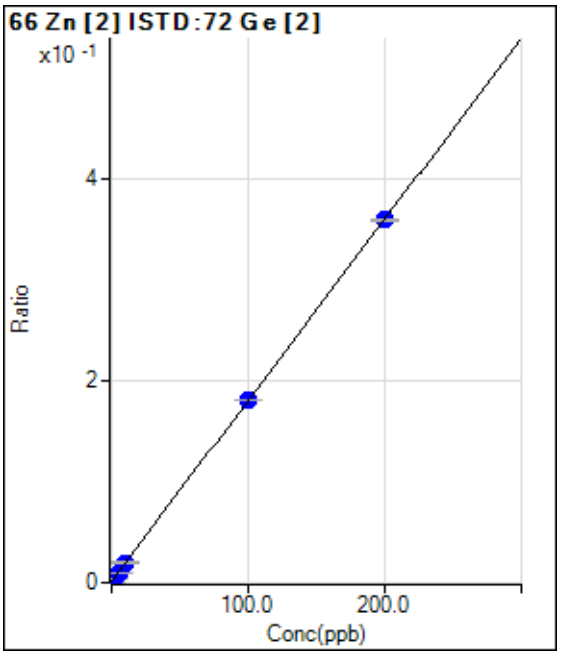
R = 1.0000

DL = 0.2226

BEC = 0.7941

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.302	333.35	0.0008	P	17.2
2	☐	2.000	1.855	1921.32	0.0047	P	7.5
3	☐	5.000	4.964	4279.61	0.0103	P	0.9
4	☐	10.000	10.255	8256.82	0.0198	P	2.8
5	☐	100.000	100.477	74088.19	0.1816	P	0.4
6	☐	200.000	199.751	144517.76	0.3597	P	0.8
7	☐	1.000					

y = 0.0018 * x + 0.0014

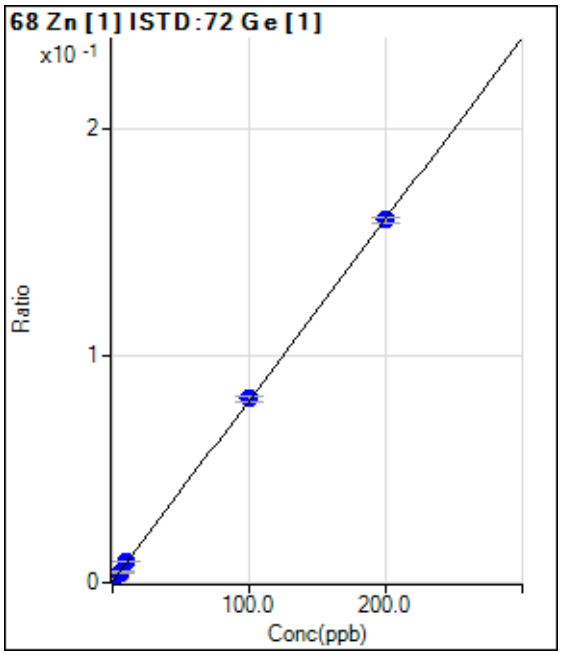
R = 1.0000

DL = 0.2409

BEC = 0.7678

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1537.91	0.0005	P	9.3
2	☐	2.000	2.031	6509.29	0.0021	P	6.0
3	☐	5.000	5.177	14711.35	0.0046	P	3.0
4	☐	10.000	10.598	27998.48	0.0090	P	0.9
5	☐	100.000	100.757	251637.60	0.0809	P	2.9
6	☐	200.000	199.587	477587.80	0.1598	P	1.8
7	☐	1.000					

y = 7.9814E-004 * x + 5.1265E-004

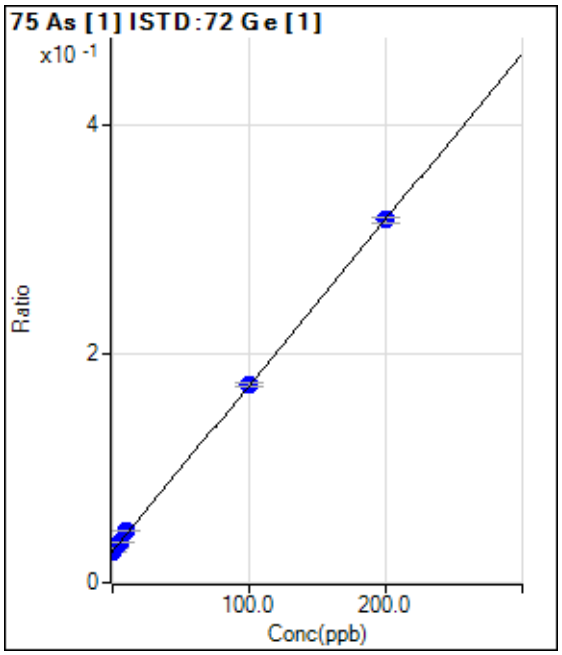
R = 1.0000

DL = 0.1796

BEC = 0.6423

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	82111.43	0.0274	P	0.8
2	☐	2.000	1.862	91779.24	0.0301	P	1.5
3	☐	5.000	5.647	112641.64	0.0356	P	2.4
4	☐	10.000	12.025	139851.64	0.0448	P	1.0
5	☐	100.000	100.275	537117.07	0.1727	P	1.9
6	☐	200.000	199.747	947040.69	0.3169	P	1.9
7	☐	1.000					

y = 0.0014 * x + 0.0274

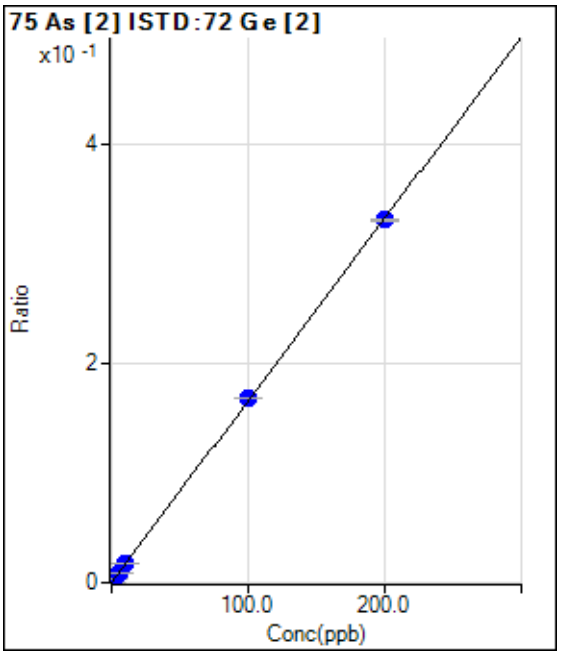
R = 1.0000

DL = 0.4305

BEC = 18.89

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38.15	0.0001	P	24.4
2	☐	2.000	2.082	1453.42	0.0036	P	0.3
3	☐	5.000	5.277	3692.31	0.0089	P	0.8
4	☐	10.000	10.460	7301.66	0.0175	P	1.9
5	☐	100.000	101.167	68666.02	0.1683	P	0.4
6	☐	200.000	199.386	133243.33	0.3317	P	0.7
7	☐	1.000					

y = 0.0017 * x + 9.5674E-005

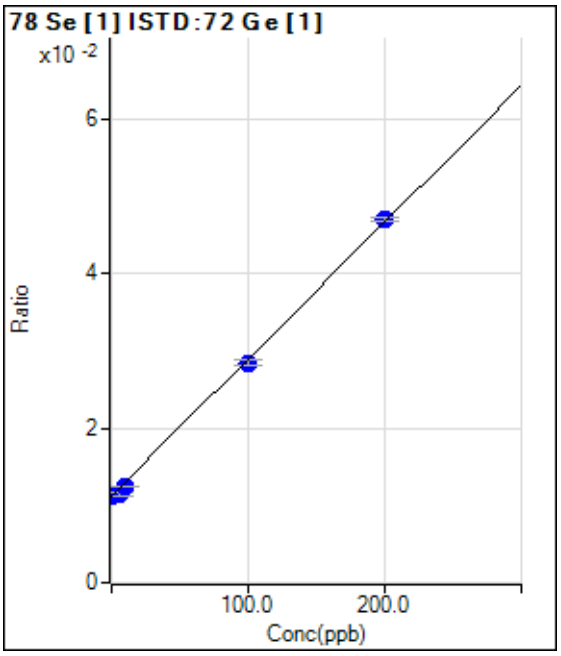
R = 1.0000

DL = 0.04213

BEC = 0.05753

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	33790.32	0.0113	P	0.4
2	☐	2.000	1.104	34979.36	0.0115	P	0.7
3	☐	5.000	1.098	36301.33	0.0115	P	2.6
4	☐	10.000	6.798	38917.51	0.0125	P	0.4
5	☐	100.000	97.283	88566.46	0.0285	P	2.3
6	☐	200.000	201.625	140306.37	0.0469	P	1.2
7	☐	1.000					

y = 1.7696E-004 * x + 0.0113

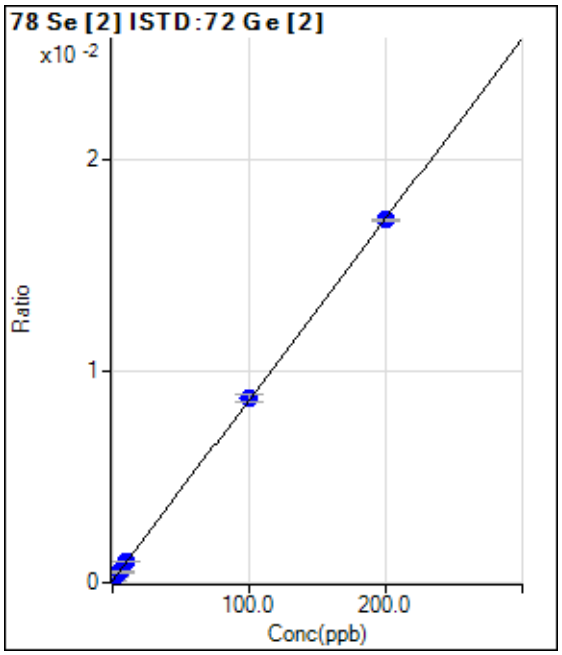
R = 0.9998

DL = 0.6875

BEC = 63.67

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38.52	0.0001	P	7.2
2	☐	2.000	1.790	101.86	0.0002	P	14.0
3	☐	5.000	4.872	213.34	0.0005	P	10.8
4	☐	10.000	10.548	416.31	0.0010	P	5.4
5	☐	100.000	100.822	3551.17	0.0087	P	4.2
6	☐	200.000	199.567	6882.60	0.0171	P	0.8
7	☐	1.000					

y = 8.5364E-005 * x + 9.6564E-005

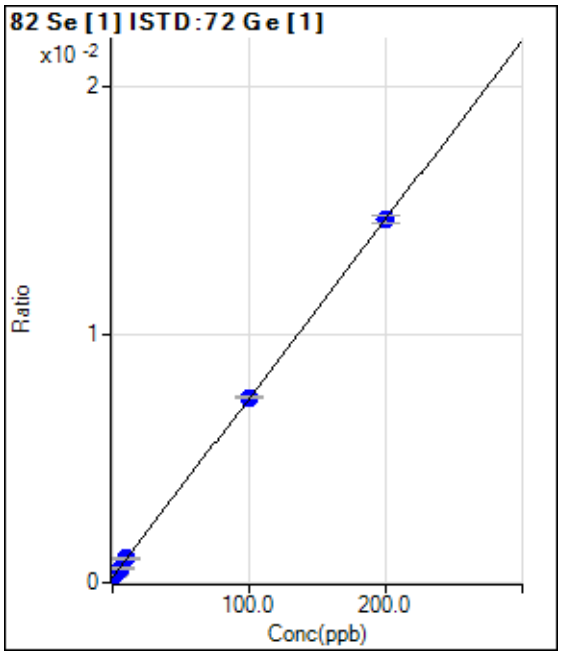
R = 1.0000

DL = 0.2433

BEC = 1.131

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	655.95	0.0002	P	4.6
2	☐	2.000	1.796	1063.38	0.0003	P	5.1
3	☐	5.000	4.983	1832.35	0.0006	P	5.2
4	☐	10.000	10.568	3065.51	0.0010	P	3.6
5	☐	100.000	100.559	23275.42	0.0075	P	1.8
6	☐	200.000	199.694	43773.25	0.0146	P	2.1
7	☐	1.000					

y = 7.2255E-005 * x + 2.1875E-004

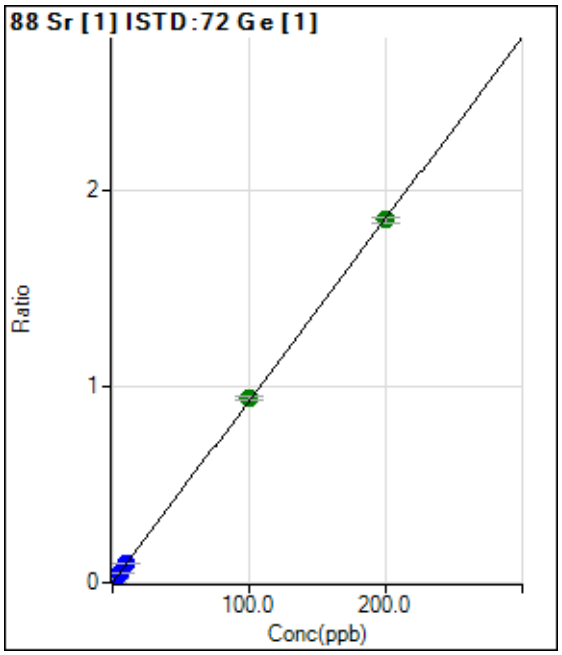
R = 1.0000

DL = 0.4197

BEC = 3.027

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2594.79	0.0009	P	36.0
2	☐	2.000	2.062	60991.87	0.0200	P	3.5
3	☐	5.000	5.039	150779.51	0.0476	P	2.4
4	☐	10.000	10.362	302650.09	0.0970	P	0.6
5	☐	100.000	101.088	2918290.90	0.9385	A	2.4
6	☐	200.000	199.436	5531055.89	1.8507	A	1.4
7	☐	1.000					

y = 0.0093 * x + 8.6412E-004

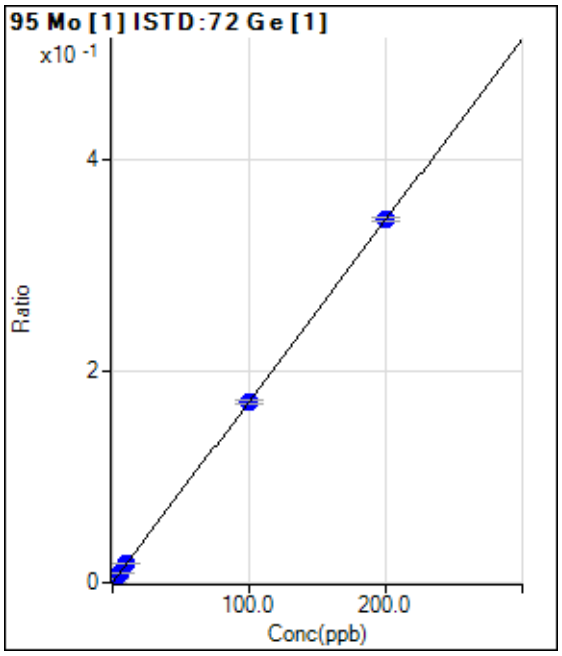
R = 1.0000

DL = 0.1005

BEC = 0.09316

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	263.35	0.0001	P	27.4
2	☐	2.000	2.029	10857.33	0.0036	P	2.6
3	☐	5.000	5.072	27751.71	0.0088	P	4.4
4	☐	10.000	10.375	55665.08	0.0178	P	1.1
5	☐	100.000	99.741	530840.53	0.1707	P	2.3
6	☐	200.000	200.109	1023371.39	0.3424	P	1.0
7	☐	1.000					

y = 0.0017 * x + 8.7734E-005

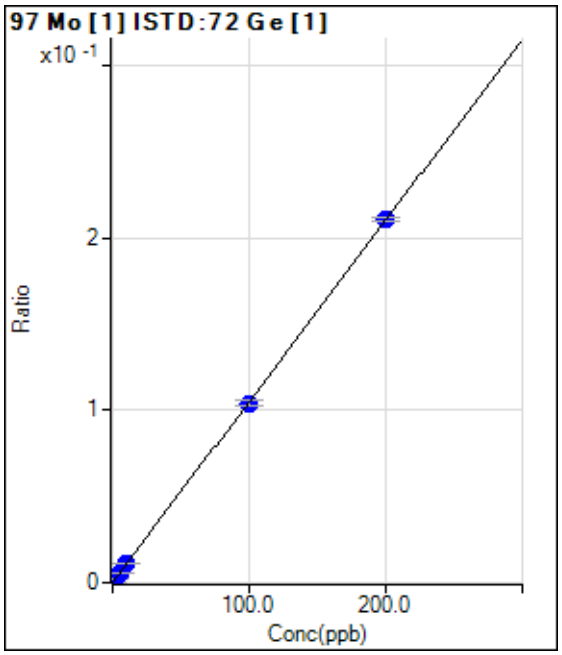
R = 1.0000

DL = 0.0422

BEC = 0.05129

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	236.68	0.0001	P	25.0
2	☐	2.000	2.043	6792.80	0.0022	P	4.1
3	☐	5.000	5.026	16978.20	0.0054	P	5.5
4	☐	10.000	10.337	34157.28	0.0109	P	2.9
5	☐	100.000	99.199	324539.36	0.1044	P	3.0
6	☐	200.000	200.383	629910.14	0.2108	P	1.0
7	☐	1.000					

y = 0.0011 * x + 7.8850E-005

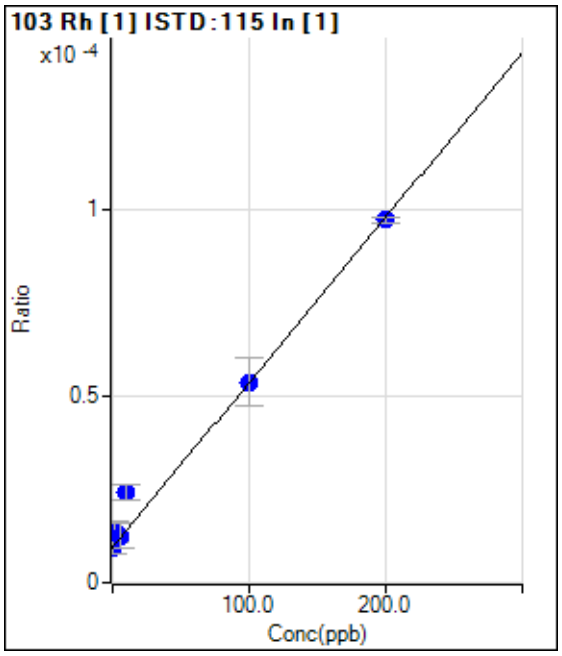
R = 1.0000

DL = 0.05631

BEC = 0.07499

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	28.89	0.0000	P	39.9
2	☐	2.000	9.746	42.22	0.0000	P	39.8
3	☐	5.000	7.044	40.00	0.0000	P	52.5
4	☐	10.000	33.394	76.67	0.0000	P	18.0
5	☐	100.000	100.292	168.90	0.0001	P	24.4
6	☐	200.000	198.556	290.02	0.0001	P	1.3
7	☐	1.000					

y = 4.4224E-007 * x + 9.4829E-006

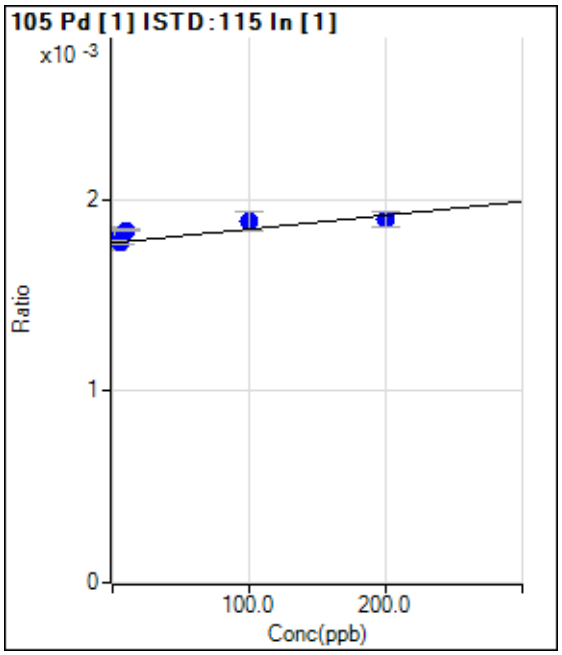
R = 0.9941

DL = 25.65

BEC = 21.44

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5393.35	0.0018	P	4.0
2	☐	2.000	47.981	5553.42	0.0018	P	5.9
3	☐	5.000	0.539	5653.44	0.0018	P	1.4
4	☐	10.000	93.844	5827.98	0.0018	P	1.0
5	☐	100.000	158.492	5922.43	0.0019	P	5.0
6	☐	200.000	166.213	5649.02	0.0019	P	4.3
7	☐	1.000					

y = 7.2172E-007 * x + 0.0018

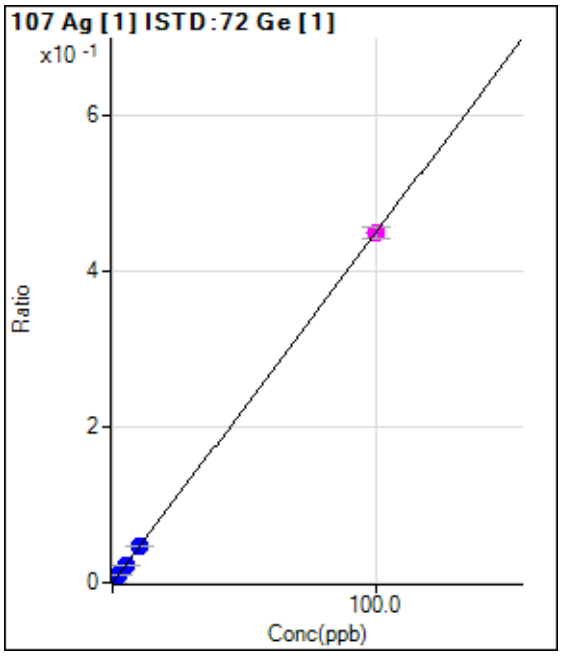
R = 0.8401

DL = 297.5

BEC = 2459

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	170.01	0.0001	P	32.9
2	☐	2.000	2.068	28565.69	0.0094	P	1.2
3	☐	5.000	4.995	71312.54	0.0225	P	4.8
4	☐	10.000	10.417	146388.65	0.0469	P	2.0
5	☐	100.000	99.957	1398187.39	0.4497	M	3.2
6	☐			2704301.52	0.9048	A	0.5
7	☐	1.000					

y = 0.0045 * x + 5.6621E-005

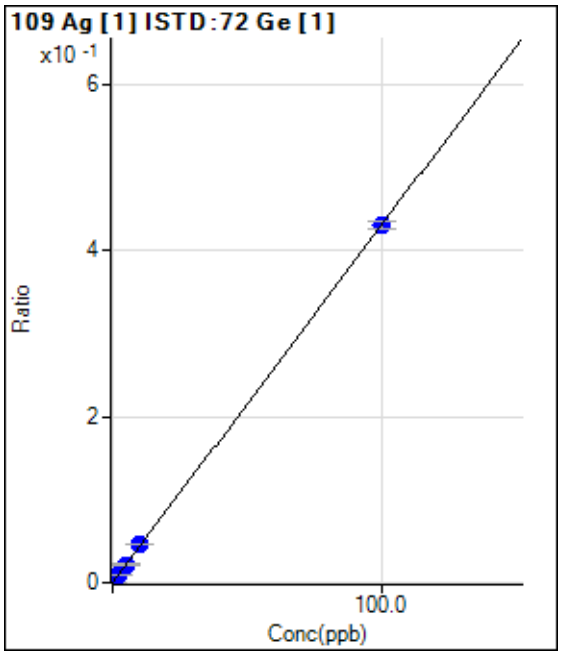
R = 1.0000

DL = 0.01244

BEC = 0.01259

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	164.45	0.0001	P	10.2
2	☐	2.000	2.057	27210.04	0.0089	P	2.0
3	☐	5.000	5.070	69344.11	0.0219	P	3.7
4	☐	10.000	10.539	141858.44	0.0455	P	1.4
5	☐	100.000	99.941	1339072.99	0.4306	P	2.1
6	☐			2637582.44	0.8825	A	1.2
7	☐	1.000					

y = 0.0043 * x + 5.4846E-005

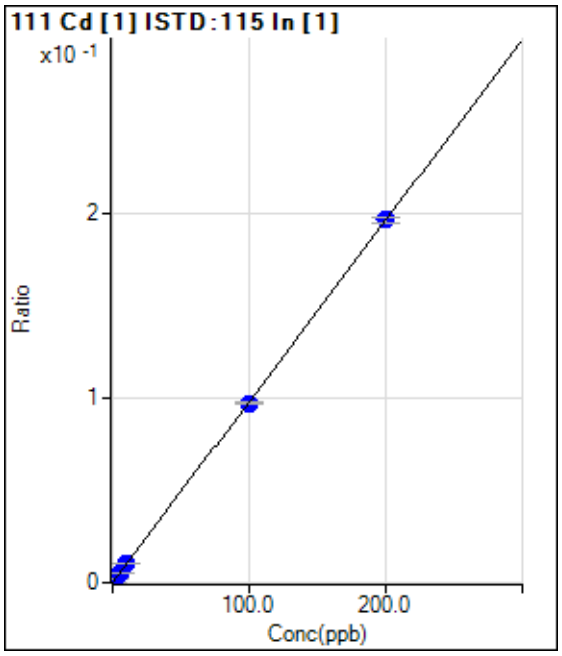
R = 1.0000

DL = 0.003904

BEC = 0.01273

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26.67	0.0000	P	57.9
2	☐	2.000	2.055	6214.78	0.0020	P	0.8
3	☐	5.000	4.970	15551.35	0.0049	P	1.0
4	☐	10.000	10.404	32300.48	0.0102	P	0.9
5	☐	100.000	99.169	304840.28	0.0972	P	1.4
6	☐	200.000	200.395	585679.68	0.1965	P	1.5
7	☐	1.000					

y = 9.8055E-004 * x + 8.7975E-006

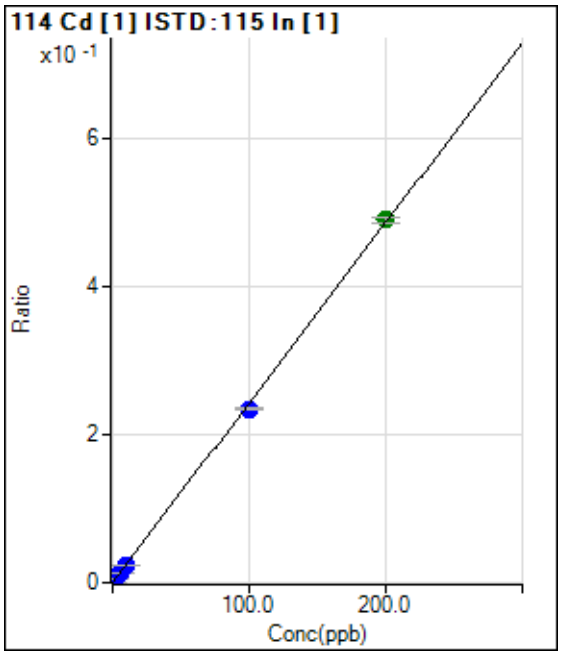
R = 1.0000

DL = 0.01558

BEC = 0.008972

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	83.34	0.0000	P	13.7
2	☐	2.000	1.988	14934.00	0.0049	P	2.8
3	☐	5.000	4.882	37889.16	0.0119	P	2.0
4	☐	10.000	10.059	77449.68	0.0245	P	1.4
5	☐	100.000	96.560	735909.77	0.2348	P	1.4
6	☐	200.000	201.720	1461686.35	0.4904	A	1.7
7	☐	1.000					

y = 0.0024 * x + 2.7401E-005

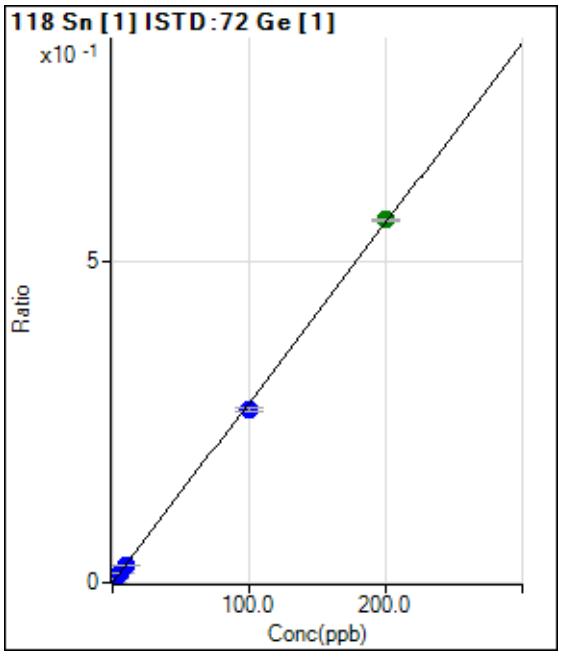
R = 0.9998

DL = 0.004646

BEC = 0.01127

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1121.21	0.0004	P	5.2
2	☐	2.000	1.933	17607.98	0.0058	P	3.9
3	☐	5.000	4.766	43326.17	0.0137	P	2.3
4	☐	10.000	9.924	87627.16	0.0281	P	1.4
5	☐	100.000	96.564	839465.84	0.2700	P	2.3
6	☐	200.000	201.728	1684388.38	0.5636	A	0.8
7	☐	1.000					

y = 0.0028 * x + 3.7381E-004

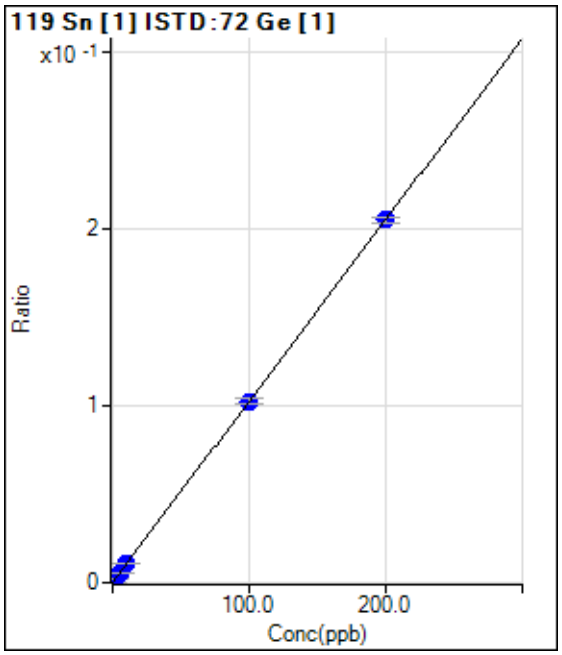
R = 0.9998

DL = 0.02071

BEC = 0.1339

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	386.69	0.0001	P	6.6
2	☐	2.000	1.957	6506.02	0.0021	P	1.4
3	☐	5.000	5.035	16727.00	0.0053	P	3.8
4	☐	10.000	10.293	33273.71	0.0107	P	2.4
5	☐	100.000	99.864	318172.03	0.1023	P	3.0
6	☐	200.000	200.053	612242.22	0.2049	P	1.7
7	☐	1.000					

y = 0.0010 * x + 1.2895E-004

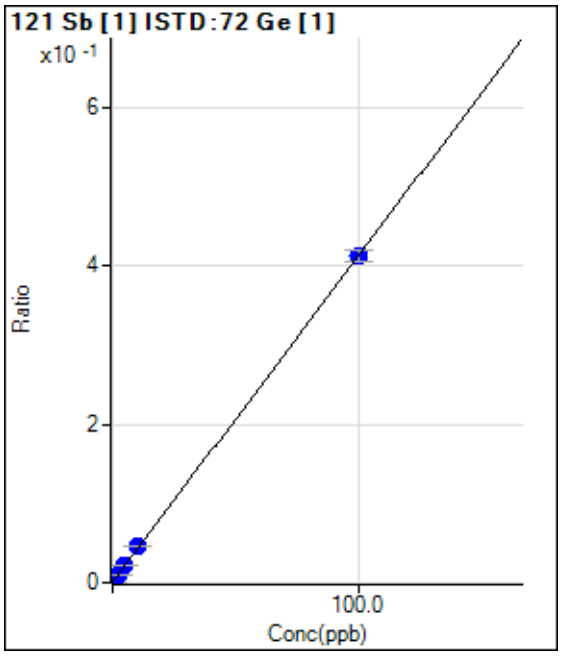
R = 1.0000

DL = 0.02503

BEC = 0.126

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1856.06	0.0006	P	4.2
2	☐	2.000	2.131	28777.54	0.0094	P	1.4
3	☐	5.000	5.279	71111.01	0.0225	P	3.1
4	☐	10.000	10.949	143249.05	0.0459	P	1.3
5	☐	100.000	99.889	1286392.77	0.4138	P	3.6
6	☐			2623867.28	0.8779	A	1.2
7	☐	1.000					

y = 0.0041 * x + 6.1900E-004

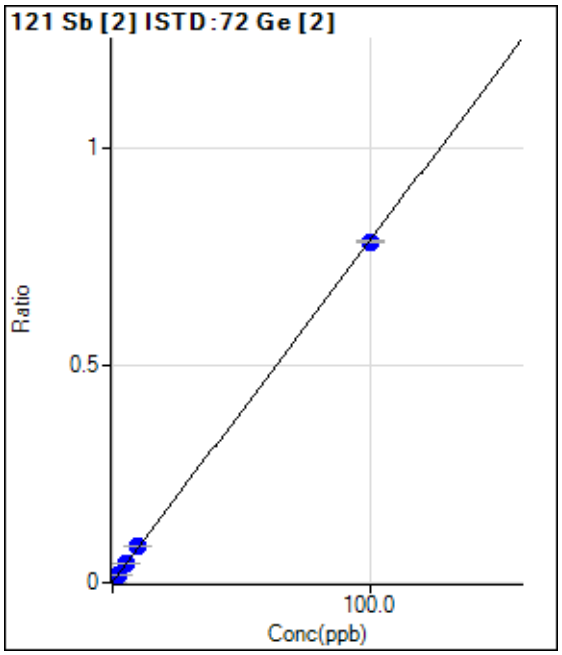
R = 1.0000

DL = 0.01894

BEC = 0.1497

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	478.90	0.0012	P	4.1
2	☐	2.000	2.085	7169.08	0.0176	P	4.1
3	☐	5.000	5.361	18000.03	0.0433	P	0.6
4	☐	10.000	10.683	35483.56	0.0850	P	1.1
5	☐	100.000	99.912	320142.49	0.7849	P	0.7
6	☐			634804.92	1.5801	P	0.2
7	☐	1.000					

y = 0.0078 * x + 0.0012

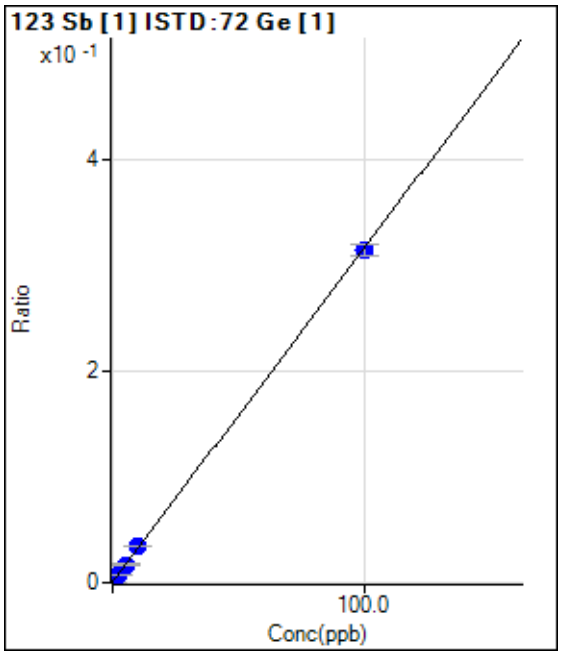
R = 1.0000

DL = 0.01871

BEC = 0.1531

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1378.23	0.0005	P	10.1
2	☐	2.000	2.151	22111.70	0.0072	P	0.6
3	☐	5.000	5.283	54237.80	0.0171	P	2.8
4	☐	10.000	10.978	109504.05	0.0351	P	1.6
5	☐	100.000	99.885	981109.65	0.3156	P	3.3
6	☐			2026554.71	0.6781	A	1.1
7	☐	1.000					

y = 0.0032 * x + 4.5971E-004

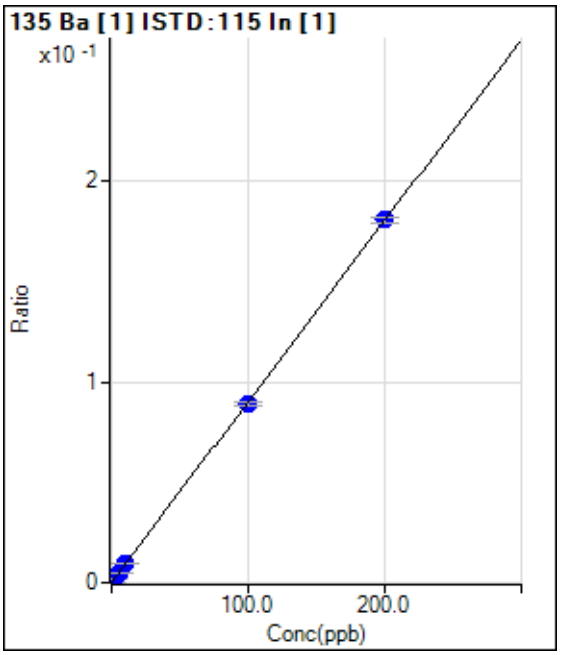
R = 1.0000

DL = 0.04409

BEC = 0.1457

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	213.35	0.0001	P	27.0
2	☐	2.000	2.023	5811.30	0.0019	P	4.7
3	☐	5.000	5.041	14688.42	0.0046	P	1.5
4	☐	10.000	10.171	29207.31	0.0092	P	1.8
5	☐	100.000	98.882	279430.89	0.0891	P	1.7
6	☐	200.000	200.549	538674.62	0.1807	P	1.3
7	☐	1.000					

y = 9.0085E-004 * x + 7.0096E-005

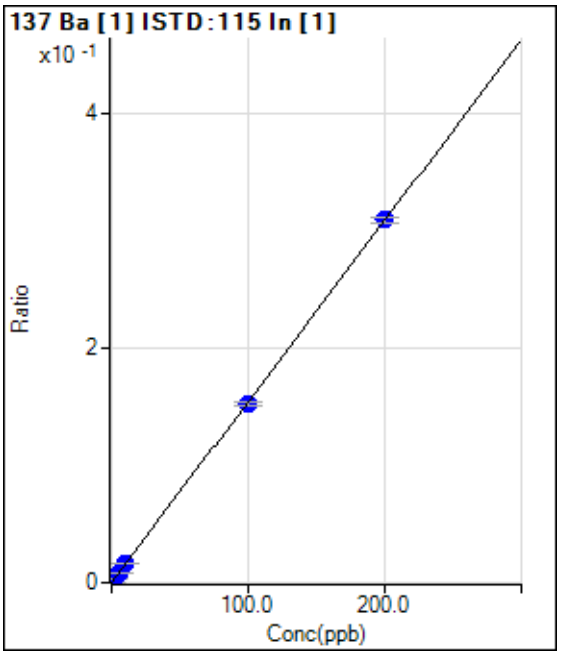
R = 1.0000

DL = 0.06292

BEC = 0.07781

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	327.80	0.0001	P	41.5
2	☐	2.000	2.019	9897.88	0.0032	P	1.5
3	☐	5.000	5.007	24940.17	0.0078	P	2.3
4	☐	10.000	10.312	50663.84	0.0160	P	0.1
5	☐	100.000	99.045	479161.67	0.1529	P	2.6
6	☐	200.000	200.462	921892.07	0.3093	P	1.4
7	☐	1.000					

y = 0.0015 * x + 1.0765E-004

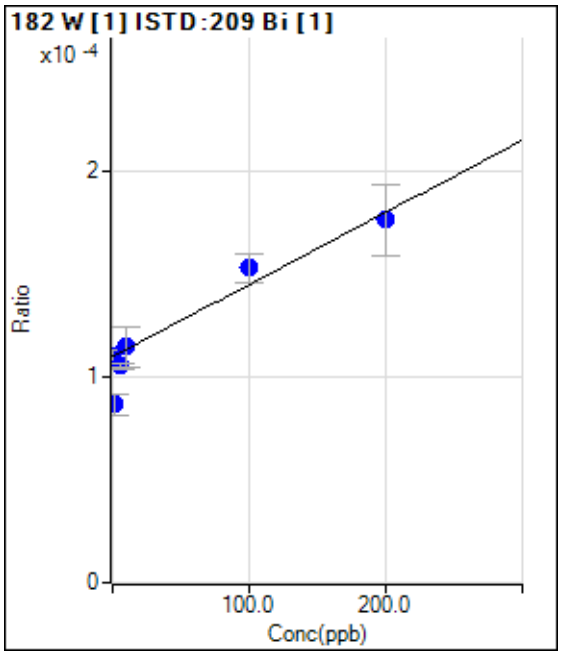
R = 1.0000

DL = 0.0869

BEC = 0.06979

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	308.91	0.0001	P	6.7
2	☐	2.000	-66.507	248.90	0.0001	P	12.4
3	☐	5.000	-12.537	312.24	0.0001	P	2.7
4	☐	10.000	13.419	338.91	0.0001	P	16.9
5	☐	100.000	123.024	447.81	0.0002	P	9.0
6	☐	200.000	189.441	495.59	0.0002	P	19.5
7	☐	1.000					

y = 3.5112E-007 * x + 1.0992E-004

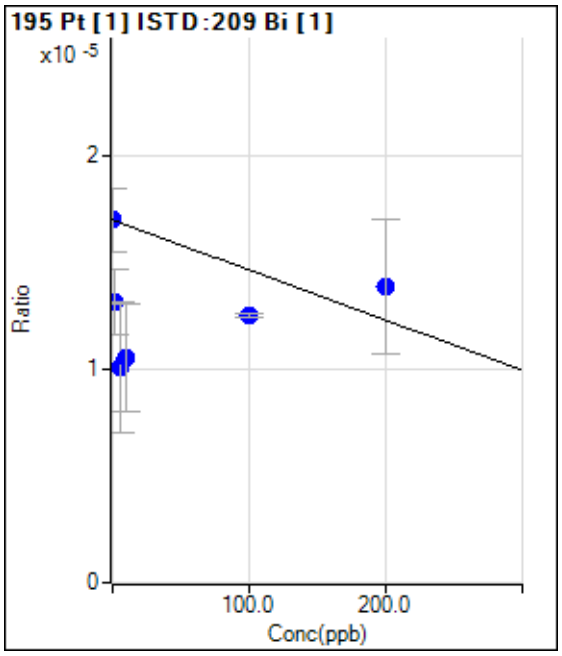
R = 0.9503

DL = 62.62

BEC = 313.1

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	47.78	0.0000	P	17.2
2	☐	2.000	163.727	37.78	0.0000	P	23.7
3	☐	5.000	295.024	30.00	0.0000	P	60.4
4	☐	10.000	276.307	31.11	0.0000	P	47.8
5	☐	100.000	190.388	36.67	0.0000	P	1.5
6	☐	200.000	132.623	38.89	0.0000	P	45.3
7	☐	1.000					

y = -2.3485E-008 * x + 1.7005E-005

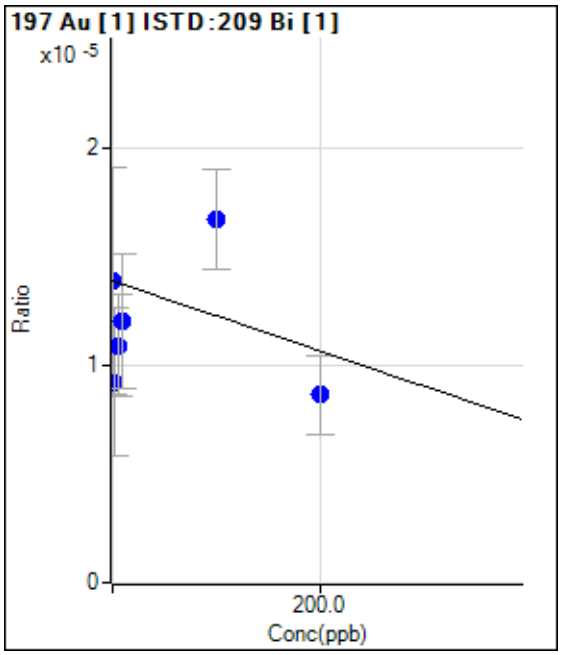
R = 0.1318

DL = -374.3

BEC = -724.1

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38.89	0.0000	P	74.9
2	☐	2.000	288.941	26.67	0.0000	P	73.8
3	☐	5.000	183.924	32.22	0.0000	P	42.5
4	☐	10.000	114.978	35.56	0.0000	P	51.8
5	☐	100.000	-172.602	48.89	0.0000	P	27.5
6	☐	200.000	323.710	24.45	0.0000	P	42.4
7	☐	1.000					

y = −1.6225E−008 * x + 1.3907E−005

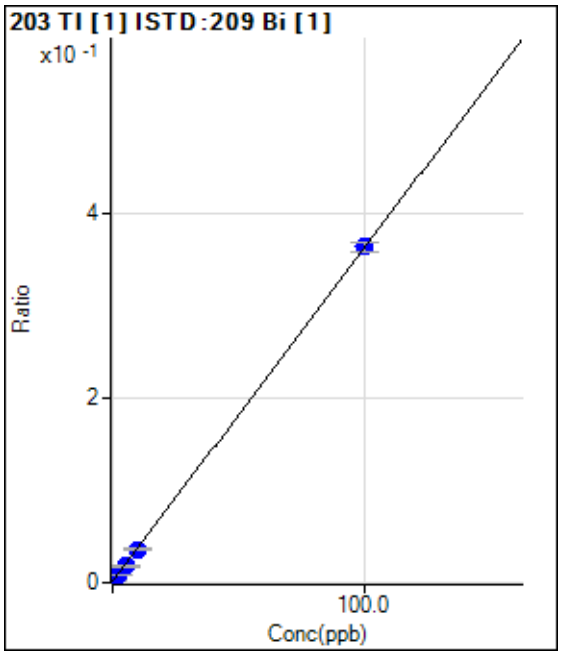
R = −0.1454

DL = −1926

BEC = −857.2

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3627.89	0.0013	P	6.3
2	☐	2.000	1.765	22117.11	0.0077	P	3.3
3	☐	5.000	4.625	53373.74	0.0181	P	4.6
4	☐	10.000	9.677	107423.31	0.0364	P	2.8
5	☐	100.000	100.056	1064443.14	0.3638	P	2.6
6	☐			2153128.09	0.7653	A	0.4
7	☐	1.000					

y = 0.0036 * x + 0.0013

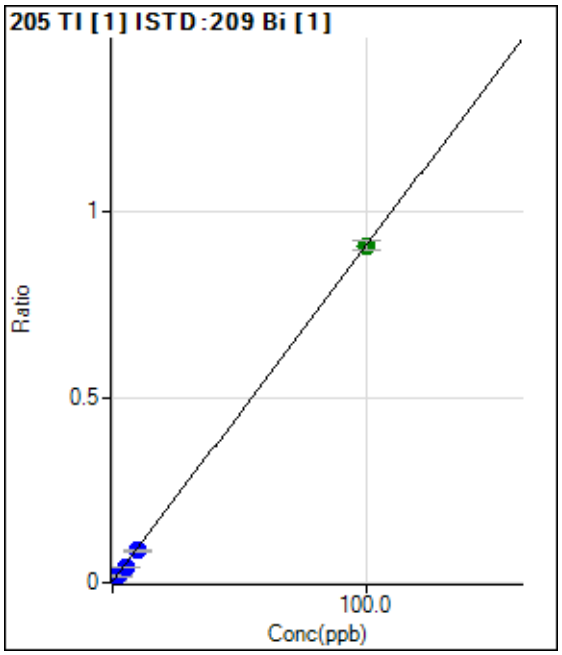
R = 1.0000

DL = 0.06717

BEC = 0.3565

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8438.00	0.0030	P	8.5
2	☐	2.000	1.693	52745.76	0.0183	P	3.9
3	☐	5.000	4.368	125789.73	0.0425	P	4.5
4	☐	10.000	9.208	255117.34	0.0863	P	3.0
5	☐	100.000	100.117	2659847.33	0.9092	A	2.8
6	☐			5030106.00	1.7879	A	0.3
7	☐	1.000					

y = 0.0091 * x + 0.0030

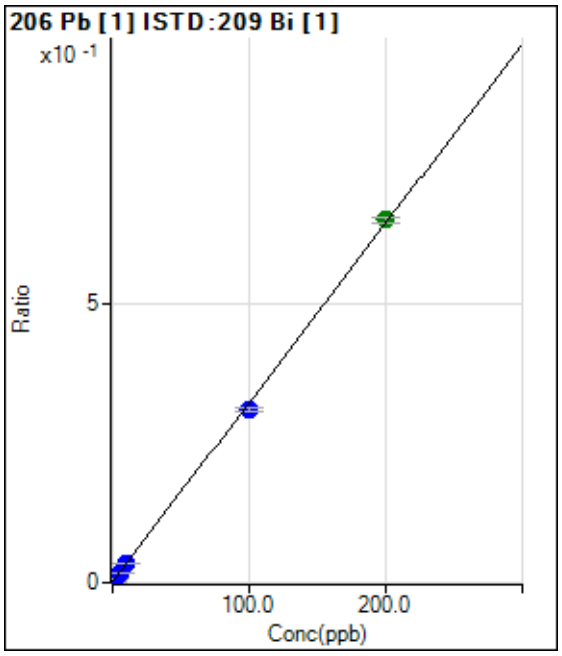
R = 1.0000

DL = 0.08498

BEC = 0.332

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4908.81	0.0017	P	14.6
2	☐	2.000	1.997	23472.29	0.0082	P	3.6
3	☐	5.000	4.951	52180.94	0.0176	P	1.4
4	☐	10.000	9.937	99420.04	0.0336	P	1.9
5	☐	100.000	95.939	906127.15	0.3097	P	1.8
6	☐	200.000	202.035	1829183.17	0.6503	A	1.6
7	☐	1.000					

y = 0.0032 * x + 0.0017

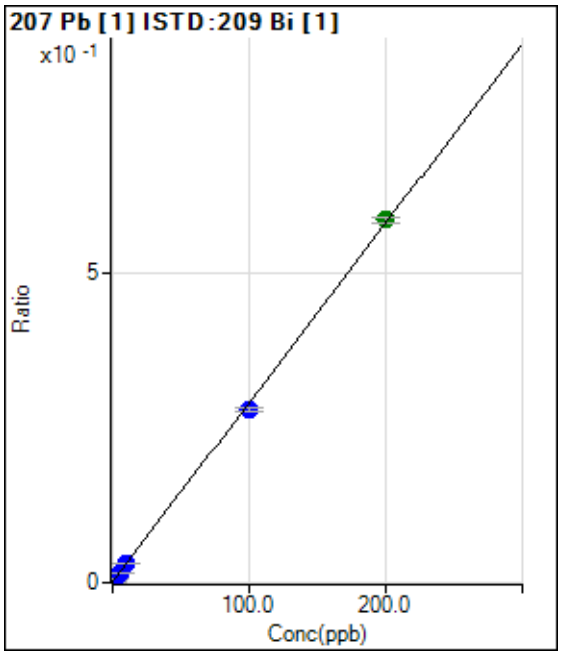
R = 0.9997

DL = 0.2385

BEC = 0.544

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4193.01	0.0015	P	20.0
2	☐	2.000	1.993	20928.45	0.0073	P	4.6
3	☐	5.000	4.825	45811.71	0.0155	P	1.4
4	☐	10.000	9.858	88899.10	0.0301	P	1.0
5	☐	100.000	96.071	819628.22	0.2802	P	2.2
6	☐	200.000	201.976	1652354.09	0.5873	A	1.3
7	☐	1.000					

y = 0.0029 * x + 0.0015

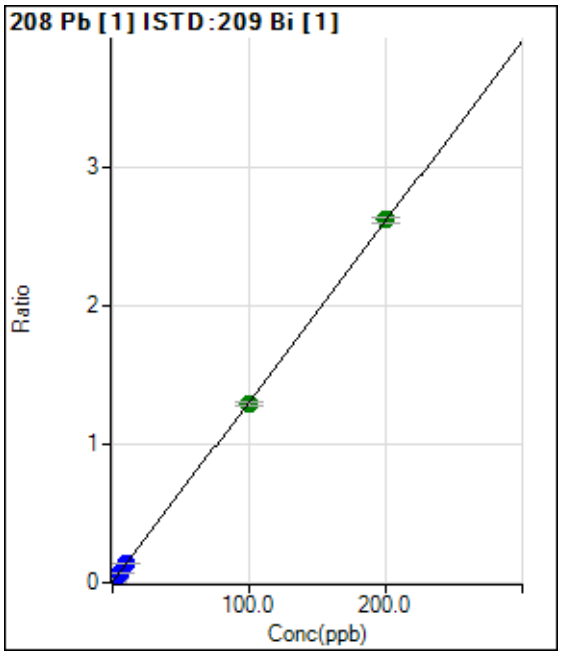
R = 0.9997

DL = 0.3089

BEC = 0.5142

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	19212.38	0.0068	P	18.0
2	☐	2.000	1.995	94298.57	0.0328	P	3.7
3	☐	5.000	4.894	208388.35	0.0704	P	1.2
4	☐	10.000	9.883	399773.92	0.1353	P	1.1
5	☐	100.000	98.627	3770554.82	1.2887	A	1.7
6	☐	200.000	200.695	7357377.20	2.6154	A	1.2
7	☐	1.000					

y = 0.0130 * x + 0.0068

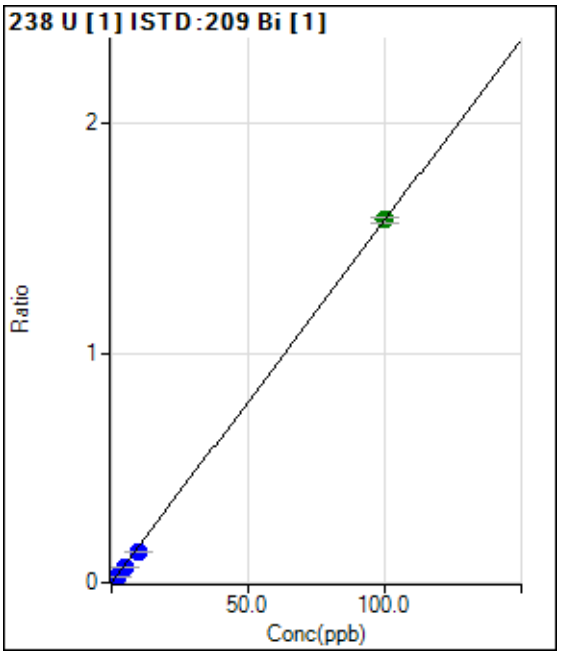
R = 1.0000

DL = 0.284

BEC = 0.5259

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	202.23	0.0001	P	34.7
2	☐	2.000	1.690	76889.57	0.0267	P	0.8
3	☐	5.000	4.209	196503.23	0.0664	P	3.0
4	☐	10.000	8.670	404160.25	0.1368	P	0.4
5	☐	100.000	100.179	4621819.48	1.5797	A	1.7
6	☐			8957578.48	3.1841	A	0.8
7	☐	1.000					

y = 0.0158 * x + 7.1901E-005

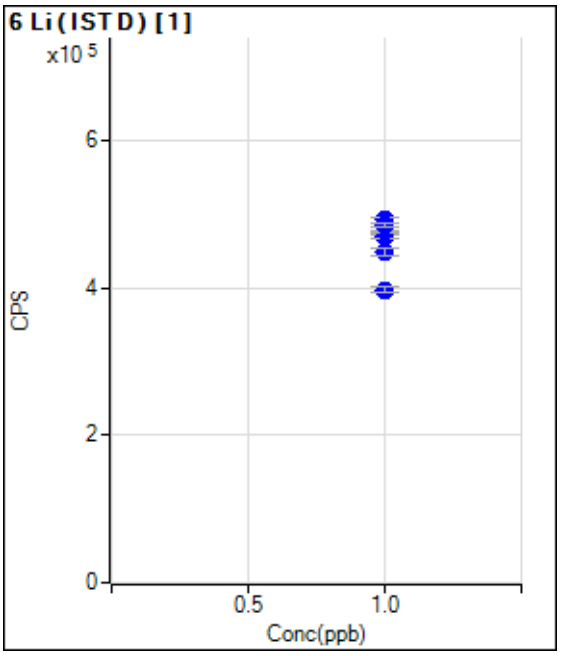
R = 0.9999

DL = 0.004746

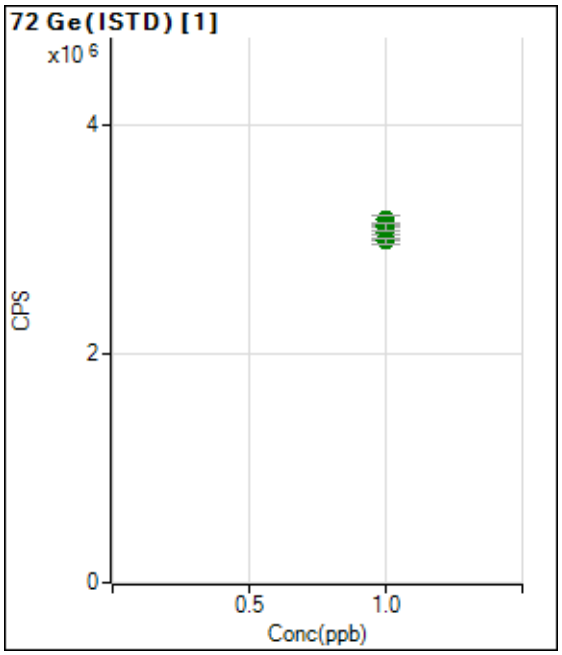
BEC = 0.00456

Weight: None

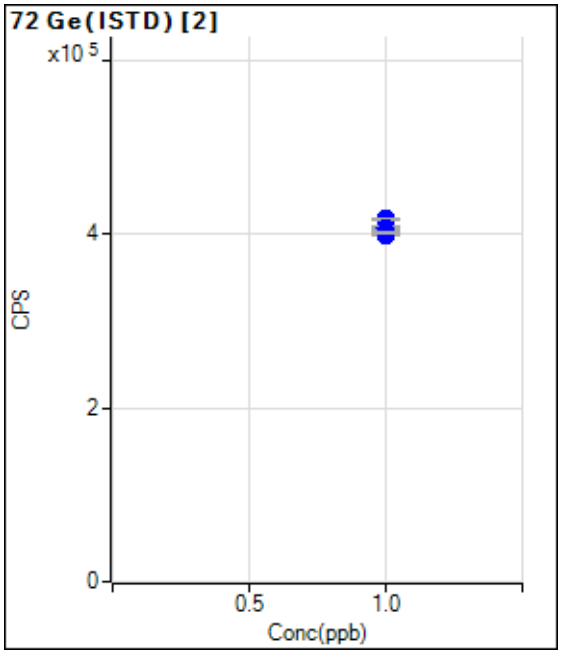
Min Conc: <None>



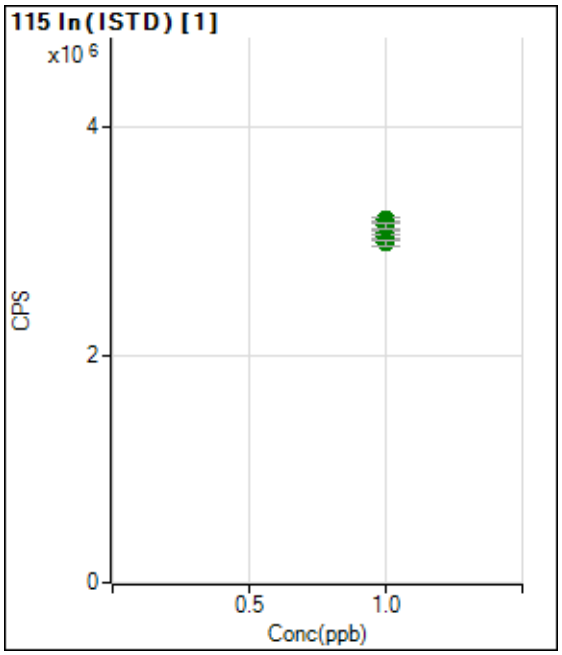
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		470219.23		P	0.9
2	☐	1.000		476956.91		P	0.7
3	☐	1.000		492476.76		P	1.7
4	☐	1.000		486049.80		P	1.1
5	☐	1.000		449153.25		P	2.1
6	☐	1.000		397496.86		P	1.6
7	☐	1.000					



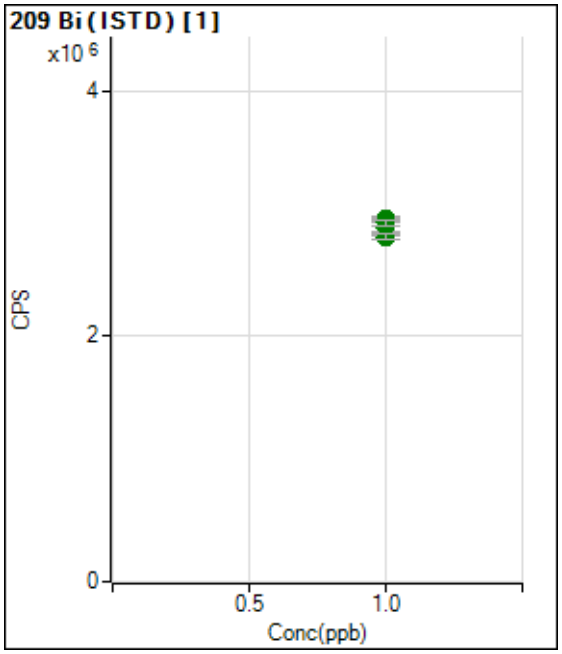
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2998920.25		A	0.6
2	☐	1.000		3051677.47		A	1.0
3	☐	1.000		3168405.43		A	2.4
4	☐	1.000		3120851.15		A	1.0
5	☐	1.000		3110458.05		A	2.0
6	☐	1.000		2989038.93		A	1.7
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		398893.55		P	0.4
2	☐	1.000		408508.90		P	0.6
3	☐	1.000		416181.25		P	0.4
4	☐	1.000		417495.85		P	0.5
5	☐	1.000		407911.63		P	1.1
6	☐	1.000		401744.09		P	0.6
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3039556.91		A	1.0
2	☐	1.000		3071502.88		A	1.3
3	☐	1.000		3185281.29		A	0.9
4	☐	1.000		3163722.30		A	0.7
5	☐	1.000		3134895.62		A	1.3
6	☐	1.000		2980864.85		A	1.5
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2809191.28		A	1.1
2	☐	1.000		2878126.11		A	1.6
3	☐	1.000		2958330.79		A	1.6
4	☐	1.000		2954981.87		A	0.5
5	☐	1.000		2926275.97		A	1.5
6	☐	1.000		2813458.01		A	1.8
7	☐	1.000					

Form 2 - Initial and Continuing Calibration Verification

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293605
Instrument: ICPMS04
Method: SW6020

ICV Date: 25-Apr-2017 12:59 Seq: 4067589 ICV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	99.344	99	90-110	
Copper	100	100.661	101	90-110	
Lead	100	92.548	93	90-110	
Zinc	100	99.717	100	90-110	

CCV1 Date: 25-Apr-2017 13:59 Seq: 4067693 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	99.929	100	90-110	
Copper	100	100.685	101	90-110	
Lead	100	96.42	96	90-110	
Zinc	100	98.787	99	90-110	

CCV2 Date: 25-Apr-2017 15:03 Seq: 4067902 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	100.13	100	90-110	
Copper	100	100.358	100	90-110	
Lead	100	90.627	91	90-110	
Zinc	100	100.055	100	90-110	

ICCV3 Date: 25-Apr-2017 15:50 Seq: 4068625 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	104.923	105	90-110	
Copper	100	103.327	103	90-110	
Lead	100	100.877	101	90-110	
Zinc	100	104.938	105	90-110	

CCV4 Date: 25-Apr-2017 16:55 Seq: 4068639 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	100.597	101	90-110	
Copper	100	99.272	99	90-110	
Lead	100	96.571	97	90-110	
Zinc	100	99.356	99	90-110	

CCV5 Date: 25-Apr-2017 17:40 Seq: 4068649 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	99.606	100	90-110	
Copper	100	99.681	100	90-110	
Lead	100	97.401	97	90-110	
Zinc	100	99.725	100	90-110	

CCV6 Date: 25-Apr-2017 18:26 Seq: 4068659 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	99.345	99	90-110	
Copper	100	100.238	100	90-110	
Lead	100	98.522	99	90-110	
Zinc	100	99.907	100	90-110	

CCV7 Date: 25-Apr-2017 19:05 Seq: 4068671 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	99.365	99	90-110	
Copper	100	99.87	100	90-110	
Lead	100	98.291	98	90-110	
Zinc	100	98.206	98	90-110	

CCV8 Date: 25-Apr-2017 19:54 Seq: 4068682 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Antimony	100	99.934	100	90-110	
Copper	100	96.289	96	90-110	

Form 2 - Initial and Continuing Calibration Verification

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293605
Instrument: ICPMS04
Method: SW6020

CCV8	Date: 25-Apr-2017 19:54		Seq: 4068682	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	109.821	110	90-110	
Zinc	100	95.803	96	90-110	

ICCV9	Date: 25-Apr-2017 20:45		Seq: 4068692	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	105.542	106	90-110	
Copper	100	104.608	105	90-110	
Lead	100	100.708	101	90-110	
Zinc	100	103.232	103	90-110	

CCV10	Date: 25-Apr-2017 21:04		Seq: 4068696	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	99.605	100	90-110	
Copper	100	99.806	100	90-110	
Lead	100	94.124	94	90-110	
Zinc	100	99.719	100	90-110	

CCV11	Date: 25-Apr-2017 22:00		Seq: 4068708	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	103.913	104	90-110	
Copper	100	95.183	95	90-110	
Lead	100	93.455	94	90-110	
Zinc	100	95.201	95	90-110	

ICCV12	Date: 25-Apr-2017 22:59		Seq: 4068719	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	105.626	106	90-110	
Copper	100	104.328	104	90-110	
Lead	100	103.919	104	90-110	
Zinc	100	105.309	105	90-110	

CCV13	Date: 25-Apr-2017 23:19		Seq: 4068723	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Antimony	100	98.939	99	90-110	
Copper	100	98.866	99	90-110	
Lead	100	97.955	98	90-110	
Zinc	100	97.296	97	90-110	

Form 3 - BLANKS

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293605
Instrument: ICPMS04
Method: SW6020

ICB	Date: 25-Apr-2017 12:51		Seq: 4067541	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB1	Date: 25-Apr-2017 14:04		Seq: 4067866	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB2	Date: 25-Apr-2017 14:58		Seq: 4067901	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
ICCB3	Date: 25-Apr-2017 16:04		Seq: 4068628	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB4	Date: 25-Apr-2017 17:00		Seq: 4068640	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.439	0.4	5	J	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB5	Date: 25-Apr-2017 17:45		Seq: 4068650	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
CCB6	Date: 25-Apr-2017 18:30		Seq: 4068660	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	
MBLK-115623	Date: 25-Apr-2017 18:34		Seq: 4068664	MBLK	Units: mg/Kg
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.5	0.2	0.5	U	
Copper	0.2	0.1	0.2	U	
Lead	0.5	0.05	0.5	U	
Zinc	0.5	0.25	0.5	U	
CCB7	Date: 25-Apr-2017 19:10		Seq: 4068672	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	

Form 3 - BLANKS

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293605
Instrument: ICPMS04
Method: SW6020

CCB7	Date: 25-Apr-2017 19:10		Seq: 4068672	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

CCB8	Date: 25-Apr-2017 20:08		Seq: 4068685	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	0.445	0.4	5	J	
Copper	2	1	2	U	
Lead	4.092	0.6	5	J	
Zinc	5	2	5	U	

ICCB9	Date: 25-Apr-2017 20:59		Seq: 4068695	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	-1.502	0.6	5	J	
Zinc	5	2	5	U	

CCB10	Date: 25-Apr-2017 21:09		Seq: 4068697	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	-1.373	0.6	5	J	
Zinc	5	2	5	U	

CCB11	Date: 25-Apr-2017 22:19		Seq: 4068712	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	-1.961	0.6	5	J	
Zinc	5	2	5	U	

ICCB12	Date: 25-Apr-2017 23:14		Seq: 4068722	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

CCB13	Date: 25-Apr-2017 23:24		Seq: 4068724	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Antimony	5	0.4	5	U	
Copper	2	1	2	U	
Lead	5	0.6	5	U	
Zinc	5	2	5	U	

Form 4 - ICP Interference Check Sample

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293605
Instrument: ICPMS04
Method: SW6020

ICSA	Date: 25-Apr-2017 13:03	Seq: 4067590	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony		0.385	0	
Copper		0.486	0	
Lead		0.107	0	
Zinc		0.198	0	
ICSAB	Date: 25-Apr-2017 13:07	Seq: 4067591	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony	100	97.32	97.3	
Copper	100	93.79	93.8	
Lead	100	91.19	91.2	
Zinc	100	96.63	96.6	
ICSA	Date: 25-Apr-2017 23:40	Seq: 4068727	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony		0.068	0	
Copper		2.092	0	
Lead		0.112	0	
Zinc		0.33	0	
ICSAB	Date: 25-Apr-2017 23:44	Seq: 4068728	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Antimony	100	97.81	97.8	
Copper	100	100.2	100	
Lead	100	94	94.0	
Zinc	100	97.34	97.3	

Form 5A - Matrix Spike/Matrix Spike Duplicate Recovery

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 25-Apr-2017 19:28
Date Extracted: 25-Apr-2017 02:00
Units: mg/Kg

Matrix Spike: HS17041053-16MS
Client Sample ID: FTBL-SS-B55-0-12-042017-R
Analysis Method: SW6020

Analyte	Sample Result	MS Result	Spike Amount	% Rec	MSD Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Antimony	0.4680	4.510	9.386	46.6	4.705	9.367	48.8	75-125	4.22	20
Copper	8.694	17.47	9.386	93.5	17.18	9.367	90.6	75-125	1.68	20
Lead	13.01	27.95	9.386	159	23.94	9.367	117	75-125	15.4	20
Zinc	42.14	58.92	9.386	179	54.77	9.367	135	75-125	7.30	20

Form 5B - Post Digest Sample Recovery

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 25-Apr-2017 19:32
Date Extracted: 25-Apr-2017 02:00
Units: mg/Kg

Lab Sample ID: HS17041053-16PDS
Client Sample ID: FTBL-SS-B55-0-12-042017-R
Analysis Method: SW6020

Analyte	Sample Result	PDS Result	Spike Amount	% Rec	% Rec Limits
Antimony	0	9.131	9.309	97	75-125
Copper	8.694	17.13	9.309	91	75-125
Lead	13.01	22.11	9.309	98	75-125
Zinc	42.14	50.21	9.309	87	75-125

Form 7 - Laboratory Control Sample

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 25-Apr-2017 18:39
Date Extracted: 25-Apr-2017 02:00
Units: mg/Kg

Lab Sample ID: LCS-115623 Analysis Method: SW6020

Analyte	Spike Amount	LCS Result	% Rec	% Rec Limits
Antimony	10	9.983	100	80-120
Copper	10	9.806	98	80-120
Lead	10	10.39	104	80-120
Zinc	10	9.892	99	80-120

Form 8 - ICP Serial Dilutions

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 25-Apr-2017 19:19
Date Extracted: 25-Apr-2017 02:00
Units: mg/Kg

Lab Sample ID: HS17041053-16SD
Client Sample ID:FTBL-SS-B55-0-12-042017-R

Analysis Method: SW6020

Analyte	Sample Result	C	SD Result	C	RPD	Q
Antimony	0	U	0	U	0	
Copper	8.694		9.56		10	
Lead	13.01		12.85		1	
Zinc	42.14		44.45		5	

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Instrument:ICPMS04

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		ArHe
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
111	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
135	Barium	Indium		Ar
203	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Instrument:ICPMS05

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		Ar
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

FORM 12 - PREPARATION LOG

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 24-Apr-2017 14:30 End Date: 24-Apr-2017 16:30

Batch ID: 115588
Prep Code: 3050_I_Low
Method: SW3050A
Technician:

SampID	ClientID	Matrix	Init Wt	Init Vol	FinalVol (mL)	PrepFac
HS17041053-01	FTBL-SS-B19-0-12-041917-R	Soil	0.5442		50	91.88
HS17041053-02	FTBL-SS-B20-0-12-041917-R	Soil	0.5413		50	92.37
HS17041053-03	FD041917	Soil	0.5263		50	95
HS17041053-04	FTBL-SS-B13-0-12-041917-R	Soil	0.5293		50	94.46
HS17041053-04MS			0.5283		50	94.64
HS17041053-04MSD			0.5291		50	94.5
HS17041053-04PDS			0.5293		50	94.46
HS17041053-04SD			0.5293		50	94.46
HS17041053-05	FTBL-SS-B14-0-12-041917-R	Soil	0.5234		50	95.53
HS17041053-06	FTBL-SS-B25-0-12-041917-R	Soil	0.5331		50	93.79
HS17041053-07	FTBL-SS-B26-0-12-041917-R	Soil	0.5457		50	91.63
HS17041053-08	FTBL-SS-B31-0-12-041917-R	Soil	0.5412		50	92.39
HS17041053-09	FTBL-SS-B31-12-24-041917-R	Soil	0.5416		50	92.32
HS17041053-10	FTBL-SS-B32-0-12-041917-R	Soil	0.5331		50	93.79
HS17041053-11	FTBL-SS-B37-0-12-042017-R	Soil	0.5474		50	91.34
HS17041053-12	FTBL-SS-B37-12-24-042017-R	Soil	0.5281		50	94.68
HS17041053-13	FTBL-SS-B38-0-12-042017-R	Soil	0.5463		50	91.52
LCS-115588			0.5		50	100
MBLK-115588			0.5		50	100

FORM 12 - PREPARATION LOG

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 25-Apr-2017 14:00 End Date: 25-Apr-2017 16:00

Batch ID: 115623
Prep Code: 3050_I_Low
Method: SW3050A
Technician:

SampID	ClientID	Matrix	Init Wt	Init Vol	FinalVol (mL)	PrepFac
HS17041053-14	FTBL-SS-B43-0-12-042017-R	Soil	0.5245		50	95.33
HS17041053-15	FTBL-SS-B44-0-12-042017-R	Soil	0.5277		50	94.75
HS17041053-16	FTBL-SS-B55-0-12-042017-R	Soil	0.5371		50	93.09
HS17041053-16MS			0.5327		50	93.86
HS17041053-16MSD			0.5338		50	93.67
HS17041053-16PDS			0.5371		50	93.09
HS17041053-16SD			0.5371		50	93.09
HS17041053-17	FD042017	Soil	0.5407		50	92.47
HS17041053-18	FTBL-SS-B56-0-12-042017-R	Soil	0.5472		50	91.37
HS17041053-19	FTBL-SS-B49-0-12-042017-R	Soil	0.5257		50	95.11
HS17041053-20	FTBL-SS-B50-0-12-042017-R	Soil	0.5298		50	94.38
HS17041053-21	FTBL-SS-B50-12-24-042017-R	Soil	0.5383		50	92.89
LCS-115623			0.5		50	100
MBLK-115623			0.5		50	100

FORM 13 - ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 25-Apr-2017 End Date: 25-Apr-2017

Run ID:ICPMS04_293605
Instrument:ICPMS04
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS04_293605_Tune	1	25-Apr-2017 00:00	ICPMS04_293605_Tune_1	
CAL BLK	1	25-Apr-2017 12:11	003CALB.D_4067532	CU PB SB ZN
2/10/200	1	25-Apr-2017 12:15	004CALS.D_4067533	CU PB SB ZN
5/25/500	1	25-Apr-2017 12:20	005CALS.D_4067534	CU PB SB ZN
10/50/1000	1	25-Apr-2017 12:24	006CALS.D_4067535	CU PB SB ZN
100/500/10K	1	25-Apr-2017 12:29	007CALS.D_4067536	CU PB SB ZN
200/1000/20K	1	25-Apr-2017 12:34	008CALS.D_4067537	CU PB SB ZN
LLICV5	1	25-Apr-2017 12:42	010SMPL.D_4067539	CU PB SB ZN
LLICV2	1	25-Apr-2017 12:47	011SMPL.D_4067540	CU PB SB ZN
ICB	1	25-Apr-2017 12:51	012SMPL.D_4067541	CU PB SB ZN
ICV	1	25-Apr-2017 12:59	013SMPL.D_4067589	CU PB SB ZN
ICSA	1	25-Apr-2017 13:03	014SMPL.D_4067590	CU PB SB ZN
ICSAB	1	25-Apr-2017 13:07	015SMPL.D_4067591	CU PB SB ZN
FTBL-SS-B37-0-12-042017-R	10	25-Apr-2017 13:41	022SMPL.D_4067831	PB
FTBL-SS-B37-12-24-042017-R	10	25-Apr-2017 13:46	023SMPL.D_4067832	PB
FTBL-SS-B38-0-12-042017-R	10	25-Apr-2017 13:50	024SMPL.D_4067833	PB
CCV 1	1	25-Apr-2017 13:59	026SMPL.D_4067693	CU PB SB ZN
CCB 1	1	25-Apr-2017 14:04	027CCB.D_4067866	CU PB SB ZN
CCB 2	1	25-Apr-2017 14:58	039CCB.D_4067901	CU PB SB ZN
CCV 2	1	25-Apr-2017 15:03	040SMPL.D_4067902	CU PB SB ZN
CAL BLK	1	25-Apr-2017 15:23	043CALB.D_4068619	CU PB SB ZN
2/10/200	1	25-Apr-2017 15:28	044CALS.D_4068620	CU PB SB ZN
5/25/500	1	25-Apr-2017 15:32	045CALS.D_4068621	CU PB SB ZN
10/50/1000	1	25-Apr-2017 15:37	046CALS.D_4068622	CU PB SB ZN
100/500/10K	1	25-Apr-2017 15:42	047CALS.D_4068623	CU PB SB ZN
200/1000/20K	1	25-Apr-2017 15:46	048CALS.D_4068624	CU PB SB ZN
ICCV 3	1	25-Apr-2017 15:50	049SMPL.D_4068625	CU PB SB ZN
LLCCV5	1	25-Apr-2017 15:55	050SMPL.D_4068626	CU PB SB ZN
LLCCV2	1	25-Apr-2017 15:59	051SMPL.D_4068627	CU PB SB ZN
ICCB 3	1	25-Apr-2017 16:04	052SMPL.D_4068628	CU PB SB ZN
CCV 4	1	25-Apr-2017 16:55	063CCV.D_4068639	CU PB SB ZN
CCB 4	1	25-Apr-2017 17:00	064CCB.D_4068640	CU PB SB ZN
CCV 5	1	25-Apr-2017 17:40	073CCV.D_4068649	CU PB SB ZN
CCB 5	1	25-Apr-2017 17:45	074CCB.D_4068650	CU PB SB ZN
CCV 6	1	25-Apr-2017 18:26	083CCV.D_4068659	CU PB SB ZN
CCB 6	1	25-Apr-2017 18:30	084CCB.D_4068660	CU PB SB ZN
MBLK-115623	1	25-Apr-2017 18:34	085SMPL.D_4068664	CU PB SB ZN
LCS-115623	1	25-Apr-2017 18:39	086SMPL.D_4068665	CU PB SB ZN
CCV 7	1	25-Apr-2017 19:05	092CCV.D_4068671	CU PB SB ZN
CCB 7	1	25-Apr-2017 19:10	093CCB.D_4068672	CU PB SB ZN
FTBL-SS-B55-0-12-042017-R	1	25-Apr-2017 19:14	094SMPL.D_4068733	CU PB SB ZN
FTBL-SS-B55-0-12-042017-RSD	5	25-Apr-2017 19:19	095SMPL.D_4068674	CU PB SB ZN
FTBL-SS-B55-0-12-042017-RMS	1	25-Apr-2017 19:23	096SMPL.D_4068675	CU PB SB ZN
FTBL-SS-B55-0-12-042017-RMSD	1	25-Apr-2017 19:28	097SMPL.D_4068676	CU PB SB ZN
FTBL-SS-B55-0-12-042017-RPDS	1	25-Apr-2017 19:32	098SMPL.D_4068677	CU PB SB ZN
FTBL-SS-B43-0-12-042017-R	1	25-Apr-2017 19:37	099SMPL.D_4068734	CU SB ZN
FTBL-SS-B44-0-12-042017-R	1	25-Apr-2017 19:41	100SMPL.D_4068735	SB ZN
FD042017	1	25-Apr-2017 19:45	101SMPL.D_4068736	CU SB ZN
FTBL-SS-B56-0-12-042017-R	1	25-Apr-2017 19:50	102SMPL.D_4068737	CU PB SB ZN
CCV 8	1	25-Apr-2017 19:54	103CCV.D_4068682	CU PB SB ZN
CCB 8	1	25-Apr-2017 20:08	106CCB.D_4068685	CU PB SB ZN
CAL BLK	1	25-Apr-2017 20:17	108CALB.D_4068686	CU PB SB ZN
200	1	25-Apr-2017 20:22	109CALS.D_4068687	CU PB SB ZN

FORM 13 - ANALYSIS RUN LOG

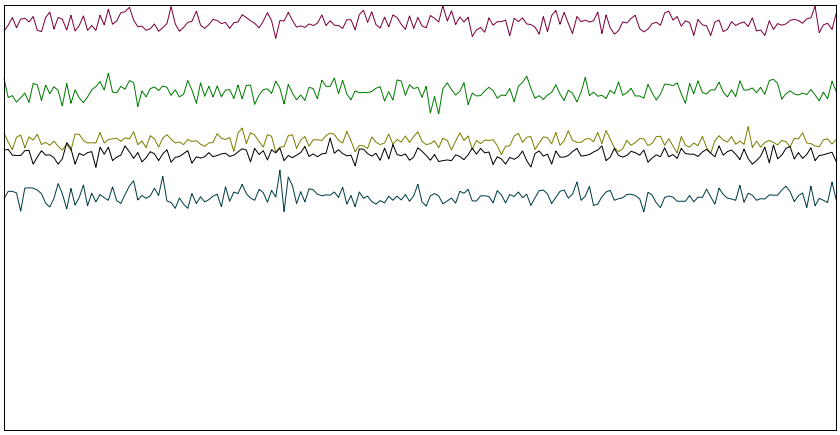
Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 25-Apr-2017 End Date: 25-Apr-2017

Run ID:ICPMS04_293605
Instrument:ICPMS04
Method:

Sample No.	D/F	Time	FileID	Analytes
5/25/500	1	25-Apr-2017 20:26	110CALS.D_4068688	CU PB SB ZN
10/50/1000	1	25-Apr-2017 20:31	111CALS.D_4068689	CU PB SB ZN
100/500/10K	1	25-Apr-2017 20:36	112CALS.D_4068690	CU PB SB ZN
200/1000/20K	1	25-Apr-2017 20:41	113CALS.D_4068691	CU PB SB ZN
ICCV 9	1	25-Apr-2017 20:45	114SMPL.D_4068692	CU PB SB ZN
LLCCV5	1	25-Apr-2017 20:50	115SMPL.D_4068693	CU PB SB ZN
LLCCV2	1	25-Apr-2017 20:55	116SMPL.D_4068694	CU PB SB ZN
ICCB 9	1	25-Apr-2017 20:59	117SMPL.D_4068695	CU PB SB ZN
CCV 10	1	25-Apr-2017 21:04	118CCV.D_4068696	CU PB SB ZN
CCB 10	1	25-Apr-2017 21:09	119CCB.D_4068697	CU PB SB ZN
FTBL-SS-B49-0-12-042017-R	1	25-Apr-2017 21:14	120SMPL.D_4068738	CU PB SB ZN
FTBL-SS-B50-0-12-042017-R	1	25-Apr-2017 21:18	121SMPL.D_4068739	CU PB SB ZN
FTBL-SS-B50-12-24-042017-R	1	25-Apr-2017 21:23	122SMPL.D_4068740	CU PB SB ZN
CCV 11	1	25-Apr-2017 22:00	130CCV.D_4068708	CU PB SB ZN
CCB 11	1	25-Apr-2017 22:19	134CCB.D_4068712	CU PB SB ZN
CAL BLK	1	25-Apr-2017 22:29	136CALB.D_4068713	CU PB SB ZN
2/10/200	1	25-Apr-2017 22:34	137CALS.D_4068714	CU PB SB ZN
5/25/500	1	25-Apr-2017 22:39	138CALS.D_4068715	CU PB SB ZN
10/50/1000	1	25-Apr-2017 22:44	139CALS.D_4068716	CU PB SB ZN
100/500/10K	1	25-Apr-2017 22:49	140CALS.D_4068717	CU PB SB ZN
200/1000/20K	1	25-Apr-2017 22:54	141CALS.D_4068718	CU PB SB ZN
ICCV 12	1	25-Apr-2017 22:59	142SMPL.D_4068719	CU PB SB ZN
LLCCV5	1	25-Apr-2017 23:04	143SMPL.D_4068720	CU PB SB ZN
LLCCV2	1	25-Apr-2017 23:09	144SMPL.D_4068721	CU PB SB ZN
ICCB 12	1	25-Apr-2017 23:14	145SMPL.D_4068722	CU PB SB ZN
CCV 13	1	25-Apr-2017 23:19	146CCV.D_4068723	CU PB SB ZN
CCB 13	1	25-Apr-2017 23:24	147CCB.D_4068724	CU PB SB ZN
LLCCV2	1	25-Apr-2017 23:29	148SMPL.D_4068725	CU PB SB ZN
LLCCV5	1	25-Apr-2017 23:34	149SMPL.D_4068726	CU PB SB ZN
ICSA	1	25-Apr-2017 23:40	150SMPL.D_4068727	CU PB SB ZN
ICSAB	1	25-Apr-2017 23:44	151SMPL.D_4068728	CU PB SB ZN

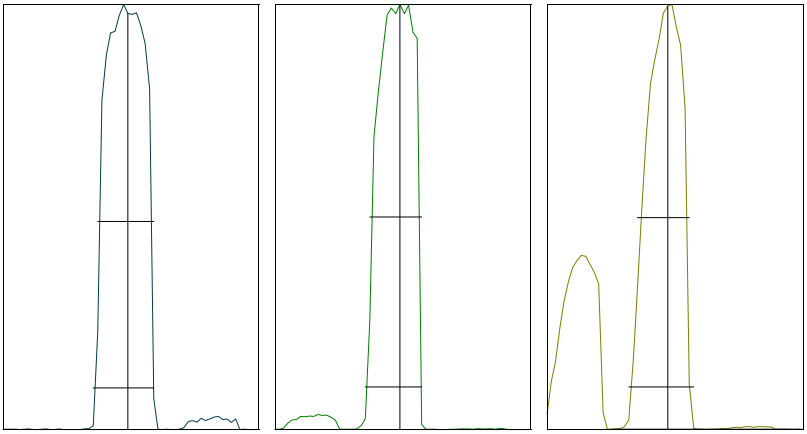
Tune Report

Tune File : 042517A5.u
Comment :



Integration Time:	0.1000 sec	
Sampling Period:	0.5100 sec	
n:	200	
Oxide:	156/140	0.452%
Doubly Charged:	70/140	0.851%

m/z	Range	Count	Mean	RSD%	Background
9	5,000	2713.0	2755.8	2.86	3.10
24	10,000	7981.0	7976.5	2.05	1.70
59	20,000	13696.0	13619.1	1.79	3.70
115	20,000	19633.0	19194.0	1.59	8.90
208	20,000	12659.0	12980.9	1.76	15.90



m/z:	9	59	208
Height:	2,771	13,607	12,933
Axis:	9.00	59.00	207.95
W-50%:	0.65	0.60	0.60
W-10%:	0.700	0.6500	0.7500

Integration Time:	0.1000 sec
Acquisition Time:	22.6600 sec

Y axis : Linear

Generated : Apr 25, 2017 11:10:29
Printed : Apr 25, 2017 11:10:31

Tune Report

Tune File : 042517A5.u
Comment :

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1600 W	Extract 1	:	0 V	AMU Gain	:	137
RF Matching	:	1.2 V	Extract 2	:	-200 V	AMU Offset	:	123
Smpl Depth	:	8 mm	Omega Bias	:	-100 V	Axis Gain	:	0.9932
Torch-H	:	0.1 mm	Omega Lens	:	10.2 V	Axis Offset	:	0.03
Torch-V	:	0 mm	Cell Entrance	:	-30 V	QP Bias	:	-3 V
Carrier Gas	:	0.35 L/min	Cell Exit	:	-50 V			
Dilution Mode	:	ON	Deflect	:	14.8 V	===Detector Parameters===		
Dilution Gas	:	0.5 L/min	Plate Bias	:	-40 V	Discriminator	:	4.5 mV
Optional Gas	:	--- %	===Octopole Parameters===			Analog HV	:	2158 V
Nebulizer Pump	:	0.1 rps	OctP RF	:	180 V	Pulse HV	:	1522 V
Sample Pump	:	--- rps	OctP Bias	:	-8 V			
S/C Temp	:	2 degC						

===Reaction Cell===

Reaction Mode	:	OFF						
H2 Gas	:	--- mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

Generated : Apr 25, 2017 11:10:29
Printed : Apr 25, 2017 11:10:34

Calibration Blank Report

Sample Name	CAL BLK
Data File Name	003CALB.D
DataPath	C:\ICPMH\1\DATA\17D25I00.B
AcqDateTime	4/25/2017 12:11:00
Type	CalBlk
VialNumber	1101
Dilution	1
Comment	
Operator	JUSTIN ENNIS ICPMS04
Current Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	36326	0.79
Be	9	6	1	34	36.64
B	11	6	1	17746	0.28
Na	23	72	1	243928	8.55
Na	23	72	2	8695	1.88
Mg	24	72	1	35927	50.38
Al	27	72	1	84111	52.20
P	31	72	1	26850	5.85
K	39	72	1	3821603	0.23
Ca	44	72	1	147481	5.44
Ca	44	72	2	472	14.40
Ti	47	72	1	248	28.26
Ti	47	72	2	2	173.21
V	51	72	1	549236	5.14
V	51	72	2	952	11.21
Cr	52	72	1	21480	6.52
Cr	52	72	2	566	9.47
Mn	55	72	1	17809	10.30
Mn	55	72	2	158	20.84
Fe	56	72	1	1962216	3.18
Fe	56	72	2	8168	2.60
Co	59	72	1	389	13.94
Co	59	72	2	61	15.75
Ni	60	72	1	260	34.47
Ni	60	72	2	56	40.84
Cu	63	72	1	3456	7.30
Cu	63	72	2	930	3.78
Cu	65	72	1	1747	4.40
Zn	66	72	1	1349	13.64
Zn	68	72	1	1026	17.55
As	75	72	1	80204	6.89
As	75	72	2	37	24.73
Se	78	72	1	18834	0.52
Se	78	72	2	17	32.12
Se	82	72	1	319	9.78
Sr	88	72	1	1766	49.25
Mo	95	72	1	407	23.13
Mo	97	72	1	260	8.01
Ag	107	72	1	126	32.44
Ag	109	72	1	139	9.70
Cd	111	115	1	19	130.08
Cd	114	115	1	50	34.64
Sn	118	72	1	1101	15.20
Sn	119	72	1	348	18.69
Sb	121	72	1	1275	14.90
Sb	121	72	2	284	6.06

Calibration Blank Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	123	72	1	956	13.28
Ba	135	115	1	214	25.27
Ba	137	115	1	381	29.69
Tl	203	209	1	4236	11.16
Tl	205	209	1	10121	12.53
Pb	206	209	1	1458	53.80
Pb	207	209	1	1212	52.34
Pb	208	209	1	5642	57.12

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Li	6	1	380768	0.70
Ge	72	1	2215061	1.31
Ge	72	2	282811	0.11
In	115	1	2296992	0.64
Bi	209	1	2220153	0.83

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	2/10/200
Data File Name	004CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 12:15
Type	CalStd
VialNumber	1102
Dilution	1
Comment	
Operator	JUSTIN ENNIS ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	43184	1.69
Be	9	6	1	5101	6.06
B	11	6	1	27850	2.14
Na	23	72	1	2353719	0.30
Na	23	72	2	63149	1.15
Mg	24	72	1	1631753	1.04
Al	27	72	1	105227	32.56
P	31	72	1	33317	3.06
K	39	72	1	5802135	0.57
Ca	44	72	1	204476	3.70
Ca	44	72	2	1806	3.95
Ti	47	72	1	2180	8.95
Ti	47	72	2	110	10.93
V	51	72	1	557955	4.99
V	51	72	2	4611	4.26
Cr	52	72	1	46232	1.81
Cr	52	72	2	5426	0.56
Mn	55	72	1	50691	4.18
Mn	55	72	2	2779	6.04
Fe	56	72	1	4757308	0.86
Fe	56	72	2	415796	0.55
Co	59	72	1	29261	0.61
Co	59	72	2	7409	3.63
Ni	60	72	1	6612	3.73
Ni	60	72	2	2098	1.06
Cu	63	72	1	18772	0.73
Cu	63	72	2	6303	3.70
Cu	65	72	1	8995	1.56
Zn	66	72	1	6125	0.96
Zn	68	72	1	4474	1.72
As	75	72	1	82681	6.34
As	75	72	2	910	2.14
Se	78	72	1	18626	0.45
Se	78	72	2	63	20.07
Se	82	72	1	616	3.03
Sr	88	72	1	42044	2.43
Mo	95	72	1	7635	2.33
Mo	97	72	1	4825	4.77
Ag	107	72	1	19355	2.45
Ag	109	72	1	18726	0.90
Cd	111	115	1	4098	4.93
Cd	114	115	1	10155	0.71
Sn	118	72	1	12006	5.39
Sn	119	72	1	4516	4.00

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	19155	1.51
Sb	121	72	2	4528	2.40
Sb	123	72	1	14518	1.57
Ba	135	115	1	3901	5.62
Ba	137	115	1	7007	2.77
Tl	203	209	1	16591	6.45
Tl	205	209	1	39224	5.92
Pb	206	209	1	14474	6.02
Pb	207	209	1	12856	7.36
Pb	208	209	1	58229	6.31

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	335737	1.63	380768	88.2	70	125	
Ge	72	1	2124265	3.06	2215061	95.9	70	125	
Ge	72	2	266581	0.25	282811	94.3	70	125	
In	115	1	2204032	1.17	2296992	96.0	70	125	
Bi	209	1	2125530	1.95	2220153	95.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	5/25/500
Data File Name	005CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 12:20
Type	CalStd
VialNumber	1103
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	66310	0.74
Be	9	6	1	13543	1.47
B	11	6	1	49526	3.91
Na	23	72	1	5723940	0.76
Na	23	72	2	151975	0.42
Mg	24	72	1	4122504	1.13
Al	27	72	1	135367	26.61
P	31	72	1	44936	1.43
K	39	72	1	9220057	0.39
Ca	44	72	1	301867	2.96
Ca	44	72	2	4144	5.93
Ti	47	72	1	5461	2.91
Ti	47	72	2	284	12.53
V	51	72	1	635033	4.44
V	51	72	2	10944	1.32
Cr	52	72	1	87544	0.95
Cr	52	72	2	13443	1.21
Mn	55	72	1	103634	1.78
Mn	55	72	2	6842	1.42
Fe	56	72	1	9282484	0.27
Fe	56	72	2	1067114	0.50
Co	59	72	1	73346	0.59
Co	59	72	2	19112	0.15
Ni	60	72	1	17062	1.65
Ni	60	72	2	5271	1.97
Cu	63	72	1	44285	1.78
Cu	63	72	2	14550	2.96
Cu	65	72	1	20914	2.38
Zn	66	72	1	14040	2.03
Zn	68	72	1	10206	2.97
As	75	72	1	96394	4.49
As	75	72	2	2387	3.39
Se	78	72	1	20108	1.96
Se	78	72	2	150	6.70
Se	82	72	1	1050	4.74
Sr	88	72	1	103317	0.19
Mo	95	72	1	19511	2.46
Mo	97	72	1	11744	2.47
Ag	107	72	1	49966	1.75
Ag	109	72	1	48554	1.86
Cd	111	115	1	10907	0.69
Cd	114	115	1	25854	1.68
Sn	118	72	1	29972	1.62
Sn	119	72	1	11397	2.41

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	47840	0.96
Sb	121	72	2	11562	1.14
Sb	123	72	1	36418	0.32
Ba	135	115	1	9565	2.34
Ba	137	115	1	16890	2.41
Tl	203	209	1	37256	4.61
Tl	205	209	1	88850	5.61
Pb	206	209	1	34694	2.27
Pb	207	209	1	31318	2.38
Pb	208	209	1	140641	1.00

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	369905	2.10	380768	97.1	70	125	
Ge	72	1	2179898	2.41	2215061	98.4	70	125	
Ge	72	2	276726	0.49	282811	97.8	70	125	
In	115	1	2270728	1.75	2296992	98.9	70	125	
Bi	209	1	2169902	1.67	2220153	97.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	10/50/1000
Data File Name	006CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 12:24
Type	CalStd
VialNumber	1104
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	88845	0.36
Be	9	6	1	25501	0.78
B	11	6	1	78439	4.83
Na	23	72	1	10905798	0.68
Na	23	72	2	283590	0.33
Mg	24	72	1	7917816	0.12
Al	27	72	1	178171	18.80
P	31	72	1	63323	1.32
K	39	72	1	14246967	0.60
Ca	44	72	1	453184	1.77
Ca	44	72	2	7334	3.37
Ti	47	72	1	10330	0.83
Ti	47	72	2	606	1.77
V	51	72	1	716625	3.29
V	51	72	2	19982	2.17
Cr	52	72	1	150344	1.35
Cr	52	72	2	25874	1.48
Mn	55	72	1	184237	1.23
Mn	55	72	2	13265	2.59
Fe	56	72	1	16124367	0.67
Fe	56	72	2	2104618	0.15
Co	59	72	1	142954	1.17
Co	59	72	2	37072	1.14
Ni	60	72	1	32751	1.03
Ni	60	72	2	9923	3.15
Cu	63	72	1	81455	1.86
Cu	63	72	2	28047	1.03
Cu	65	72	1	39162	0.77
Zn	66	72	1	25612	0.46
Zn	68	72	1	18491	1.04
As	75	72	1	113110	4.42
As	75	72	2	4492	2.22
Se	78	72	1	20926	0.63
Se	78	72	2	242	10.09
Se	82	72	1	1708	2.46
Sr	88	72	1	199743	1.37
Mo	95	72	1	37157	1.03
Mo	97	72	1	23411	0.58
Ag	107	72	1	97125	0.62
Ag	109	72	1	93465	0.37
Cd	111	115	1	20910	1.00
Cd	114	115	1	50889	1.68
Sn	118	72	1	57269	1.90
Sn	119	72	1	22394	3.00

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	91666	0.97
Sb	121	72	2	22121	1.40
Sb	123	72	1	69341	0.58
Ba	135	115	1	19201	1.06
Ba	137	115	1	32695	0.24
Tl	203	209	1	70824	4.71
Tl	205	209	1	167519	4.47
Pb	206	209	1	67717	1.15
Pb	207	209	1	60363	1.96
Pb	208	209	1	272305	1.24

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	334290	1.90	380768	87.8	70	125	
Ge	72	1	2098321	2.09	2215061	94.7	70	125	
Ge	72	2	262104	0.13	282811	92.7	70	125	
In	115	1	2181005	2.73	2296992	95.0	70	125	
Bi	209	1	2089159	1.95	2220153	94.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	100/500/10K
Data File Name	007CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 12:29
Type	CalStd
VialNumber	1105
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	573473	0.53
Be	9	6	1	241014	0.72
B	11	6	1	635200	3.93
Na	23	72	1	99822233	1.28
Na	23	72	2	2637065	1.37
Mg	24	72	1	73084607	0.50
Al	27	72	1	1066668	1.90
P	31	72	1	373959	1.07
K	39	72	1	102919322	0.47
Ca	44	72	1	3177268	0.06
Ca	44	72	2	65870	1.48
Ti	47	72	1	96829	1.76
Ti	47	72	2	5524	3.19
V	51	72	1	1963961	2.46
V	51	72	2	178426	0.53
Cr	52	72	1	1248547	1.28
Cr	52	72	2	232918	0.42
Mn	55	72	1	1606017	0.82
Mn	55	72	2	119545	0.59
Fe	56	72	1	135504199	0.23
Fe	56	72	2	19261268	0.24
Co	59	72	1	1368770	1.59
Co	59	72	2	342763	0.26
Ni	60	72	1	296442	0.15
Ni	60	72	2	92402	0.75
Cu	63	72	1	733613	0.78
Cu	63	72	2	251161	0.41
Cu	65	72	1	348882	0.79
Zn	66	72	1	230748	0.17
Zn	68	72	1	163329	0.05
As	75	72	1	356872	1.80
As	75	72	2	41482	0.40
Se	78	72	1	51078	1.07
Se	78	72	2	2247	2.54
Se	82	72	1	13878	2.14
Sr	88	72	1	1930227	0.29
Mo	95	72	1	356182	1.01
Mo	97	72	1	220202	0.71
Ag	107	72	1	912079	0.70
Ag	109	72	1	879732	0.61
Cd	111	115	1	196395	0.43
Cd	114	115	1	473485	0.10
Sn	118	72	1	537714	0.16
Sn	119	72	1	209059	0.77

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	841461	0.68
Sb	121	72	2	204888	0.28
Sb	123	72	1	639900	0.98
Ba	135	115	1	178185	0.46
Ba	137	115	1	308587	0.69
Tl	203	209	1	699758	2.14
Tl	205	209	1	1764429	1.55
Pb	206	209	1	605130	0.90
Pb	207	209	1	547609	1.21
Pb	208	209	1	2450451	0.74

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	312164	1.90	380768	82.0	70	125	
Ge	72	1	2056850	1.34	2215061	92.9	70	125	
Ge	72	2	258943	0.29	282811	91.6	70	125	
In	115	1	2121478	2.10	2296992	92.4	70	125	
Bi	209	1	2043943	2.84	2220153	92.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	200/1000/20K
Data File Name	008CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 12:34
Type	CalStd
VialNumber	1106
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	1147621	1.71
Be	9	6	1	483215	0.11
B	11	6	1	1304848	4.61
Na	23	72	1	194895030	0.26
Na	23	72	2	5115867	0.14
Mg	24	72	1	142921021	0.32
Al	27	72	1	2068626	1.41
P	31	72	1	708358	0.51
K	39	72	1	197973017	0.79
Ca	44	72	1	6038972	0.38
Ca	44	72	2	129462	0.57
Ti	47	72	1	189190	0.13
Ti	47	72	2	10324	2.68
V	51	72	1	3233105	1.22
V	51	72	2	353855	0.30
Cr	52	72	1	2423062	0.47
Cr	52	72	2	459858	0.27
Mn	55	72	1	3112482	0.54
Mn	55	72	2	234531	0.19
Fe	56	72	1	263828012	0.38
Fe	56	72	2	37742152	0.33
Co	59	72	1	2650241	0.98
Co	59	72	2	668101	0.46
Ni	60	72	1	576720	0.38
Ni	60	72	2	179848	0.47
Cu	63	72	1	1479240	0.55
Cu	63	72	2	487771	0.61
Cu	65	72	1	673718	0.60
Zn	66	72	1	444942	0.19
Zn	68	72	1	318095	0.40
As	75	72	1	620883	0.66
As	75	72	2	81351	0.45
Se	78	72	1	83642	0.12
Se	78	72	2	4368	0.41
Se	82	72	1	26846	0.46
Sr	88	72	1	3727869	0.51
Mo	95	72	1	699008	0.87
Mo	97	72	1	432393	1.10
Ag	107	72	1	1845282	0.77
Ag	109	72	1	1793335	1.50
Cd	111	115	1	385287	0.53
Cd	114	115	1	930046	0.46
Sn	118	72	1	1062801	0.20
Sn	119	72	1	412473	0.32

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	1749172	1.08
Sb	121	72	2	410100	0.39
Sb	123	72	1	1290320	0.03
Ba	135	115	1	350773	0.55
Ba	137	115	1	603090	0.27
Tl	203	209	1	1365118	1.83
Tl	205	209	1	3425147	1.84
Pb	206	209	1	1185524	0.22
Pb	207	209	1	1067925	0.32
Pb	208	209	1	4974658	0.75

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	268046	8.46	380768	70.4	70	125	
Ge	72	1	1892711	8.01	2215061	85.4	70	125	
Ge	72	2	255688	0.46	282811	90.4	70	125	
In	115	1	1957387	9.14	2296992	85.2	70	125	
Bi	209	1	1872334	8.66	2220153	84.3	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	010SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 12:42
Sample Name	LLICV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	5.087	5.087	0.31
Be	9	6	1	ppb	4.974	4.974	3.74
B	11	6	1	ppb	58.618	58.618	0.37
Na	23	72	1	ppb	491.160	491.160	2.14
Na	23	72	2	ppb	517.215	517.215	0.39
Mg	24	72	1	ppb	495.720	495.720	2.02
Al	27	72	1	ppb	6.961	6.961	37.75
P	31	72	1	ppb	25.626	25.626	5.63
K	39	72	1	ppb	494.527	494.527	2.03
Ca	44	72	1	ppb	435.053	435.053	3.07
Ca	44	72	2	ppb	525.896	525.896	4.67
Ti	47	72	1	ppb	4.803	4.803	1.68
Ti	47	72	2	ppb	5.428	5.428	9.40
V	51	72	1	ppb	-12.006	-12.006	-1.76
V	51	72	2	ppb	4.906	4.906	0.81
Cr	52	72	1	ppb	4.468	4.468	2.39
Cr	52	72	2	ppb	5.258	5.258	1.90
Mn	55	72	1	ppb	5.004	5.004	1.42
Mn	55	72	2	ppb	5.332	5.332	1.17
Fe	56	72	1	ppb	476.285	476.285	1.39
Fe	56	72	2	ppb	520.997	520.997	0.69
Co	59	72	1	ppb	4.857	4.857	2.09
Co	59	72	2	ppb	5.404	5.404	1.31
Ni	60	72	1	ppb	4.933	4.933	3.42
Ni	60	72	2	ppb	5.507	5.507	3.75
Cu	63	72	1	ppb	4.766	4.766	2.31
Cu	63	72	2	ppb	5.224	5.224	1.47
Cu	65	72	1	ppb	4.929	4.929	4.48
Zn	66	72	1	ppb	5.513	5.513	2.96
Zn	66	72	2	ppb	5.121	5.121	6.46
Zn	68	72	1	ppb	5.053	5.053	1.55
As	75	72	1	ppb	-2.204	-2.204	-22.99
As	75	72	2	ppb	5.329	5.329	1.30
Se	78	72	1	ppb	4.355	4.355	22.32
Se	78	72	2	ppb	5.530	5.530	13.55
Se	82	72	1	ppb	5.099	5.099	7.83
Sr	88	72	1	ppb	4.810	4.810	0.99
Mo	95	72	1	ppb	5.002	5.002	3.06
Mo	97	72	1	ppb	5.047	5.047	0.83
Rh	103	115	1	ppb	-21.937	-21.937	-85.17
Pd	105	115	1	ppb	53.425	53.425	95.45
Ag	107	72	1	ppb	5.254	5.254	1.95
Ag	109	72	1	ppb	5.241	5.241	2.11
Cd	111	115	1	ppb	4.908	4.908	4.52

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	4.768	4.768	3.88
Sn	118	72	1	ppb	5.050	5.050	0.92
Sn	119	72	1	ppb	5.146	5.146	3.62
Sb	121	72	1	ppb	5.404	5.404	2.25
Sb	121	72	2	ppb	5.392	5.392	1.75
Sb	123	72	1	ppb	5.397	5.397	2.16
Ba	135	115	1	ppb	4.835	4.835	4.90
Ba	137	115	1	ppb	4.789	4.789	0.71
W	182	209	1	ppb	4.728	4.728	132.75
Pt	195	209	1	ppb	-100.820	-100.820	-1000.00
Au	197	209	1	ppb	194.197	194.197	381.57
Tl	203	209	1	ppb	6.475	6.475	5.69
Tl	205	209	1	ppb	6.054	6.054	5.84
Pb	206	209	1	ppb	4.869	4.869	1.16
Pb	207	209	1	ppb	4.837	4.837	0.59
Pb	208	209	1	ppb	4.719	4.719	1.49
U	238	209	1	ppb	4.190	4.190	2.03

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	333,835	1.89	380768	87.7	70	125	
1	Ge	72	2,088,812	1.32	2215061	94.3	70	125	
2	Ge	72	263,878	0.26	282811	93.3	70	125	
1	In	115	2,179,164	2.22	2296992	94.9	70	125	
1	Bi	209	2,108,423	0.72	2220153	95.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	011SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 12:47
Sample Name	LLICV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	2.178	2.178	10.63
Be	9	6	1	ppb	2.066	2.066	2.66
B	11	6	1	ppb	30.698	30.698	7.31
Na	23	72	1	ppb	206.206	206.206	8.05
Na	23	72	2	ppb	204.306	204.306	1.45
Mg	24	72	1	ppb	212.588	212.588	7.44
Al	27	72	1	ppb	5.781	5.781	67.95
P	31	72	1	ppb	13.129	13.129	41.30
K	39	72	1	ppb	224.969	224.969	12.53
Ca	44	72	1	ppb	158.029	158.029	36.10
Ca	44	72	2	ppb	220.676	220.676	6.67
Ti	47	72	1	ppb	2.088	2.088	10.95
Ti	47	72	2	ppb	2.195	2.195	15.58
V	51	72	1	ppb	-10.418	-10.418	-21.15
V	51	72	2	ppb	1.826	1.826	3.76
Cr	52	72	1	ppb	1.853	1.853	14.41
Cr	52	72	2	ppb	1.997	1.997	3.98
Mn	55	72	1	ppb	2.203	2.203	14.43
Mn	55	72	2	ppb	2.086	2.086	1.50
Fe	56	72	1	ppb	199.023	199.023	11.82
Fe	56	72	2	ppb	209.063	209.063	0.63
Co	59	72	1	ppb	2.047	2.047	7.83
Co	59	72	2	ppb	2.142	2.142	0.96
Ni	60	72	1	ppb	2.132	2.132	6.50
Ni	60	72	2	ppb	2.167	2.167	6.03
Cu	63	72	1	ppb	1.960	1.960	6.40
Cu	63	72	2	ppb	2.079	2.079	2.64
Cu	65	72	1	ppb	2.010	2.010	6.91
Zn	66	72	1	ppb	2.729	2.729	8.20
Zn	66	72	2	ppb	1.900	1.900	9.07
Zn	68	72	1	ppb	2.084	2.084	11.44
As	75	72	1	ppb	-2.546	-2.546	-93.49
As	75	72	2	ppb	2.101	2.101	1.20
Se	78	72	1	ppb	2.841	2.841	103.43
Se	78	72	2	ppb	1.788	1.788	37.77
Se	82	72	1	ppb	2.190	2.190	3.64
Sr	88	72	1	ppb	2.073	2.073	10.08
Mo	95	72	1	ppb	2.080	2.080	6.24
Mo	97	72	1	ppb	2.068	2.068	9.88
Rh	103	115	1	ppb	-46.734	-46.734	-15.93
Pd	105	115	1	ppb	19.390	19.390	140.36
Ag	107	72	1	ppb	2.203	2.203	5.52
Ag	109	72	1	ppb	2.235	2.235	8.29
Cd	111	115	1	ppb	2.059	2.059	6.10

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	2.026	2.026	9.29
Sn	118	72	1	ppb	2.182	2.182	8.04
Sn	119	72	1	ppb	2.259	2.259	9.65
Sb	121	72	1	ppb	2.264	2.264	6.73
Sb	121	72	2	ppb	2.185	2.185	3.81
Sb	123	72	1	ppb	2.241	2.241	6.43
Ba	135	115	1	ppb	2.020	2.020	12.30
Ba	137	115	1	ppb	1.995	1.995	8.69
W	182	209	1	ppb	-8.137	-8.137	-53.10
Pt	195	209	1	ppb	252.638	252.638	188.31
Au	197	209	1	ppb	166.216	166.216	140.85
Tl	203	209	1	ppb	2.571	2.571	2.00
Tl	205	209	1	ppb	2.412	2.412	2.90
Pb	206	209	1	ppb	2.110	2.110	13.37
Pb	207	209	1	ppb	2.108	2.108	13.60
Pb	208	209	1	ppb	2.036	2.036	14.29
U	238	209	1	ppb	1.761	1.761	8.31

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	323,199	5.00	380768	84.9	70	125	
1	Ge	72	2,003,174	5.79	2215061	90.4	70	125	
2	Ge	72	263,067	0.27	282811	93.0	70	125	
1	In	115	2,093,104	5.67	2296992	91.1	70	125	
1	Bi	209	2,021,895	7.05	2220153	91.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	012SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 12:51
Sample Name	ICB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.090	0.090	25.79
Be	9	6	1	ppb	0.009	0.009	52.86
B	11	6	1	ppb	13.364	13.364	1.65
Na	23	72	1	ppb	-4.396	-4.396	-38.77
Na	23	72	2	ppb	-5.118	-5.118	-13.28
Mg	24	72	1	ppb	0.343	0.343	689.20
Al	27	72	1	ppb	1.879	1.879	166.16
P	31	72	1	ppb	0.026	0.026	10439.46
K	39	72	1	ppb	6.782	6.782	22.13
Ca	44	72	1	ppb	-83.901	-83.901	-24.66
Ca	44	72	2	ppb	-4.493	-4.493	-106.27
Ti	47	72	1	ppb	-0.042	-0.042	-137.19
Ti	47	72	2	ppb	0.086	0.086	73.09
V	51	72	1	ppb	-9.607	-9.607	-10.27
V	51	72	2	ppb	-0.252	-0.252	-18.32
Cr	52	72	1	ppb	-0.133	-0.133	-43.58
Cr	52	72	2	ppb	-0.015	-0.015	-145.11
Mn	55	72	1	ppb	0.071	0.071	177.44
Mn	55	72	2	ppb	0.054	0.054	42.54
Fe	56	72	1	ppb	-8.275	-8.275	-44.76
Fe	56	72	2	ppb	0.923	0.923	13.18
Co	59	72	1	ppb	0.008	0.008	100.49
Co	59	72	2	ppb	0.007	0.007	33.12
Ni	60	72	1	ppb	-0.008	-0.008	-163.44
Ni	60	72	2	ppb	0.026	0.026	22.54
Cu	63	72	1	ppb	-0.062	-0.062	-21.30
Cu	63	72	2	ppb	-0.034	-0.034	-69.51
Cu	65	72	1	ppb	-0.059	-0.059	-35.01
Zn	66	72	1	ppb	0.585	0.585	15.62
Zn	66	72	2	ppb	-0.247	-0.247	-35.96
Zn	68	72	1	ppb	0.017	0.017	463.63
As	75	72	1	ppb	-3.641	-3.641	-35.35
As	75	72	2	ppb	0.004	0.004	688.73
Se	78	72	1	ppb	-1.053	-1.053	-41.20
Se	78	72	2	ppb	0.023	0.023	1323.07
Se	82	72	1	ppb	-0.177	-0.177	-39.93
Sr	88	72	1	ppb	0.020	0.020	255.14
Mo	95	72	1	ppb	0.007	0.007	326.27
Mo	97	72	1	ppb	0.020	0.020	122.62
Rh	103	115	1	ppb	-52.572	-52.572	-43.17
Pd	105	115	1	ppb	-34.076	-34.076	-184.72
Ag	107	72	1	ppb	0.019	0.019	49.18
Ag	109	72	1	ppb	0.014	0.014	39.72
Cd	111	115	1	ppb	0.004	0.004	215.42

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.014	0.014	8.90
Sn	118	72	1	ppb	0.096	0.096	48.01
Sn	119	72	1	ppb	0.120	0.120	12.98
Sb	121	72	1	ppb	0.025	0.025	50.84
Sb	121	72	2	ppb	0.040	0.040	12.98
Sb	123	72	1	ppb	0.027	0.027	59.20
Ba	135	115	1	ppb	-0.003	-0.003	-620.05
Ba	137	115	1	ppb	-0.018	-0.018	-177.54
W	182	209	1	ppb	-22.902	-22.902	-21.96
Pt	195	209	1	ppb	112.010	112.010	914.09
Au	197	209	1	ppb	141.226	141.226	159.92
Tl	203	209	1	ppb	0.272	0.272	37.89
Tl	205	209	1	ppb	0.246	0.246	39.68
Pb	206	209	1	ppb	0.008	0.008	1744.37
Pb	207	209	1	ppb	0.004	0.004	3568.71
Pb	208	209	1	ppb	0.007	0.007	1685.69
U	238	209	1	ppb	0.003	0.003	135.23

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	335,152	0.59	380768	88.0	70	125	
1	Ge	72	2,060,696	0.48	2215061	93.0	70	125	
2	Ge	72	262,723	0.50	282811	92.9	70	125	
1	In	115	2,158,621	0.49	2296992	94.0	70	125	
1	Bi	209	2,063,157	0.90	2220153	92.9	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	013SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 12:59
Sample Name	ICV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	100.749	100.749	1.09
Be	9	6	1	ppb	101.994	101.994	1.33
B	11	6	1	ppb	513.269	513.269	5.64
Na	23	72	1	ppb	9573.115	9573.115	0.35
Na	23	72	2	ppb	10098.701	10098.701	0.87
Mg	24	72	1	ppb	9569.505	9569.505	0.90
Al	27	72	1	ppb	97.795	97.795	3.73
P	31	72	1	ppb	476.823	476.823	0.23
K	39	72	1	ppb	9516.197	9516.197	0.42
Ca	44	72	1	ppb	9554.998	9554.998	0.10
Ca	44	72	2	ppb	10048.403	10048.403	1.37
Ti	47	72	1	ppb	94.547	94.547	0.88
Ti	47	72	2	ppb	97.639	97.639	3.00
V	51	72	1	ppb	91.705	91.705	1.26
V	51	72	2	ppb	99.442	99.442	1.14
Cr	52	72	1	ppb	96.659	96.659	1.11
Cr	52	72	2	ppb	99.406	99.406	1.44
Mn	55	72	1	ppb	96.589	96.589	1.01
Mn	55	72	2	ppb	100.063	100.063	0.39
Fe	56	72	1	ppb	9541.783	9541.783	0.05
Fe	56	72	2	ppb	10042.181	10042.181	0.34
Co	59	72	1	ppb	96.968	96.968	0.31
Co	59	72	2	ppb	100.155	100.155	0.38
Ni	60	72	1	ppb	96.143	96.143	0.59
Ni	60	72	2	ppb	101.855	101.855	1.05
Cu	63	72	1	ppb	92.560	92.560	0.19
Cu	63	72	2	ppb	100.661	100.661	1.24
Cu	65	72	1	ppb	97.313	97.313	0.09
Zn	66	72	1	ppb	96.820	96.820	0.29
Zn	66	72	2	ppb	99.717	99.717	0.67
Zn	68	72	1	ppb	95.967	95.967	0.11
As	75	72	1	ppb	93.389	93.389	1.35
As	75	72	2	ppb	98.960	98.960	0.77
Se	78	72	1	ppb	93.209	93.209	0.83
Se	78	72	2	ppb	96.352	96.352	4.08
Se	82	72	1	ppb	95.763	95.763	1.55
Sr	88	72	1	ppb	96.445	96.445	0.46
Mo	95	72	1	ppb	94.947	94.947	0.59
Mo	97	72	1	ppb	94.850	94.850	1.24
Rh	103	115	1	ppb	19.441	19.441	132.85
Pd	105	115	1	ppb	68.988	68.988	52.43
Ag	107	72	1	ppb	100.921	100.921	0.28
Ag	109	72	1	ppb	100.745	100.745	0.71
Cd	111	115	1	ppb	94.816	94.816	1.84

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	94.728	94.728	1.70
Sn	118	72	1	ppb	95.098	95.098	0.48
Sn	119	72	1	ppb	95.236	95.236	0.39
Sb	121	72	1	ppb	101.049	101.049	0.45
Sb	121	72	2	ppb	99.344	99.344	0.62
Sb	123	72	1	ppb	101.409	101.409	0.21
Ba	135	115	1	ppb	94.980	94.980	1.11
Ba	137	115	1	ppb	94.291	94.291	2.28
W	182	209	1	ppb	57.919	57.919	18.17
Pt	195	209	1	ppb	98.043	98.043	1106.57
Au	197	209	1	ppb	-207.718	-207.718	-242.80
Tl	203	209	1	ppb	100.145	100.145	1.07
Tl	205	209	1	ppb	100.659	100.659	1.46
Pb	206	209	1	ppb	94.868	94.868	0.74
Pb	207	209	1	ppb	95.389	95.389	0.94
Pb	208	209	1	ppb	92.548	92.548	0.84
U	238	209	1	ppb	101.290	101.290	0.82

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	320,516	0.72	380768	84.2	70	125	
1	Ge	72	2,067,658	0.12	2215061	93.3	70	125	
2	Ge	72	262,165	0.82	282811	92.7	70	125	
1	In	115	2,149,051	1.82	2296992	93.6	70	125	
1	Bi	209	2,058,651	0.71	2220153	92.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	014SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 13:03
Sample Name	ICSA	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.870	0.870	7.09
Be	9	6	1	ppb	0.039	0.039	35.47
B	11	6	1	ppb	25.071	25.071	17.33
Na	23	72	1	ppb	94283.427	94283.427	0.96
Na	23	72	2	ppb	99689.981	99689.981	0.67
Mg	24	72	1	ppb	93803.608	93803.608	0.96
Al	27	72	1	ppb	86882.180	86882.180	0.97
P	31	72	1	ppb	92243.305	92243.305	0.76
K	39	72	1	ppb	94763.508	94763.508	0.77
Ca	44	72	1	ppb	93080.551	93080.551	1.00
Ca	44	72	2	ppb	94471.932	94471.932	1.81
Ti	47	72	1	ppb	1935.628	1935.628	0.97
Ti	47	72	2	ppb	2031.693	2031.693	1.30
V	51	72	1	ppb	-13.389	-13.389	-3.58
V	51	72	2	ppb	-0.300	-0.300	-13.00
Cr	52	72	1	ppb	1.483	1.483	2.26
Cr	52	72	2	ppb	1.313	1.313	1.61
Mn	55	72	1	ppb	0.127	0.127	96.82
Mn	55	72	2	ppb	0.210	0.210	14.89
Fe	56	72	1	ppb	92958.443	92958.443	1.01
Fe	56	72	2	ppb	98000.553	98000.553	0.85
Co	59	72	1	ppb	0.104	0.104	3.38
Co	59	72	2	ppb	0.050	0.050	28.02
Ni	60	72	1	ppb	0.507	0.507	8.49
Ni	60	72	2	ppb	0.148	0.148	18.21
Cu	63	72	1	ppb	1.166	1.166	1.92
Cu	63	72	2	ppb	0.486	0.486	17.63
Cu	65	72	1	ppb	1.116	1.116	13.22
Zn	66	72	1	ppb	1.651	1.651	5.31
Zn	66	72	2	ppb	0.198	0.198	51.01
Zn	68	72	1	ppb	0.413	0.413	11.98
As	75	72	1	ppb	-3.927	-3.927	-20.13
As	75	72	2	ppb	0.130	0.130	9.01
Se	78	72	1	ppb	2.385	2.385	23.37
Se	78	72	2	ppb	0.582	0.582	21.03
Se	82	72	1	ppb	0.081	0.081	278.70
Sr	88	72	1	ppb	0.855	0.855	4.76
Mo	95	72	1	ppb	1919.181	1919.181	1.14
Mo	97	72	1	ppb	1916.578	1916.578	1.21
Rh	103	115	1	ppb	-50.302	-50.302	-17.59
Pd	105	115	1	ppb	65.803	65.803	36.27
Ag	107	72	1	ppb	0.140	0.140	14.57
Ag	109	72	1	ppb	0.132	0.132	2.00
Cd	111	115	1	ppb	0.739	0.739	7.59

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.490	0.490	5.10
Sn	118	72	1	ppb	0.244	0.244	10.82
Sn	119	72	1	ppb	0.247	0.247	19.19
Sb	121	72	1	ppb	0.380	0.380	1.55
Sb	121	72	2	ppb	0.385	0.385	10.40
Sb	123	72	1	ppb	0.383	0.383	4.00
Ba	135	115	1	ppb	0.050	0.050	60.57
Ba	137	115	1	ppb	0.055	0.055	72.58
W	182	209	1	ppb	302.678	302.678	4.41
Pt	195	209	1	ppb	-68.556	-68.556	-971.79
Au	197	209	1	ppb	-11.546	-11.546	-2219.97
Tl	203	209	1	ppb	1.075	1.075	8.72
Tl	205	209	1	ppb	1.032	1.032	10.89
Pb	206	209	1	ppb	0.103	0.103	111.25
Pb	207	209	1	ppb	0.117	0.117	73.04
Pb	208	209	1	ppb	0.107	0.107	94.84
U	238	209	1	ppb	0.021	0.021	38.00

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	326,751	1.19	380768	85.8	70	125	
1	Ge	72	2,031,367	0.26	2215061	91.7	70	125	
2	Ge	72	259,730	0.80	282811	91.8	70	125	
1	In	115	2,044,046	0.38	2296992	89.0	70	125	
1	Bi	209	1,971,565	0.44	2220153	88.8	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	015SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 13:07
Sample Name	ICSAB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	99.884	99.884	1.12
Be	9	6	1	ppb	99.755	99.755	2.02
B	11	6	1	ppb	534.063	534.063	1.04
Na	23	72	1	ppb	108404.617	108404.617	1.47
Na	23	72	2	ppb	111356.630	111356.630	0.58
Mg	24	72	1	ppb	107729.343	107729.343	1.80
Al	27	72	1	ppb	91020.614	91020.614	1.62
P	31	72	1	ppb	95564.269	95564.269	1.81
K	39	72	1	ppb	107820.873	107820.873	1.96
Ca	44	72	1	ppb	106422.802	106422.802	1.41
Ca	44	72	2	ppb	105124.500	105124.500	0.44
Ti	47	72	1	ppb	2115.001	2115.001	0.95
Ti	47	72	2	ppb	2153.964	2153.964	0.31
V	51	72	1	ppb	89.887	89.887	3.08
V	51	72	2	ppb	97.544	97.544	0.71
Cr	52	72	1	ppb	93.659	93.659	1.76
Cr	52	72	2	ppb	96.497	96.497	0.92
Mn	55	72	1	ppb	93.462	93.462	2.49
Mn	55	72	2	ppb	95.796	95.796	0.59
Fe	56	72	1	ppb	106343.934	106343.934	1.88
Fe	56	72	2	ppb	108881.702	108881.702	0.49
Co	59	72	1	ppb	94.776	94.776	1.63
Co	59	72	2	ppb	97.124	97.124	1.17
Ni	60	72	1	ppb	94.190	94.190	1.55
Ni	60	72	2	ppb	96.349	96.349	0.54
Cu	63	72	1	ppb	90.677	90.677	2.03
Cu	63	72	2	ppb	93.792	93.792	0.52
Cu	65	72	1	ppb	94.094	94.094	1.92
Zn	66	72	1	ppb	96.364	96.364	2.40
Zn	66	72	2	ppb	96.627	96.627	0.24
Zn	68	72	1	ppb	95.408	95.408	2.34
As	75	72	1	ppb	92.734	92.734	3.54
As	75	72	2	ppb	98.706	98.706	1.02
Se	78	72	1	ppb	98.663	98.663	3.77
Se	78	72	2	ppb	96.806	96.806	4.13
Se	82	72	1	ppb	94.680	94.680	0.58
Sr	88	72	1	ppb	95.604	95.604	0.81
Mo	95	72	1	ppb	2097.043	2097.043	0.88
Mo	97	72	1	ppb	2100.055	2100.055	1.56
Rh	103	115	1	ppb	-21.423	-21.423	-86.84
Pd	105	115	1	ppb	139.136	139.136	9.22
Ag	107	72	1	ppb	93.895	93.895	1.37
Ag	109	72	1	ppb	93.774	93.774	1.32
Cd	111	115	1	ppb	94.908	94.908	2.22

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	94.536	94.536	2.26
Sn	118	72	1	ppb	93.541	93.541	1.34
Sn	119	72	1	ppb	93.775	93.775	1.40
Sb	121	72	1	ppb	100.768	100.768	1.80
Sb	121	72	2	ppb	97.315	97.315	0.12
Sb	123	72	1	ppb	100.893	100.893	1.53
Ba	135	115	1	ppb	94.969	94.969	2.19
Ba	137	115	1	ppb	94.743	94.743	2.80
W	182	209	1	ppb	331.641	331.641	10.38
Pt	195	209	1	ppb	-1582.446	-1582.446	-86.54
Au	197	209	1	ppb	378.602	378.602	60.63
Tl	203	209	1	ppb	91.301	91.301	3.36
Tl	205	209	1	ppb	88.076	88.076	7.22
Pb	206	209	1	ppb	93.809	93.809	2.52
Pb	207	209	1	ppb	93.960	93.960	3.27
Pb	208	209	1	ppb	91.191	91.191	2.96
U	238	209	1	ppb	102.240	102.240	2.97

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	312,423	2.05	380768	82.1	70	125	
1	Ge	72	2,037,188	1.99	2215061	92.0	70	125	
2	Ge	72	267,261	0.39	282811	94.5	70	125	
1	In	115	2,062,130	2.67	2296992	89.8	70	125	
1	Bi	209	1,940,093	3.00	2220153	87.4	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	022SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 13:41
Sample Name	HS17041053-11	**Sample Type**	Sample
Total Dilution	10.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	6.981	69.809	18.70
Be	9	6	1	ppb	1.040	10.399	89.29
B	11	6	1	ppb	13.917	139.171	79.27
Na	23	72	1	ppb	65.029	650.291	49.23
Na	23	72	2	ppb	65.192	651.917	35.47
Mg	24	72	1	ppb	3768.485	37684.853	11.39
Al	27	72	1	ppb	7521.948	75219.478	18.67
P	31	72	1	ppb	256.558	2565.584	15.82
K	39	72	1	ppb	2311.235	23112.352	19.82
Ca	44	72	1	ppb	5150.285	51502.847	19.08
Ca	44	72	2	ppb	5353.060	53530.599	7.05
Ti	47	72	1	ppb	229.445	2294.453	20.67
Ti	47	72	2	ppb	243.910	2439.098	20.41
V	51	72	1	ppb	8.807	88.070	161.22
V	51	72	2	ppb	19.857	198.569	26.84
Cr	52	72	1	ppb	8.119	81.186	13.74
Cr	52	72	2	ppb	8.709	87.090	19.47
Mn	55	72	1	ppb	278.437	2784.372	19.77
Mn	55	72	2	ppb	291.129	2911.285	10.79
Fe	56	72	1	ppb	13920.768	139207.680	18.52
Fe	56	72	2	ppb	14479.325	144793.254	11.27
Co	59	72	1	ppb	6.000	59.998	19.63
Co	59	72	2	ppb	6.442	64.416	30.76
Ni	60	72	1	ppb	12.642	126.425	10.09
Ni	60	72	2	ppb	13.287	132.870	7.82
Cu	63	72	1	ppb	37.891	378.911	20.02
Cu	63	72	2	ppb	40.863	408.635	14.52
Cu	65	72	1	ppb	39.383	393.828	20.16
Zn	66	72	1	ppb	59.887	598.867	22.34
Zn	66	72	2	ppb	61.023	610.228	12.75
Zn	68	72	1	ppb	59.794	597.942	20.05
As	75	72	1	ppb	2.514	25.144	449.76
As	75	72	2	ppb	5.617	56.166	41.49
Se	78	72	1	ppb	-0.260	-2.604	-4251.92
Se	78	72	2	ppb	1.887	18.870	309.77
Se	82	72	1	ppb	0.617	6.173	132.97
Sr	88	72	1	ppb	35.437	354.368	18.33
Mo	95	72	1	ppb	0.377	3.774	34.40
Mo	97	72	1	ppb	0.370	3.704	36.80
Rh	103	115	1	ppb	115.227	1152.274	89.38
Pd	105	115	1	ppb	181.680	1816.805	237.43
Ag	107	72	1	ppb	0.089	0.892	31.03
Ag	109	72	1	ppb	0.079	0.791	41.73
Cd	111	115	1	ppb	0.400	4.001	65.71

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.413	4.131	23.54
Sn	118	72	1	ppb	1.144	11.443	21.12
Sn	119	72	1	ppb	1.105	11.046	102.41
Sb	121	72	1	ppb	8.806	88.062	24.98
Sb	121	72	2	ppb	8.673	86.731	10.02
Sb	123	72	1	ppb	8.840	88.403	17.25
Ba	135	115	1	ppb	75.487	754.868	18.54
Ba	137	115	1	ppb	75.178	751.778	23.44
W	182	209	1	ppb	590.679	5906.786	43.38
Pt	195	209	1	ppb	-787.593	-7875.931	-1980.62
Au	197	209	1	ppb	279.622	2796.218	787.57
Tl	203	209	1	ppb	0.474	4.744	365.79
Tl	205	209	1	ppb	0.424	4.243	378.52
Pb	206	209	1	ppb	598.551	5985.509	25.10
Pb	207	209	1	ppb	571.650	5716.505	20.53
Pb	208	209	1	ppb	568.405	5684.053	20.77
U	238	209	1	ppb	0.378	3.782	32.82

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	363,239	1.99	380768	95.4	70	125	
1	Ge	72	2,194,230	1.69	2215061	99.1	70	125	
2	Ge	72	274,612	1.04	282811	97.1	70	125	
1	In	115	2,301,788	2.75	2296992	100.2	70	125	
1	Bi	209	2,230,892	2.21	2220153	100.5	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	023SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 13:46
Sample Name	HS17041053-12	**Sample Type**	Sample
Total Dilution	10.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	5.443	54.433	18.43
Be	9	6	1	ppb	0.873	8.725	55.51
B	11	6	1	ppb	10.272	102.721	92.31
Na	23	72	1	ppb	57.711	577.113	21.86
Na	23	72	2	ppb	62.279	622.795	29.79
Mg	24	72	1	ppb	3102.578	31025.778	26.75
Al	27	72	1	ppb	5893.081	58930.815	23.78
P	31	72	1	ppb	231.772	2317.722	30.91
K	39	72	1	ppb	1721.818	17218.184	34.79
Ca	44	72	1	ppb	4583.758	45837.577	16.27
Ca	44	72	2	ppb	4841.719	48417.194	12.37
Ti	47	72	1	ppb	190.923	1909.226	27.87
Ti	47	72	2	ppb	205.490	2054.896	24.13
V	51	72	1	ppb	2.662	26.618	160.20
V	51	72	2	ppb	14.998	149.982	14.83
Cr	52	72	1	ppb	6.300	62.998	18.98
Cr	52	72	2	ppb	6.858	68.576	17.91
Mn	55	72	1	ppb	235.514	2355.138	28.09
Mn	55	72	2	ppb	246.605	2466.053	5.65
Fe	56	72	1	ppb	10998.485	109984.850	23.93
Fe	56	72	2	ppb	11572.984	115729.836	4.13
Co	59	72	1	ppb	4.408	44.082	35.28
Co	59	72	2	ppb	4.755	47.554	7.75
Ni	60	72	1	ppb	8.301	83.015	32.55
Ni	60	72	2	ppb	8.729	87.292	37.13
Cu	63	72	1	ppb	21.466	214.665	30.34
Cu	63	72	2	ppb	23.386	233.864	5.26
Cu	65	72	1	ppb	22.467	224.669	27.58
Zn	66	72	1	ppb	50.212	502.125	38.09
Zn	66	72	2	ppb	51.691	516.908	8.97
Zn	68	72	1	ppb	49.699	496.993	32.53
As	75	72	1	ppb	0.455	4.547	1128.32
As	75	72	2	ppb	4.871	48.711	15.64
Se	78	72	1	ppb	-0.452	-4.516	-2538.23
Se	78	72	2	ppb	1.286	12.856	498.59
Se	82	72	1	ppb	0.642	6.424	307.52
Sr	88	72	1	ppb	29.112	291.118	28.05
Mo	95	72	1	ppb	0.267	2.673	28.18
Mo	97	72	1	ppb	0.294	2.939	207.81
Rh	103	115	1	ppb	75.719	757.191	280.36
Pd	105	115	1	ppb	136.377	1363.766	104.70
Ag	107	72	1	ppb	0.064	0.644	81.88
Ag	109	72	1	ppb	0.060	0.602	146.63
Cd	111	115	1	ppb	0.401	4.007	59.75

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.390	3.905	75.24
Sn	118	72	1	ppb	1.155	11.553	20.93
Sn	119	72	1	ppb	1.100	10.999	52.93
Sb	121	72	1	ppb	3.897	38.966	28.81
Sb	121	72	2	ppb	3.765	37.647	21.08
Sb	123	72	1	ppb	3.869	38.693	21.59
Ba	135	115	1	ppb	61.836	618.363	10.32
Ba	137	115	1	ppb	62.071	620.712	18.60
W	182	209	1	ppb	217.547	2175.474	60.09
Pt	195	209	1	ppb	489.336	4893.361	1914.36
Au	197	209	1	ppb	0.202	2.020	2767804.72
Tl	203	209	1	ppb	0.174	1.739	650.55
Tl	205	209	1	ppb	0.167	1.672	681.21
Pb	206	209	1	ppb	396.739	3967.392	26.80
Pb	207	209	1	ppb	374.161	3741.614	32.50
Pb	208	209	1	ppb	372.706	3727.063	26.44
U	238	209	1	ppb	0.283	2.828	31.78

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	364,061	2.06	380768	95.6	70	125	
1	Ge	72	2,206,348	2.77	2215061	99.6	70	125	
2	Ge	72	274,536	0.33	282811	97.1	70	125	
1	In	115	2,288,042	1.65	2296992	99.6	70	125	
1	Bi	209	2,231,332	2.50	2220153	100.5	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	024SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 13:50
Sample Name	HS17041053-13	**Sample Type**	Sample
Total Dilution	10.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	6.791	67.906	10.05
Be	9	6	1	ppb	1.051	10.508	28.69
B	11	6	1	ppb	8.489	84.893	62.39
Na	23	72	1	ppb	55.779	557.787	87.38
Na	23	72	2	ppb	56.979	569.789	30.37
Mg	24	72	1	ppb	3601.972	36019.723	31.59
Al	27	72	1	ppb	7698.929	76989.289	33.58
P	31	72	1	ppb	358.519	3585.186	41.54
K	39	72	1	ppb	2684.336	26843.359	37.90
Ca	44	72	1	ppb	4234.854	42348.542	38.96
Ca	44	72	2	ppb	4335.559	43355.589	7.67
Ti	47	72	1	ppb	232.773	2327.728	35.92
Ti	47	72	2	ppb	244.955	2449.552	18.64
V	51	72	1	ppb	9.088	90.884	312.43
V	51	72	2	ppb	18.714	187.140	11.15
Cr	52	72	1	ppb	8.092	80.924	45.00
Cr	52	72	2	ppb	8.499	84.989	19.38
Mn	55	72	1	ppb	277.880	2778.796	39.18
Mn	55	72	2	ppb	284.887	2848.871	10.25
Fe	56	72	1	ppb	13470.605	134706.045	33.67
Fe	56	72	2	ppb	13838.468	138384.680	2.03
Co	59	72	1	ppb	5.090	50.904	39.37
Co	59	72	2	ppb	5.452	54.525	3.22
Ni	60	72	1	ppb	10.317	103.173	30.78
Ni	60	72	2	ppb	10.363	103.629	19.86
Cu	63	72	1	ppb	32.364	323.637	33.16
Cu	63	72	2	ppb	34.409	344.091	5.69
Cu	65	72	1	ppb	33.552	335.522	31.91
Zn	66	72	1	ppb	62.909	629.092	39.10
Zn	66	72	2	ppb	63.080	630.795	7.40
Zn	68	72	1	ppb	63.040	630.400	27.09
As	75	72	1	ppb	1.875	18.752	1319.47
As	75	72	2	ppb	4.198	41.985	51.19
Se	78	72	1	ppb	0.478	4.785	2576.93
Se	78	72	2	ppb	1.702	17.016	212.01
Se	82	72	1	ppb	0.832	8.323	207.48
Sr	88	72	1	ppb	20.374	203.736	37.68
Mo	95	72	1	ppb	0.370	3.705	91.05
Mo	97	72	1	ppb	0.392	3.924	10.57
Rh	103	115	1	ppb	18.238	182.382	739.37
Pd	105	115	1	ppb	165.390	1653.904	208.88
Ag	107	72	1	ppb	0.083	0.834	121.45
Ag	109	72	1	ppb	0.066	0.665	164.58
Cd	111	115	1	ppb	0.432	4.321	43.61

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.471	4.710	39.92
Sn	118	72	1	ppb	1.053	10.525	42.99
Sn	119	72	1	ppb	1.079	10.792	64.36
Sb	121	72	1	ppb	1.447	14.471	44.82
Sb	121	72	2	ppb	1.402	14.023	39.60
Sb	123	72	1	ppb	1.444	14.437	54.54
Ba	135	115	1	ppb	77.856	778.560	29.59
Ba	137	115	1	ppb	77.533	775.335	30.50
W	182	209	1	ppb	111.815	1118.154	91.33
Pt	195	209	1	ppb	428.849	4288.495	1952.44
Au	197	209	1	ppb	454.754	4547.541	743.35
Tl	203	209	1	ppb	0.086	0.862	692.55
Tl	205	209	1	ppb	0.081	0.813	897.88
Pb	206	209	1	ppb	318.613	3186.125	45.76
Pb	207	209	1	ppb	294.889	2948.891	49.23
Pb	208	209	1	ppb	295.140	2951.399	38.07
U	238	209	1	ppb	0.332	3.323	37.95

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	355,990	1.71	380768	93.5	70	125	
1	Ge	72	2,133,574	3.73	2215061	96.3	70	125	
2	Ge	72	274,151	0.13	282811	96.9	70	125	
1	In	115	2,201,036	3.33	2296992	95.8	70	125	
1	Bi	209	2,130,753	3.71	2220153	96.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	026SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 13:59
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	106.154	106.154	8.15
Be	9	6	1	ppb	105.728	105.728	8.15
B	11	6	1	ppb	522.511	522.511	5.64
Na	23	72	1	ppb	10099.923	10099.923	8.37
Na	23	72	2	ppb	10199.267	10199.267	0.98
Mg	24	72	1	ppb	10092.828	10092.828	8.36
Al	27	72	1	ppb	100.822	100.822	10.54
P	31	72	1	ppb	497.587	497.587	8.59
K	39	72	1	ppb	10109.260	10109.260	7.91
Ca	44	72	1	ppb	9986.250	9986.250	8.71
Ca	44	72	2	ppb	10059.119	10059.119	1.40
Ti	47	72	1	ppb	100.592	100.592	9.66
Ti	47	72	2	ppb	99.639	99.639	1.26
V	51	72	1	ppb	103.442	103.442	12.20
V	51	72	2	ppb	100.728	100.728	0.90
Cr	52	72	1	ppb	102.753	102.753	8.67
Cr	52	72	2	ppb	99.964	99.964	0.65
Mn	55	72	1	ppb	101.556	101.556	7.68
Mn	55	72	2	ppb	100.199	100.199	0.22
Fe	56	72	1	ppb	10075.805	10075.805	7.47
Fe	56	72	2	ppb	10093.051	10093.051	0.59
Co	59	72	1	ppb	101.803	101.803	7.50
Co	59	72	2	ppb	101.703	101.703	1.42
Ni	60	72	1	ppb	101.101	101.101	8.02
Ni	60	72	2	ppb	101.527	101.527	2.00
Cu	63	72	1	ppb	97.227	97.227	7.52
Cu	63	72	2	ppb	100.685	100.685	1.11
Cu	65	72	1	ppb	101.148	101.148	7.31
Zn	66	72	1	ppb	101.306	101.306	8.16
Zn	66	72	2	ppb	98.787	98.787	1.70
Zn	68	72	1	ppb	101.054	101.054	8.20
As	75	72	1	ppb	100.462	100.462	11.11
As	75	72	2	ppb	99.918	99.918	1.50
Se	78	72	1	ppb	102.369	102.369	12.30
Se	78	72	2	ppb	97.213	97.213	2.53
Se	82	72	1	ppb	100.374	100.374	8.27
Sr	88	72	1	ppb	100.624	100.624	8.12
Mo	95	72	1	ppb	99.189	99.189	7.57
Mo	97	72	1	ppb	98.935	98.935	6.80
Rh	103	115	1	ppb	-15.261	-15.261	-123.36
Pd	105	115	1	ppb	48.540	48.540	97.91
Ag	107	72	1	ppb	106.443	106.443	7.13
Ag	109	72	1	ppb	106.110	106.110	7.48
Cd	111	115	1	ppb	100.082	100.082	8.03

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	99.844	99.844	8.08
Sn	118	72	1	ppb	99.207	99.207	7.57
Sn	119	72	1	ppb	99.767	99.767	8.50
Sb	121	72	1	ppb	106.330	106.330	7.42
Sb	121	72	2	ppb	99.929	99.929	1.12
Sb	123	72	1	ppb	106.261	106.261	7.79
Ba	135	115	1	ppb	99.537	99.537	8.76
Ba	137	115	1	ppb	99.740	99.740	8.74
W	182	209	1	ppb	15.234	15.234	10.58
Pt	195	209	1	ppb	-1407.932	-1407.932	-71.09
Au	197	209	1	ppb	391.613	391.613	122.90
Tl	203	209	1	ppb	103.676	103.676	6.24
Tl	205	209	1	ppb	104.551	104.551	5.82
Pb	206	209	1	ppb	99.145	99.145	8.75
Pb	207	209	1	ppb	99.325	99.325	8.41
Pb	208	209	1	ppb	96.420	96.420	8.47
U	238	209	1	ppb	104.996	104.996	7.40

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	313,581	7.76	380768	82.4	70	125	
1	Ge	72	2,035,681	7.46	2215061	91.9	70	125	
2	Ge	72	268,482	1.05	282811	94.9	70	125	
1	In	115	2,105,820	7.61	2296992	91.7	70	125	
1	Bi	209	2,013,427	7.70	2220153	90.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**027CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 14:04**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.25	28.94	ppb	2.5	
Be	9	6	1	0.06	7.16	ppb	1	
B	11	6	1	14.60	4.49	ppb	5	>2.2*DL
Na	23	72	1	3.79	40.35	ppb	250	
Na	23	72	2	2.52	47.28	ppb	250	
Mg	24	72	1	5.30	26.99	ppb	250	
Al	27	72	1	3.86	46.52	ppb	5	
P	31	72	1	-4.72	-25.20	ppb	5	
K	39	72	1	-7.15	-65.25	ppb	250	
Ca	44	72	1	-157.12	-6.46	ppb	250	
Ca	44	72	2	12.44	78.30	ppb	250	
Ti	47	72	1	0.05	44.29	ppb	2.5	
Ti	47	72	2	0.40	29.15	ppb	2.5	
V	51	72	1	-0.47	-169.38	ppb	2.5	
V	51	72	2	-0.03	-221.79	ppb	2.5	
Cr	52	72	1	0.06	88.63	ppb	2.5	
Cr	52	72	2	0.03	67.44	ppb	2.5	
Mn	55	72	1	0.11	78.58	ppb	2.5	
Mn	55	72	2	0.17	20.50	ppb	2.5	
Fe	56	72	1	-11.41	-2.71	ppb	100	
Fe	56	72	2	8.49	2.77	ppb	100	
Co	59	72	1	0.04	8.44	ppb	2.5	
Co	59	72	2	0.05	22.64	ppb	2.5	
Ni	60	72	1	0.07	44.30	ppb	2.5	
Ni	60	72	2	0.11	19.23	ppb	2.5	
Cu	63	72	1	-0.13	-7.97	ppb	2.5	
Cu	63	72	2	-0.06	-6.77	ppb	2.5	
Cu	65	72	1	-0.14	-24.63	ppb	2.5	
Zn	66	72	1	0.63	11.78	ppb	2.5	
Zn	66	72	2	-0.13	-12.29	ppb	2.5	
Zn	68	72	1	0.14	72.04	ppb	2.5	
As	75	72	1	-0.67	-163.70	ppb	2.5	
As	75	72	2	0.08	25.88	ppb	2.5	
Se	78	72	1	-1.18	-38.21	ppb	2.5	
Se	78	72	2	0.11	377.60	ppb	2.5	
Se	82	72	1	-0.25	-101.90	ppb	2.5	
Sr	88	72	1	0.07	33.04	ppb	2.5	
Mo	95	72	1	0.11	15.78	ppb	2.5	
Mo	97	72	1	0.13	22.43	ppb	2.5	
Ag	107	72	1	0.07	2.09	ppb	2.5	
Ag	109	72	1	0.07	4.39	ppb	2.5	
Cd	111	115	1	0.03	22.43	ppb	2.5	
Cd	114	115	1	0.05	14.24	ppb	2.5	
Sn	118	72	1	0.14	19.88	ppb	2.5	
Sn	119	72	1	0.14	25.20	ppb	2.5	
Sb	121	72	1	0.25	5.90	ppb	2.5	
Sb	121	72	2	0.23	8.36	ppb	2.5	
Sb	123	72	1	0.26	3.83	ppb	2.5	
Ba	135	115	1	0.05	23.56	ppb	2.5	
Ba	137	115	1	0.04	78.30	ppb	2.5	
Tl	203	209	1	1.00	13.33	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.94	12.14	ppb	2.5	
Pb	206	209	1	0.07	125.23	ppb	2.5	
Pb	207	209	1	0.07	102.93	ppb	2.5	
Pb	208	209	1	0.07	106.00	ppb	2.5	
U	238	209	1	0.03	12.10	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	399209	2.19	380768	104.8	70	125	
Ge	72	1	2264483	1.06	2215061	102.2	70	125	
Ge	72	2	282366	0.53	282811	99.8	70	125	
In	115	1	2385039	1.95	2296992	103.8	70	125	
Bi	209	1	2267232	2.49	2220153	102.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**039CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 14:58**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	**(b) (6) ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.16	32.50	ppb	2.5	
Be	9	6	1	0.06	13.26	ppb	1	
B	11	6	1	11.09	5.92	ppb	5	>2.2*DL
Na	23	72	1	2.37	45.17	ppb	250	
Na	23	72	2	1.26	39.10	ppb	250	
Mg	24	72	1	6.28	16.34	ppb	250	
Al	27	72	1	4.13	35.82	ppb	5	
P	31	72	1	-3.51	-32.09	ppb	5	
K	39	72	1	3.25	244.33	ppb	250	
Ca	44	72	1	-185.58	-3.85	ppb	250	
Ca	44	72	2	9.97	18.78	ppb	250	
Ti	47	72	1	0.06	164.27	ppb	2.5	
Ti	47	72	2	0.06	150.74	ppb	2.5	
V	51	72	1	-11.85	-1.52	ppb	2.5	
V	51	72	2	-0.22	-15.72	ppb	2.5	
Cr	52	72	1	-0.23	-12.78	ppb	2.5	
Cr	52	72	2	0.07	11.39	ppb	2.5	
Mn	55	72	1	0.06	143.84	ppb	2.5	
Mn	55	72	2	0.19	22.21	ppb	2.5	
Fe	56	72	1	-6.85	-21.02	ppb	100	
Fe	56	72	2	9.81	1.58	ppb	100	
Co	59	72	1	0.05	13.16	ppb	2.5	
Co	59	72	2	0.06	8.65	ppb	2.5	
Ni	60	72	1	0.06	25.82	ppb	2.5	
Ni	60	72	2	0.11	24.26	ppb	2.5	
Cu	63	72	1	-0.11	-25.22	ppb	2.5	
Cu	63	72	2	-0.08	-12.47	ppb	2.5	
Cu	65	72	1	-0.15	-12.76	ppb	2.5	
Zn	66	72	1	0.72	4.53	ppb	2.5	
Zn	66	72	2	-0.07	-69.42	ppb	2.5	
Zn	68	72	1	0.21	33.68	ppb	2.5	
As	75	72	1	-4.73	-9.77	ppb	2.5	
As	75	72	2	0.06	10.50	ppb	2.5	
Se	78	72	1	-1.94	-48.43	ppb	2.5	
Se	78	72	2	0.27	79.95	ppb	2.5	
Se	82	72	1	0.04	175.71	ppb	2.5	
Sr	88	72	1	0.09	25.56	ppb	2.5	
Mo	95	72	1	0.13	16.06	ppb	2.5	
Mo	97	72	1	0.14	28.39	ppb	2.5	
Ag	107	72	1	0.08	2.85	ppb	2.5	
Ag	109	72	1	0.08	1.75	ppb	2.5	
Cd	111	115	1	0.06	26.44	ppb	2.5	
Cd	114	115	1	0.05	13.97	ppb	2.5	
Sn	118	72	1	0.10	17.32	ppb	2.5	
Sn	119	72	1	0.13	33.86	ppb	2.5	
Sb	121	72	1	0.29	8.66	ppb	2.5	
Sb	121	72	2	0.27	5.20	ppb	2.5	
Sb	123	72	1	0.30	5.88	ppb	2.5	
Ba	135	115	1	0.06	36.70	ppb	2.5	
Ba	137	115	1	0.06	19.79	ppb	2.5	
Tl	203	209	1	0.88	10.10	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	0.83	11.74	ppb	2.5	
Pb	206	209	1	0.10	77.94	ppb	2.5	
Pb	207	209	1	0.10	47.12	ppb	2.5	
Pb	208	209	1	0.09	69.03	ppb	2.5	
U	238	209	1	0.04	11.48	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	390696	2.34	380768	102.6	70	125	
Ge	72	1	2173699	2.07	2215061	98.1	70	125	
Ge	72	2	276397	0.23	282811	97.7	70	125	
In	115	1	2329258	2.56	2296992	101.4	70	125	
Bi	209	1	2194586	2.07	2220153	98.8	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	040SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 15:03
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	100.422	100.422	0.62
Be	9	6	1	ppb	100.402	100.402	0.95
B	11	6	1	ppb	484.665	484.665	4.52
Na	23	72	1	ppb	9615.200	9615.200	0.93
Na	23	72	2	ppb	10130.455	10130.455	1.14
Mg	24	72	1	ppb	9555.901	9555.901	1.68
Al	27	72	1	ppb	92.150	92.150	1.88
P	31	72	1	ppb	468.886	468.886	0.79
K	39	72	1	ppb	9462.301	9462.301	1.15
Ca	44	72	1	ppb	9339.537	9339.537	1.24
Ca	44	72	2	ppb	9804.355	9804.355	0.75
Ti	47	72	1	ppb	94.259	94.259	1.51
Ti	47	72	2	ppb	104.331	104.331	5.00
V	51	72	1	ppb	88.424	88.424	2.53
V	51	72	2	ppb	99.630	99.630	0.98
Cr	52	72	1	ppb	96.709	96.709	1.76
Cr	52	72	2	ppb	100.009	100.009	0.63
Mn	55	72	1	ppb	95.490	95.490	0.48
Mn	55	72	2	ppb	100.426	100.426	0.89
Fe	56	72	1	ppb	9500.828	9500.828	1.53
Fe	56	72	2	ppb	10075.802	10075.802	0.75
Co	59	72	1	ppb	96.952	96.952	1.34
Co	59	72	2	ppb	100.427	100.427	0.54
Ni	60	72	1	ppb	95.796	95.796	1.43
Ni	60	72	2	ppb	101.373	101.373	1.14
Cu	63	72	1	ppb	91.598	91.598	1.08
Cu	63	72	2	ppb	100.358	100.358	0.52
Cu	65	72	1	ppb	95.413	95.413	0.63
Zn	66	72	1	ppb	95.625	95.625	0.53
Zn	66	72	2	ppb	100.055	100.055	0.42
Zn	68	72	1	ppb	95.722	95.722	0.63
As	75	72	1	ppb	91.435	91.435	1.45
As	75	72	2	ppb	99.530	99.530	0.55
Se	78	72	1	ppb	92.630	92.630	2.93
Se	78	72	2	ppb	97.903	97.903	1.06
Se	82	72	1	ppb	95.884	95.884	1.60
Sr	88	72	1	ppb	97.006	97.006	2.26
Mo	95	72	1	ppb	95.466	95.466	2.30
Mo	97	72	1	ppb	95.524	95.524	2.29
Rh	103	115	1	ppb	-31.121	-31.121	-45.28
Pd	105	115	1	ppb	96.795	96.795	40.38
Ag	107	72	1	ppb	102.253	102.253	1.88
Ag	109	72	1	ppb	101.598	101.598	2.13
Cd	111	115	1	ppb	93.873	93.873	0.83

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	93.730	93.730	0.93
Sn	118	72	1	ppb	96.404	96.404	1.07
Sn	119	72	1	ppb	96.497	96.497	1.24
Sb	121	72	1	ppb	103.138	103.138	1.74
Sb	121	72	2	ppb	100.130	100.130	0.41
Sb	123	72	1	ppb	103.227	103.227	1.28
Ba	135	115	1	ppb	93.458	93.458	1.48
Ba	137	115	1	ppb	93.901	93.901	0.93
W	182	209	1	ppb	-1.668	-1.668	-669.44
Pt	195	209	1	ppb	336.388	336.388	449.44
Au	197	209	1	ppb	782.113	782.113	52.12
Tl	203	209	1	ppb	98.079	98.079	2.53
Tl	205	209	1	ppb	99.611	99.611	2.36
Pb	206	209	1	ppb	93.815	93.815	0.89
Pb	207	209	1	ppb	93.137	93.137	0.67
Pb	208	209	1	ppb	90.627	90.627	0.64
U	238	209	1	ppb	99.513	99.513	1.21

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	351,880	0.71	380768	92.4	70	125	
1	Ge	72	2,104,130	1.28	2215061	95.0	70	125	
2	Ge	72	269,873	0.76	282811	95.4	70	125	
1	In	115	2,235,426	0.31	2296992	97.3	70	125	
1	Bi	209	2,136,697	0.13	2220153	96.2	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Blank Report

Sample Name	CAL BLK
Data File Name	043CALB.D
DataPath	C:\ICPMH\1\DATA\17D25I00.B
AcqDateTime	4/25/2017 15:23:00
Type	CalBlk
VialNumber	1101
Dilution	1
Comment	
Operator	[redacted] ICPMS04
Current Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	37069	1.25
Be	9	6	1	69	41.71
B	11	6	1	18372	4.22
Na	23	72	1	145386	8.00
Na	23	72	2	5735	4.50
Mg	24	72	1	29541	35.85
Al	27	72	1	55598	33.45
P	31	72	1	23428	6.89
K	39	72	1	3740601	0.32
Ca	44	72	1	67149	7.09
Ca	44	72	2	358	5.99
Ti	47	72	1	199	27.66
Ti	47	72	2	7	50.03
V	51	72	1	563224	4.42
V	51	72	2	933	7.73
Cr	52	72	1	22664	4.51
Cr	52	72	2	589	10.95
Mn	55	72	1	14964	12.06
Mn	55	72	2	154	10.86
Fe	56	72	1	1813791	2.44
Fe	56	72	2	7436	6.37
Co	59	72	1	383	23.64
Co	59	72	2	46	32.99
Ni	60	72	1	154	25.20
Ni	60	72	2	69	26.65
Cu	63	72	1	1569	7.05
Cu	63	72	2	514	5.51
Cu	65	72	1	827	1.85
Zn	66	72	1	1108	17.81
Zn	68	72	1	921	12.83
As	75	72	1	82583	5.86
As	75	72	2	46	36.10
Se	78	72	1	17431	0.41
Se	78	72	2	17	57.56
Se	82	72	1	293	2.30
Sr	88	72	1	1560	33.17
Mo	95	72	1	220	6.61
Mo	97	72	1	203	4.34
Ag	107	72	1	209	7.20
Ag	109	72	1	149	18.09
Cd	111	115	1	27	24.99
Cd	114	115	1	47	18.90
Sn	118	72	1	828	13.90
Sn	119	72	1	331	8.14
Sb	121	72	1	1817	14.92
Sb	121	72	2	404	7.94

Calibration Blank Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	123	72	1	1312	15.38
Ba	135	115	1	171	20.28
Ba	137	115	1	307	23.54
Tl	203	209	1	2441	8.89
Tl	205	209	1	5627	9.20
Pb	206	209	1	1048	45.93
Pb	207	209	1	837	37.23
Pb	208	209	1	4055	46.48

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Li	6	1	387999	2.16
Ge	72	1	2178734	3.34
Ge	72	2	272530	0.07
In	115	1	2313478	2.24
Bi	209	1	2208562	2.42

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	2/10/200
Data File Name	044CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 15:28
Type	CalStd
VialNumber	1102
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	043CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	48428	3.64
Be	9	6	1	5777	0.41
B	11	6	1	30294	1.80
Na	23	72	1	2339279	0.94
Na	23	72	2	62255	0.55
Mg	24	72	1	1653420	1.17
Al	27	72	1	96677	24.24
P	31	72	1	31310	3.44
K	39	72	1	5814232	0.70
Ca	44	72	1	133440	3.73
Ca	44	72	2	1831	4.86
Ti	47	72	1	2195	1.33
Ti	47	72	2	126	11.05
V	51	72	1	592083	3.91
V	51	72	2	4834	2.86
Cr	52	72	1	48050	2.17
Cr	52	72	2	5776	3.58
Mn	55	72	1	49040	3.81
Mn	55	72	2	2727	6.97
Fe	56	72	1	4736417	0.49
Fe	56	72	2	426883	0.75
Co	59	72	1	29202	0.68
Co	59	72	2	7717	1.94
Ni	60	72	1	6608	3.64
Ni	60	72	2	2074	6.84
Cu	63	72	1	17468	2.43
Cu	63	72	2	6052	2.02
Cu	65	72	1	8287	0.76
Zn	66	72	1	6056	0.85
Zn	68	72	1	4437	2.42
As	75	72	1	87402	3.90
As	75	72	2	974	1.91
Se	78	72	1	17861	1.23
Se	78	72	2	57	4.02
Se	82	72	1	585	2.95
Sr	88	72	1	42660	1.12
Mo	95	72	1	7663	4.04
Mo	97	72	1	4891	2.60
Ag	107	72	1	19719	1.44
Ag	109	72	1	19352	1.87
Cd	111	115	1	4360	2.57
Cd	114	115	1	10247	2.03
Sn	118	72	1	12060	3.71
Sn	119	72	1	4620	1.03

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	20316	0.94
Sb	121	72	2	4910	1.10
Sb	123	72	1	15363	0.41
Ba	135	115	1	4195	6.59
Ba	137	115	1	6932	3.42
Tl	203	209	1	15189	6.21
Tl	205	209	1	36344	5.88
Pb	206	209	1	14413	0.82
Pb	207	209	1	13046	1.43
Pb	208	209	1	58262	1.34

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	370655	4.23	387999	95.5	70	125	
Ge	72	1	2077422	6.09	2178734	95.3	70	125	
Ge	72	2	274230	0.10	272530	100.6	70	125	
In	115	1	2193403	3.92	2313478	94.8	70	125	
Bi	209	1	2101199	5.21	2208562	95.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	5/25/500
Data File Name	045CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 15:32
Type	CalStd
VialNumber	1103
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	043CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	68410	0.53
Be	9	6	1	13972	1.52
B	11	6	1	51316	4.37
Na	23	72	1	5518060	0.39
Na	23	72	2	146531	0.65
Mg	24	72	1	4007802	0.98
Al	27	72	1	124681	16.00
P	31	72	1	42370	3.85
K	39	72	1	8993445	0.29
Ca	44	72	1	229431	1.72
Ca	44	72	2	3931	4.06
Ti	47	72	1	5387	3.07
Ti	47	72	2	276	14.18
V	51	72	1	664606	3.87
V	51	72	2	10700	3.21
Cr	52	72	1	87528	1.28
Cr	52	72	2	13106	2.23
Mn	55	72	1	98457	1.84
Mn	55	72	2	6750	1.06
Fe	56	72	1	8956052	0.41
Fe	56	72	2	1046816	0.07
Co	59	72	1	72087	0.55
Co	59	72	2	18792	2.80
Ni	60	72	1	16293	2.02
Ni	60	72	2	5247	1.94
Cu	63	72	1	40121	0.72
Cu	63	72	2	14040	1.61
Cu	65	72	1	19463	2.16
Zn	66	72	1	13515	1.48
Zn	68	72	1	9794	4.71
As	75	72	1	100485	4.78
As	75	72	2	2272	0.97
Se	78	72	1	18862	0.95
Se	78	72	2	140	10.32
Se	82	72	1	1005	6.92
Sr	88	72	1	101040	0.52
Mo	95	72	1	19250	3.12
Mo	97	72	1	11706	0.41
Ag	107	72	1	48967	0.98
Ag	109	72	1	47315	1.90
Cd	111	115	1	10668	3.06
Cd	114	115	1	25699	0.51
Sn	118	72	1	29233	0.57
Sn	119	72	1	11456	4.59

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	47589	0.75
Sb	121	72	2	11589	0.26
Sb	123	72	1	36042	0.98
Ba	135	115	1	9565	2.67
Ba	137	115	1	16337	1.03
Tl	203	209	1	35069	4.47
Tl	205	209	1	83081	4.94
Pb	206	209	1	33850	1.33
Pb	207	209	1	30069	1.22
Pb	208	209	1	135644	1.50

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	379842	1.78	387999	97.9	70	125	
Ge	72	1	2135665	1.99	2178734	98.0	70	125	
Ge	72	2	271299	0.27	272530	99.5	70	125	
In	115	1	2228566	1.72	2313478	96.3	70	125	
Bi	209	1	2140396	0.83	2208562	96.9	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	10/50/1000
Data File Name	046CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 15:37
Type	CalStd
VialNumber	1104
Dilution	1
Comment	
Operator	(b) (6) ICPMS04
ISTDRefDataFileName	043CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	101470	0.82
Be	9	6	1	28953	1.84
B	11	6	1	87209	3.33
Na	23	72	1	11030256	1.25
Na	23	72	2	290934	0.49
Mg	24	72	1	7992138	0.30
Al	27	72	1	161194	12.39
P	31	72	1	61707	2.42
K	39	72	1	14333205	0.47
Ca	44	72	1	389261	0.74
Ca	44	72	2	7650	3.14
Ti	47	72	1	10375	3.65
Ti	47	72	2	571	6.76
V	51	72	1	750259	3.61
V	51	72	2	20321	2.92
Cr	52	72	1	153648	0.28
Cr	52	72	2	25979	0.70
Mn	55	72	1	181724	2.01
Mn	55	72	2	13328	0.38
Fe	56	72	1	16280994	0.53
Fe	56	72	2	2170751	0.35
Co	59	72	1	145147	0.72
Co	59	72	2	37558	1.19
Ni	60	72	1	32460	1.67
Ni	60	72	2	10247	0.18
Cu	63	72	1	81549	0.72
Cu	63	72	2	28033	1.92
Cu	65	72	1	38968	0.64
Zn	66	72	1	25778	2.30
Zn	68	72	1	18283	2.65
As	75	72	1	118354	3.26
As	75	72	2	4431	1.19
Se	78	72	1	20586	0.68
Se	78	72	2	264	18.79
Se	82	72	1	1788	2.42
Sr	88	72	1	201955	0.81
Mo	95	72	1	38070	1.42
Mo	97	72	1	23611	2.06
Ag	107	72	1	99254	1.22
Ag	109	72	1	94758	0.96
Cd	111	115	1	21182	1.21
Cd	114	115	1	51758	1.03
Sn	118	72	1	58540	0.97
Sn	119	72	1	22775	1.45

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	94454	0.74
Sb	121	72	2	22979	1.89
Sb	123	72	1	71896	0.80
Ba	135	115	1	19448	1.15
Ba	137	115	1	33239	0.18
Tl	203	209	1	70304	4.62
Tl	205	209	1	167564	4.91
Pb	206	209	1	68230	0.91
Pb	207	209	1	61152	1.09
Pb	208	209	1	275065	0.58

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	378100	1.80	387999	97.4	70	125	
Ge	72	1	2124568	2.39	2178734	97.5	70	125	
Ge	72	2	269802	0.69	272530	99.0	70	125	
In	115	1	2248632	1.70	2313478	97.2	70	125	
Bi	209	1	2141767	0.63	2208562	97.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	100/500/10K
Data File Name	047CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 15:42
Type	CalStd
VialNumber	1105
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	043CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	635141	0.30
Be	9	6	1	269171	0.55
B	11	6	1	683544	4.01
Na	23	72	1	99980909	0.60
Na	23	72	2	2683793	0.33
Mg	24	72	1	73025251	0.71
Al	27	72	1	1052146	0.84
P	31	72	1	371878	0.40
K	39	72	1	101980626	0.61
Ca	44	72	1	3090285	0.51
Ca	44	72	2	66824	1.01
Ti	47	72	1	95402	0.74
Ti	47	72	2	5484	2.11
V	51	72	1	1926174	2.46
V	51	72	2	181062	0.91
Cr	52	72	1	1221755	1.82
Cr	52	72	2	234524	0.39
Mn	55	72	1	1608149	0.85
Mn	55	72	2	121651	0.40
Fe	56	72	1	134607326	0.44
Fe	56	72	2	19577410	0.14
Co	59	72	1	1376139	0.72
Co	59	72	2	343937	0.76
Ni	60	72	1	296288	0.56
Ni	60	72	2	93338	0.91
Cu	63	72	1	723496	0.41
Cu	63	72	2	254521	0.67
Cu	65	72	1	344294	0.41
Zn	66	72	1	228349	0.97
Zn	68	72	1	162598	0.68
As	75	72	1	351640	1.95
As	75	72	2	41598	1.04
Se	78	72	1	50277	0.34
Se	78	72	2	2261	2.49
Se	82	72	1	13878	0.63
Sr	88	72	1	1942609	0.52
Mo	95	72	1	355083	1.17
Mo	97	72	1	219591	0.73
Ag	107	72	1	917454	1.15
Ag	109	72	1	882855	0.91
Cd	111	115	1	198984	0.53
Cd	114	115	1	479008	0.14
Sn	118	72	1	544778	0.68
Sn	119	72	1	211632	0.42

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	856647	0.79
Sb	121	72	2	208007	0.38
Sb	123	72	1	655241	0.50
Ba	135	115	1	179222	0.44
Ba	137	115	1	310405	0.59
Tl	203	209	1	688544	1.97
Tl	205	209	1	1775418	1.50
Pb	206	209	1	603651	0.39
Pb	207	209	1	545450	0.77
Pb	208	209	1	2446746	0.42

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	350486	1.90	387999	90.3	70	125	
Ge	72	1	2056214	1.49	2178734	94.4	70	125	
Ge	72	2	262945	0.51	272530	96.5	70	125	
In	115	1	2190858	1.26	2313478	94.7	70	125	
Bi	209	1	2056555	1.70	2208562	93.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	200/1000/20K
Data File Name	048CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 15:46
Type	CalStd
VialNumber	1106
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	043CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	1246869	1.19
Be	9	6	1	530295	0.76
B	11	6	1	1400022	4.97
Na	23	72	1	196630170	0.74
Na	23	72	2	5232311	0.37
Mg	24	72	1	142070605	0.65
Al	27	72	1	2052871	0.88
P	31	72	1	707475	0.64
K	39	72	1	197268308	1.00
Ca	44	72	1	5918465	1.35
Ca	44	72	2	132435	0.55
Ti	47	72	1	187229	0.77
Ti	47	72	2	11102	1.36
V	51	72	1	3162754	0.26
V	51	72	2	360166	0.91
Cr	52	72	1	2426243	1.06
Cr	52	72	2	466917	0.49
Mn	55	72	1	3096652	1.15
Mn	55	72	2	238463	0.80
Fe	56	72	1	262667812	1.31
Fe	56	72	2	38481773	1.12
Co	59	72	1	2659808	1.43
Co	59	72	2	676181	0.48
Ni	60	72	1	569719	1.02
Ni	60	72	2	182921	0.54
Cu	63	72	1	1475551	0.85
Cu	63	72	2	494968	0.56
Cu	65	72	1	671341	0.30
Zn	66	72	1	441559	0.19
Zn	68	72	1	314360	0.71
As	75	72	1	614073	0.17
As	75	72	2	82250	0.50
Se	78	72	1	82931	0.87
Se	78	72	2	4439	1.62
Se	82	72	1	26805	0.40
Sr	88	72	1	3731335	1.04
Mo	95	72	1	700476	1.17
Mo	97	72	1	433695	1.03
Ag	107	72	1	1882175	0.89
Ag	109	72	1	1834608	0.85
Cd	111	115	1	388961	0.28
Cd	114	115	1	936443	0.39
Sn	118	72	1	1067791	0.73
Sn	119	72	1	416851	0.76

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	1795054	1.29
Sb	121	72	2	415968	0.42
Sb	123	72	1	1303863	0.94
Ba	135	115	1	350695	0.74
Ba	137	115	1	610527	0.80
Tl	203	209	1	1354417	2.86
Tl	205	209	1	3445023	3.23
Pb	206	209	1	1174414	0.66
Pb	207	209	1	1060040	0.90
Pb	208	209	1	4952844	1.01

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	315731	1.55	387999	81.4	70	125	
Ge	72	1	2027093	2.38	2178734	93.0	70	125	
Ge	72	2	261040	0.55	272530	95.8	70	125	
In	115	1	2122973	1.46	2313478	91.8	70	125	
Bi	209	1	2024363	1.36	2208562	91.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	049SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 15:50
Sample Name	ICCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	94.560	94.560	2.41
Be	9	6	1	ppb	107.978	107.978	2.81
B	11	6	1	ppb	487.801	487.801	6.59
Na	23	72	1	ppb	9988.315	9988.315	1.70
Na	23	72	2	ppb	10094.524	10094.524	0.07
Mg	24	72	1	ppb	10011.233	10011.233	1.38
Al	27	72	1	ppb	99.432	99.432	0.76
P	31	72	1	ppb	525.856	525.856	1.49
K	39	72	1	ppb	10010.216	10010.216	0.86
Ca	44	72	1	ppb	10053.487	10053.487	1.55
Ca	44	72	2	ppb	9894.024	9894.024	0.38
Ti	47	72	1	ppb	100.955	100.955	1.57
Ti	47	72	2	ppb	97.883	97.883	1.48
V	51	72	1	ppb	85.160	85.160	1.25
V	51	72	2	ppb	102.662	102.662	0.61
Cr	52	72	1	ppb	103.870	103.870	1.69
Cr	52	72	2	ppb	103.112	103.112	0.73
Mn	55	72	1	ppb	104.428	104.428	1.84
Mn	55	72	2	ppb	104.177	104.177	0.53
Fe	56	72	1	ppb	10024.393	10024.393	1.62
Fe	56	72	2	ppb	10001.994	10001.994	0.15
Co	59	72	1	ppb	107.030	107.030	1.44
Co	59	72	2	ppb	106.268	106.268	0.21
Ni	60	72	1	ppb	106.468	106.468	1.22
Ni	60	72	2	ppb	106.372	106.372	0.41
Cu	63	72	1	ppb	100.176	100.176	1.33
Cu	63	72	2	ppb	103.327	103.327	0.16
Cu	65	72	1	ppb	104.488	104.488	1.76
Zn	66	72	1	ppb	104.152	104.152	1.17
Zn	66	72	2	ppb	104.938	104.938	0.61
Zn	68	72	1	ppb	105.083	105.083	1.71
As	75	72	1	ppb	94.299	94.299	0.20
As	75	72	2	ppb	105.153	105.153	1.03
Se	78	72	1	ppb	103.328	103.328	1.57
Se	78	72	2	ppb	106.193	106.193	1.57
Se	82	72	1	ppb	103.661	103.661	2.36
Sr	88	72	1	ppb	102.721	102.721	2.48
Mo	95	72	1	ppb	102.539	102.539	1.76
Mo	97	72	1	ppb	102.577	102.577	1.81
Rh	103	115	1	ppb	113.974	113.974	23.37
Pd	105	115	1	ppb	139.262	139.262	25.85
Ag	107	72	1	ppb	103.024	103.024	1.85
Ag	109	72	1	ppb	103.220	103.220	2.11
Cd	111	115	1	ppb	102.743	102.743	2.07

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	103.099	103.099	1.53
Sn	118	72	1	ppb	100.259	100.259	1.16
Sn	119	72	1	ppb	99.698	99.698	1.46
Sb	121	72	1	ppb	104.831	104.831	1.46
Sb	121	72	2	ppb	104.923	104.923	0.28
Sb	123	72	1	ppb	104.162	104.162	1.61
Ba	135	115	1	ppb	104.998	104.998	1.77
Ba	137	115	1	ppb	103.792	103.792	1.83
W	182	209	1	ppb	122.113	122.113	19.27
Pt	195	209	1	ppb	671.889	671.889	58.70
Au	197	209	1	ppb	-36.097	-36.097	-1385.63
Tl	203	209	1	ppb	110.997	110.997	1.99
Tl	205	209	1	ppb	109.588	109.588	1.94
Pb	206	209	1	ppb	108.509	108.509	0.48
Pb	207	209	1	ppb	99.677	99.677	0.73
Pb	208	209	1	ppb	100.877	100.877	0.46
U	238	209	1	ppb	100.063	100.063	1.24

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	343,310	2.57	387999	88.5	70	125	
1	Ge	72	2,107,618	1.09	2178734	96.7	70	125	
2	Ge	72	270,648	0.30	272530	99.3	70	125	
1	In	115	2,214,605	1.34	2313478	95.7	70	125	
1	Bi	209	2,105,028	0.14	2208562	95.3	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	050SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 15:55
Sample Name	LLCCV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	4.851	4.851	1.73
Be	9	6	1	ppb	4.946	4.946	2.33
B	11	6	1	ppb	52.730	52.730	5.64
Na	23	72	1	ppb	533.627	533.627	1.59
Na	23	72	2	ppb	526.708	526.708	0.33
Mg	24	72	1	ppb	535.577	535.577	1.55
Al	27	72	1	ppb	6.730	6.730	24.61
P	31	72	1	ppb	28.403	28.403	5.77
K	39	72	1	ppb	530.170	530.170	2.81
Ca	44	72	1	ppb	530.679	530.679	0.78
Ca	44	72	2	ppb	519.505	519.505	4.34
Ti	47	72	1	ppb	5.161	5.161	2.19
Ti	47	72	2	ppb	4.636	4.636	13.18
V	51	72	1	ppb	-19.009	-19.009	-0.42
V	51	72	2	ppb	4.785	4.785	2.32
Cr	52	72	1	ppb	4.559	4.559	2.24
Cr	52	72	2	ppb	5.135	5.135	0.64
Mn	55	72	1	ppb	5.303	5.303	1.06
Mn	55	72	2	ppb	5.317	5.317	4.14
Fe	56	72	1	ppb	512.222	512.222	1.80
Fe	56	72	2	ppb	520.145	520.145	0.17
Co	59	72	1	ppb	5.161	5.161	1.49
Co	59	72	2	ppb	5.263	5.263	1.92
Ni	60	72	1	ppb	5.441	5.441	3.13
Ni	60	72	2	ppb	5.378	5.378	4.31
Cu	63	72	1	ppb	5.205	5.205	1.46
Cu	63	72	2	ppb	5.320	5.320	0.74
Cu	65	72	1	ppb	5.383	5.383	1.03
Zn	66	72	1	ppb	4.991	4.991	4.48
Zn	66	72	2	ppb	5.219	5.219	1.00
Zn	68	72	1	ppb	5.376	5.376	2.10
As	75	72	1	ppb	-4.717	-4.717	-8.69
As	75	72	2	ppb	5.247	5.247	2.80
Se	78	72	1	ppb	5.719	5.719	6.51
Se	78	72	2	ppb	5.343	5.343	9.44
Se	82	72	1	ppb	5.434	5.434	3.02
Sr	88	72	1	ppb	5.141	5.141	1.49
Mo	95	72	1	ppb	5.282	5.282	1.48
Mo	97	72	1	ppb	5.305	5.305	3.14
Rh	103	115	1	ppb	6.302	6.302	68.67
Pd	105	115	1	ppb	65.420	65.420	27.68
Ag	107	72	1	ppb	5.243	5.243	2.55
Ag	109	72	1	ppb	5.310	5.310	1.71
Cd	111	115	1	ppb	5.245	5.245	1.27

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	5.205	5.205	2.48
Sn	118	72	1	ppb	5.514	5.514	1.73
Sn	119	72	1	ppb	5.456	5.456	2.01
Sb	121	72	1	ppb	5.432	5.432	2.63
Sb	121	72	2	ppb	5.483	5.483	0.74
Sb	123	72	1	ppb	5.370	5.370	1.53
Ba	135	115	1	ppb	5.084	5.084	5.07
Ba	137	115	1	ppb	5.138	5.138	3.06
W	182	209	1	ppb	13.011	13.011	295.56
Pt	195	209	1	ppb	127.294	127.294	56.67
Au	197	209	1	ppb	364.077	364.077	66.26
Tl	203	209	1	ppb	6.589	6.589	7.33
Tl	205	209	1	ppb	6.055	6.055	7.45
Pb	206	209	1	ppb	5.273	5.273	2.11
Pb	207	209	1	ppb	5.247	5.247	1.97
Pb	208	209	1	ppb	5.089	5.089	0.76
U	238	209	1	ppb	4.147	4.147	2.07

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	375,602	1.87	387999	96.8	70	125	
1	Ge	72	2,110,073	1.48	2178734	96.8	70	125	
2	Ge	72	270,653	0.12	272530	99.3	70	125	
1	In	115	2,232,434	1.20	2313478	96.5	70	125	
1	Bi	209	2,143,353	1.19	2208562	97.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	051SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 15:59
Sample Name	LLCCV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	2.023	2.023	2.01
Be	9	6	1	ppb	2.028	2.028	4.34
B	11	6	1	ppb	26.208	26.208	4.20
Na	23	72	1	ppb	218.983	218.983	1.54
Na	23	72	2	ppb	208.051	208.051	0.53
Mg	24	72	1	ppb	217.282	217.282	0.67
Al	27	72	1	ppb	4.549	4.549	47.11
P	31	72	1	ppb	12.409	12.409	15.27
K	39	72	1	ppb	221.169	221.169	2.22
Ca	44	72	1	ppb	216.687	216.687	7.80
Ca	44	72	2	ppb	221.922	221.922	4.68
Ti	47	72	1	ppb	2.124	2.124	3.83
Ti	47	72	2	ppb	2.217	2.217	26.82
V	51	72	1	ppb	-19.098	-19.098	-4.56
V	51	72	2	ppb	1.696	1.696	3.34
Cr	52	72	1	ppb	1.591	1.591	5.26
Cr	52	72	2	ppb	2.014	2.014	1.85
Mn	55	72	1	ppb	2.224	2.224	5.36
Mn	55	72	2	ppb	2.208	2.208	7.52
Fe	56	72	1	ppb	205.459	205.459	2.14
Fe	56	72	2	ppb	208.518	208.518	0.88
Co	59	72	1	ppb	2.059	2.059	0.92
Co	59	72	2	ppb	2.161	2.161	4.62
Ni	60	72	1	ppb	2.271	2.271	0.91
Ni	60	72	2	ppb	2.231	2.231	2.39
Cu	63	72	1	ppb	2.099	2.099	1.36
Cu	63	72	2	ppb	2.088	2.088	1.48
Cu	65	72	1	ppb	2.174	2.174	2.15
Zn	66	72	1	ppb	1.765	1.765	9.21
Zn	66	72	2	ppb	2.016	2.016	6.11
Zn	68	72	1	ppb	2.319	2.319	4.14
As	75	72	1	ppb	-6.468	-6.468	-18.84
As	75	72	2	ppb	2.020	2.020	5.01
Se	78	72	1	ppb	2.960	2.960	14.00
Se	78	72	2	ppb	2.182	2.182	3.85
Se	82	72	1	ppb	2.222	2.222	9.27
Sr	88	72	1	ppb	2.128	2.128	3.37
Mo	95	72	1	ppb	2.175	2.175	2.48
Mo	97	72	1	ppb	2.133	2.133	1.49
Rh	103	115	1	ppb	6.111	6.111	47.27
Pd	105	115	1	ppb	61.338	61.338	70.28
Ag	107	72	1	ppb	2.134	2.134	1.12
Ag	109	72	1	ppb	2.102	2.102	1.18
Cd	111	115	1	ppb	2.056	2.056	2.96

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	2.162	2.162	2.27
Sn	118	72	1	ppb	2.225	2.225	2.03
Sn	119	72	1	ppb	2.312	2.312	4.30
Sb	121	72	1	ppb	2.231	2.231	1.81
Sb	121	72	2	ppb	2.226	2.226	1.76
Sb	123	72	1	ppb	2.232	2.232	1.66
Ba	135	115	1	ppb	2.067	2.067	0.79
Ba	137	115	1	ppb	2.134	2.134	2.39
W	182	209	1	ppb	0.523	0.523	5645.12
Pt	195	209	1	ppb	28.863	28.863	492.36
Au	197	209	1	ppb	385.328	385.328	61.15
Tl	203	209	1	ppb	2.644	2.644	8.42
Tl	205	209	1	ppb	2.438	2.438	6.52
Pb	206	209	1	ppb	2.191	2.191	4.67
Pb	207	209	1	ppb	2.214	2.214	5.94
Pb	208	209	1	ppb	2.109	2.109	5.54
U	238	209	1	ppb	1.678	1.678	2.32

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	373,599	0.57	387999	96.3	70	125	
1	Ge	72	2,098,559	0.68	2178734	96.3	70	125	
2	Ge	72	272,184	0.32	272530	99.9	70	125	
1	In	115	2,203,461	0.86	2313478	95.2	70	125	
1	Bi	209	2,108,101	1.92	2208562	95.5	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	052SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 16:04
Sample Name	ICCB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.130	0.130	47.74
Be	9	6	1	ppb	0.013	0.013	39.56
B	11	6	1	ppb	12.197	12.197	8.60
Na	23	72	1	ppb	3.771	3.771	22.00
Na	23	72	2	ppb	2.180	2.180	36.82
Mg	24	72	1	ppb	0.480	0.480	263.61
Al	27	72	1	ppb	1.640	1.640	214.96
P	31	72	1	ppb	0.570	0.570	217.87
K	39	72	1	ppb	6.706	6.706	102.51
Ca	44	72	1	ppb	-14.516	-14.516	-75.08
Ca	44	72	2	ppb	-0.757	-0.757	-511.60
Ti	47	72	1	ppb	-0.045	-0.045	-60.15
Ti	47	72	2	ppb	0.040	0.040	446.73
V	51	72	1	ppb	-18.006	-18.006	-2.58
V	51	72	2	ppb	-0.319	-0.319	-4.95
Cr	52	72	1	ppb	-0.369	-0.369	-8.40
Cr	52	72	2	ppb	0.000	0.000	2316.25
Mn	55	72	1	ppb	0.042	0.042	161.54
Mn	55	72	2	ppb	0.011	0.011	369.22
Fe	56	72	1	ppb	-5.917	-5.917	-6.17
Fe	56	72	2	ppb	0.622	0.622	12.34
Co	59	72	1	ppb	0.003	0.003	136.64
Co	59	72	2	ppb	0.003	0.003	153.40
Ni	60	72	1	ppb	0.005	0.005	162.96
Ni	60	72	2	ppb	-0.012	-0.012	-131.84
Cu	63	72	1	ppb	0.079	0.079	29.39
Cu	63	72	2	ppb	0.073	0.073	12.19
Cu	65	72	1	ppb	0.084	0.084	25.32
Zn	66	72	1	ppb	-0.371	-0.371	-7.88
Zn	66	72	2	ppb	-0.138	-0.138	-8.87
Zn	68	72	1	ppb	0.126	0.126	50.98
As	75	72	1	ppb	-7.218	-7.218	-7.56
As	75	72	2	ppb	0.002	0.002	663.11
Se	78	72	1	ppb	-0.003	-0.003	-15149.06
Se	78	72	2	ppb	0.102	0.102	73.57
Se	82	72	1	ppb	0.016	0.016	854.82
Sr	88	72	1	ppb	0.011	0.011	234.89
Mo	95	72	1	ppb	0.035	0.035	43.85
Mo	97	72	1	ppb	0.008	0.008	295.97
Rh	103	115	1	ppb	-0.831	-0.831	-1980.71
Pd	105	115	1	ppb	39.606	39.606	57.34
Ag	107	72	1	ppb	0.008	0.008	139.37
Ag	109	72	1	ppb	0.012	0.012	20.91
Cd	111	115	1	ppb	-0.006	-0.006	-50.25

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.008	0.008	107.43
Sn	118	72	1	ppb	0.165	0.165	15.20
Sn	119	72	1	ppb	0.116	0.116	17.04
Sb	121	72	1	ppb	0.077	0.077	14.52
Sb	121	72	2	ppb	0.091	0.091	8.35
Sb	123	72	1	ppb	0.083	0.083	32.39
Ba	135	115	1	ppb	0.019	0.019	45.19
Ba	137	115	1	ppb	0.007	0.007	140.87
W	182	209	1	ppb	9.987	9.987	259.10
Pt	195	209	1	ppb	-133.001	-133.001	-86.89
Au	197	209	1	ppb	-141.740	-141.740	-154.36
Tl	203	209	1	ppb	0.420	0.420	22.24
Tl	205	209	1	ppb	0.385	0.385	25.91
Pb	206	209	1	ppb	-0.006	-0.006	-1215.61
Pb	207	209	1	ppb	0.012	0.012	546.70
Pb	208	209	1	ppb	0.001	0.001	6856.83
U	238	209	1	ppb	0.002	0.002	85.83

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	381,687	2.52	387999	98.4	70	125	
1	Ge	72	2,112,749	1.99	2178734	97.0	70	125	
2	Ge	72	270,567	0.22	272530	99.3	70	125	
1	In	115	2,254,881	2.78	2313478	97.5	70	125	
1	Bi	209	2,144,182	1.62	2208562	97.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**063CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D25I00.B**
AcqDateTime	**4/25/2017 16:55**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**043CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	101.31	1.90	ppb	100	101.3	90	110	
Na	23	72	2	10126.11	1.38	ppb	10000	101.3	90	110	
Mg	24	72	1	10028.85	1.36	ppb	10000	100.3	90	110	
K	39	72	1	10009.72	1.11	ppb	10000	100.1	90	110	
Cr	52	72	2	98.88	0.31	ppb	100	98.9	90	110	
Mn	55	72	2	100.81	0.96	ppb	100	100.8	90	110	
Fe	56	72	2	9995.50	0.80	ppb	10000	100.0	90	110	
Co	59	72	2	99.84	0.12	ppb	100	99.8	90	110	
Ni	60	72	2	100.30	1.34	ppb	100	100.3	90	110	
Cu	63	72	2	99.27	1.03	ppb	100	99.3	90	110	
Zn	66	72	2	99.36	0.95	ppb	100	99.4	90	110	
As	75	72	2	99.97	0.32	ppb	100	100.0	90	110	
Se	78	72	2	96.74	1.89	ppb	100	96.7	90	110	
Mo	95	72	1	99.48	2.50	ppb	100	99.5	90	110	
Ag	107	72	1	104.74	2.19	ppb	100	104.7	90	110	
Cd	111	115	1	100.04	1.60	ppb	100	100.0	90	110	
Sb	121	72	2	100.60	0.43	ppb	100	100.6	90	110	
Ba	135	115	1	100.30	2.05	ppb	100	100.3	90	110	
Tl	203	209	1	97.67	3.10	ppb	100	97.7	90	110	
Pb	208	209	1	96.57	0.86	ppb	100	96.6	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	345585	1.98	387999	**89.1**	70	125	
Ge	72	1	2017344	1.39	2178734	**92.6**	70	125	
Ge	72	2	260204	0.27	272530	**95.5**	70	125	
In	115	1	2115346	1.84	2313478	**91.4**	70	125	
Bi	209	1	2023415	0.59	2208562	**91.6**	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**064CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 17:00**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**043CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.14	24.28	ppb	2.5	
Be	9	6	1	0.08	0.82	ppb	1	
B	11	6	1	15.16	6.55	ppb	5	>2.2*DL
Na	23	72	1	15.64	9.30	ppb	250	
Na	23	72	2	12.96	8.08	ppb	250	
Mg	24	72	1	10.34	14.49	ppb	250	
Al	27	72	1	5.52	43.93	ppb	5	>2.2*DL
P	31	72	1	0.84	370.98	ppb	5	
K	39	72	1	15.04	27.11	ppb	250	
Ca	44	72	1	8.02	194.18	ppb	250	
Ca	44	72	2	29.57	26.19	ppb	250	
Ti	47	72	1	0.13	33.15	ppb	2.5	
Ti	47	72	2	0.14	104.76	ppb	2.5	
V	51	72	1	-19.83	-3.55	ppb	2.5	
V	51	72	2	-0.28	-6.76	ppb	2.5	
Cr	52	72	1	-0.39	-13.08	ppb	2.5	
Cr	52	72	2	0.08	32.09	ppb	2.5	
Mn	55	72	1	0.28	42.84	ppb	2.5	
Mn	55	72	2	0.19	17.01	ppb	2.5	
Fe	56	72	1	2.84	67.58	ppb	100	
Fe	56	72	2	12.40	1.55	ppb	100	
Co	59	72	1	0.08	12.45	ppb	2.5	
Co	59	72	2	0.08	26.05	ppb	2.5	
Ni	60	72	1	0.13	8.85	ppb	2.5	
Ni	60	72	2	0.10	40.11	ppb	2.5	
Cu	63	72	1	0.14	17.48	ppb	2.5	
Cu	63	72	2	0.11	26.36	ppb	2.5	
Cu	65	72	1	0.08	21.71	ppb	2.5	
Zn	66	72	1	-0.11	-66.93	ppb	2.5	
Zn	66	72	2	0.16	25.20	ppb	2.5	
Zn	68	72	1	0.34	18.77	ppb	2.5	
As	75	72	1	-7.83	-8.47	ppb	2.5	
As	75	72	2	0.09	27.52	ppb	2.5	
Se	78	72	1	-0.26	-367.88	ppb	2.5	
Se	78	72	2	-0.11	-283.62	ppb	2.5	
Se	82	72	1	0.12	53.97	ppb	2.5	
Sr	88	72	1	0.14	18.98	ppb	2.5	
Mo	95	72	1	0.24	13.18	ppb	2.5	
Mo	97	72	1	0.22	33.06	ppb	2.5	
Ag	107	72	1	0.10	7.72	ppb	2.5	
Ag	109	72	1	0.11	11.87	ppb	2.5	
Cd	111	115	1	0.07	24.22	ppb	2.5	
Cd	114	115	1	0.07	18.50	ppb	2.5	
Sn	118	72	1	0.20	23.28	ppb	2.5	
Sn	119	72	1	0.17	19.44	ppb	2.5	
Sb	121	72	1	0.37	9.89	ppb	2.5	
Sb	121	72	2	0.44	1.41	ppb	2.5	
Sb	123	72	1	0.37	7.90	ppb	2.5	
Ba	135	115	1	0.13	16.11	ppb	2.5	
Ba	137	115	1	0.11	23.73	ppb	2.5	
Tl	203	209	1	1.46	9.59	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.36	7.32	ppb	2.5	
Pb	206	209	1	0.22	33.46	ppb	2.5	
Pb	207	209	1	0.20	28.03	ppb	2.5	
Pb	208	209	1	0.20	34.53	ppb	2.5	
U	238	209	1	0.06	3.19	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	378174	1.98	387999	97.5	70	125	
Ge	72	1	2046603	0.85	2178734	93.9	70	125	
Ge	72	2	265355	0.65	272530	97.4	70	125	
In	115	1	2194644	1.30	2313478	94.9	70	125	
Bi	209	1	2093904	1.31	2208562	94.8	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**073CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D25I00.B**
AcqDateTime	**4/25/2017 17:40**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**043CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	102.79	0.84	ppb	100	102.8	90	110	
Na	23	72	2	9959.88	0.25	ppb	10000	99.6	90	110	
Mg	24	72	1	10093.11	0.59	ppb	10000	100.9	90	110	
K	39	72	1	10082.26	0.82	ppb	10000	100.8	90	110	
Cr	52	72	2	98.65	0.60	ppb	100	98.6	90	110	
Mn	55	72	2	99.34	0.36	ppb	100	99.3	90	110	
Fe	56	72	2	10019.48	0.63	ppb	10000	100.2	90	110	
Co	59	72	2	100.55	0.38	ppb	100	100.6	90	110	
Ni	60	72	2	100.25	1.45	ppb	100	100.2	90	110	
Cu	63	72	2	99.68	0.60	ppb	100	99.7	90	110	
Zn	66	72	2	99.73	1.30	ppb	100	99.7	90	110	
As	75	72	2	99.66	0.30	ppb	100	99.7	90	110	
Se	78	72	2	99.85	0.31	ppb	100	99.9	90	110	
Mo	95	72	1	100.48	0.92	ppb	100	100.5	90	110	
Ag	107	72	1	104.74	0.90	ppb	100	104.7	90	110	
Cd	111	115	1	100.37	0.62	ppb	100	100.4	90	110	
Sb	121	72	2	99.61	0.08	ppb	100	99.6	90	110	
Ba	135	115	1	101.19	0.29	ppb	100	101.2	90	110	
Tl	203	209	1	98.60	1.53	ppb	100	98.6	90	110	
Pb	208	209	1	97.40	0.98	ppb	100	97.4	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	342182	0.49	387999	**88.2**	70	125	
Ge	72	1	2079866	0.87	2178734	**95.5**	70	125	
Ge	72	2	269687	0.22	272530	**99.0**	70	125	
In	115	1	2200159	0.56	2313478	**95.1**	70	125	
Bi	209	1	2068711	0.52	2208562	**93.7**	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**074CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 17:45**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**043CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.15	10.35	ppb	2.5	
Be	9	6	1	0.08	7.75	ppb	1	
B	11	6	1	11.08	6.01	ppb	5	>2.2*DL
Na	23	72	1	13.43	7.09	ppb	250	
Na	23	72	2	10.52	13.42	ppb	250	
Mg	24	72	1	12.93	6.96	ppb	250	
Al	27	72	1	6.54	23.82	ppb	5	>2.2*DL
P	31	72	1	-0.60	-116.52	ppb	5	
K	39	72	1	16.94	47.41	ppb	250	
Ca	44	72	1	-1.00	-808.98	ppb	250	
Ca	44	72	2	35.86	26.06	ppb	250	
Ti	47	72	1	0.11	52.75	ppb	2.5	
Ti	47	72	2	0.11	184.91	ppb	2.5	
V	51	72	1	-27.83	-0.91	ppb	2.5	
V	51	72	2	-0.35	-8.04	ppb	2.5	
Cr	52	72	1	-0.59	-0.61	ppb	2.5	
Cr	52	72	2	0.06	42.33	ppb	2.5	
Mn	55	72	1	0.37	16.88	ppb	2.5	
Mn	55	72	2	0.29	13.32	ppb	2.5	
Fe	56	72	1	11.68	18.80	ppb	100	
Fe	56	72	2	14.53	1.37	ppb	100	
Co	59	72	1	0.07	2.42	ppb	2.5	
Co	59	72	2	0.09	4.90	ppb	2.5	
Ni	60	72	1	0.14	6.13	ppb	2.5	
Ni	60	72	2	0.13	4.32	ppb	2.5	
Cu	63	72	1	0.18	13.43	ppb	2.5	
Cu	63	72	2	0.14	8.33	ppb	2.5	
Cu	65	72	1	0.16	24.63	ppb	2.5	
Zn	66	72	1	-0.07	-57.88	ppb	2.5	
Zn	66	72	2	0.19	26.77	ppb	2.5	
Zn	68	72	1	0.36	10.96	ppb	2.5	
As	75	72	1	-12.39	-4.79	ppb	2.5	
As	75	72	2	0.09	43.89	ppb	2.5	
Se	78	72	1	0.57	196.02	ppb	2.5	
Se	78	72	2	0.22	90.38	ppb	2.5	
Se	82	72	1	0.21	147.48	ppb	2.5	
Sr	88	72	1	0.15	18.97	ppb	2.5	
Mo	95	72	1	0.20	13.07	ppb	2.5	
Mo	97	72	1	0.19	15.60	ppb	2.5	
Ag	107	72	1	0.09	10.75	ppb	2.5	
Ag	109	72	1	0.09	6.87	ppb	2.5	
Cd	111	115	1	0.07	7.15	ppb	2.5	
Cd	114	115	1	0.08	4.23	ppb	2.5	
Sn	118	72	1	0.20	16.87	ppb	2.5	
Sn	119	72	1	0.17	3.20	ppb	2.5	
Sb	121	72	1	0.36	13.46	ppb	2.5	
Sb	121	72	2	0.35	2.71	ppb	2.5	
Sb	123	72	1	0.37	18.07	ppb	2.5	
Ba	135	115	1	0.14	8.30	ppb	2.5	
Ba	137	115	1	0.12	3.57	ppb	2.5	
Tl	203	209	1	1.33	8.77	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.22	7.19	ppb	2.5	
Pb	206	209	1	0.22	32.96	ppb	2.5	
Pb	207	209	1	0.27	34.03	ppb	2.5	
Pb	208	209	1	0.23	33.01	ppb	2.5	
U	238	209	1	0.06	3.36	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	388820	2.40	387999	100.2	70	125	
Ge	72	1	2224497	1.78	2178734	102.1	70	125	
Ge	72	2	278841	0.33	272530	102.3	70	125	
In	115	1	2348821	1.67	2313478	101.5	70	125	
Bi	209	1	2204909	1.84	2208562	99.8	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**083CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D25I00.B**
AcqDateTime	**4/25/2017 18:26**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**043CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	101.79	0.71	ppb	100	101.8	90	110	
Na	23	72	2	9961.91	0.87	ppb	10000	99.6	90	110	
Mg	24	72	1	9976.55	0.90	ppb	10000	99.8	90	110	
K	39	72	1	10082.23	1.42	ppb	10000	100.8	90	110	
Cr	52	72	2	99.42	0.61	ppb	100	99.4	90	110	
Mn	55	72	2	98.75	0.82	ppb	100	98.7	90	110	
Fe	56	72	2	9964.53	0.84	ppb	10000	99.6	90	110	
Co	59	72	2	100.91	0.18	ppb	100	100.9	90	110	
Ni	60	72	2	100.11	0.90	ppb	100	100.1	90	110	
Cu	63	72	2	100.24	0.35	ppb	100	100.2	90	110	
Zn	66	72	2	99.91	1.26	ppb	100	99.9	90	110	
As	75	72	2	100.32	1.04	ppb	100	100.3	90	110	
Se	78	72	2	98.55	6.07	ppb	100	98.6	90	110	
Mo	95	72	1	101.10	0.75	ppb	100	101.1	90	110	
Ag	107	72	1	105.90	0.52	ppb	100	105.9	90	110	
Cd	111	115	1	99.84	1.89	ppb	100	99.8	90	110	
Sb	121	72	2	99.35	0.48	ppb	100	99.3	90	110	
Ba	135	115	1	100.98	2.44	ppb	100	101.0	90	110	
Tl	203	209	1	98.81	1.33	ppb	100	98.8	90	110	
Pb	208	209	1	98.52	1.65	ppb	100	98.5	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	347054	0.88	387999	**89.4**	70	125	
Ge	72	1	2162600	0.85	2178734	**99.3**	70	125	
Ge	72	2	270894	0.47	272530	**99.4**	70	125	
In	115	1	2317823	2.06	2313478	**100.2**	70	125	
Bi	209	1	2159937	1.43	2208562	**97.8**	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**084CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 18:30**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**043CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.06	131.61	ppb	2.5	
Be	9	6	1	0.08	10.77	ppb	1	
B	11	6	1	10.57	5.27	ppb	5	>2.2*DL
Na	23	72	1	11.85	10.21	ppb	250	
Na	23	72	2	9.47	11.08	ppb	250	
Mg	24	72	1	12.53	7.10	ppb	250	
Al	27	72	1	7.50	20.64	ppb	5	>2.2*DL
P	31	72	1	0.36	253.64	ppb	5	
K	39	72	1	12.12	54.35	ppb	250	
Ca	44	72	1	-9.65	-109.14	ppb	250	
Ca	44	72	2	31.09	52.51	ppb	250	
Ti	47	72	1	0.17	42.62	ppb	2.5	
Ti	47	72	2	0.07	120.70	ppb	2.5	
V	51	72	1	-28.02	-1.80	ppb	2.5	
V	51	72	2	-0.34	-4.81	ppb	2.5	
Cr	52	72	1	-0.66	-3.32	ppb	2.5	
Cr	52	72	2	0.07	15.15	ppb	2.5	
Mn	55	72	1	0.45	14.30	ppb	2.5	
Mn	55	72	2	0.35	8.52	ppb	2.5	
Fe	56	72	1	5.44	38.58	ppb	100	
Fe	56	72	2	15.58	3.81	ppb	100	
Co	59	72	1	0.08	7.67	ppb	2.5	
Co	59	72	2	0.09	6.25	ppb	2.5	
Ni	60	72	1	0.13	13.47	ppb	2.5	
Ni	60	72	2	0.12	41.20	ppb	2.5	
Cu	63	72	1	0.20	9.62	ppb	2.5	
Cu	63	72	2	0.17	10.39	ppb	2.5	
Cu	65	72	1	0.21	13.83	ppb	2.5	
Zn	66	72	1	-0.04	-142.58	ppb	2.5	
Zn	66	72	2	0.20	16.06	ppb	2.5	
Zn	68	72	1	0.35	16.12	ppb	2.5	
As	75	72	1	-12.53	-7.34	ppb	2.5	
As	75	72	2	0.07	24.80	ppb	2.5	
Se	78	72	1	2.15	23.87	ppb	2.5	
Se	78	72	2	-0.04	-923.92	ppb	2.5	
Se	82	72	1	0.19	151.80	ppb	2.5	
Sr	88	72	1	0.17	13.01	ppb	2.5	
Mo	95	72	1	0.22	8.01	ppb	2.5	
Mo	97	72	1	0.19	3.30	ppb	2.5	
Ag	107	72	1	0.08	6.67	ppb	2.5	
Ag	109	72	1	0.09	1.95	ppb	2.5	
Cd	111	115	1	0.07	23.43	ppb	2.5	
Cd	114	115	1	0.08	13.40	ppb	2.5	
Sn	118	72	1	0.21	21.20	ppb	2.5	
Sn	119	72	1	0.19	17.74	ppb	2.5	
Sb	121	72	1	0.37	14.12	ppb	2.5	
Sb	121	72	2	0.36	3.53	ppb	2.5	
Sb	123	72	1	0.38	12.90	ppb	2.5	
Ba	135	115	1	0.16	25.58	ppb	2.5	
Ba	137	115	1	0.17	12.47	ppb	2.5	
Tl	203	209	1	1.28	6.02	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.17	7.91	ppb	2.5	
Pb	206	209	1	0.33	29.06	ppb	2.5	
Pb	207	209	1	0.31	29.56	ppb	2.5	
Pb	208	209	1	0.31	27.11	ppb	2.5	
U	238	209	1	0.06	4.71	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	387107	0.15	387999	99.8	70	125	
Ge	72	1	2237432	0.53	2178734	102.7	70	125	
Ge	72	2	281509	0.24	272530	103.3	70	125	
In	115	1	2390227	1.32	2313478	103.3	70	125	
Bi	209	1	2255570	0.31	2208562	102.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	085SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25I00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 18:34
Sample Name	MBLK-115623	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.141	0.141	1.12
Be	9	6	1	ppb	0.000	0.000	-405421.84
B	11	6	1	ppb	5.843	5.843	4.09
Na	23	72	1	ppb	4.204	4.204	23.07
Na	23	72	2	ppb	2.926	2.926	9.91
Mg	24	72	1	ppb	7.889	7.889	16.21
Al	27	72	1	ppb	7.818	7.818	21.25
P	31	72	1	ppb	19.090	19.090	6.46
K	39	72	1	ppb	21.453	21.453	13.20
Ca	44	72	1	ppb	-33.108	-33.108	-31.72
Ca	44	72	2	ppb	7.381	7.381	106.24
Ti	47	72	1	ppb	0.084	0.084	67.74
Ti	47	72	2	ppb	0.040	0.040	166.37
V	51	72	1	ppb	-14.394	-14.394	-2.15
V	51	72	2	ppb	-0.264	-0.264	-6.34
Cr	52	72	1	ppb	-0.027	-0.027	-37.20
Cr	52	72	2	ppb	0.130	0.130	15.66
Mn	55	72	1	ppb	0.606	0.606	8.43
Mn	55	72	2	ppb	0.107	0.107	44.00
Fe	56	72	1	ppb	11.068	11.068	6.59
Fe	56	72	2	ppb	0.431	0.431	25.65
Co	59	72	1	ppb	0.009	0.009	57.01
Co	59	72	2	ppb	0.016	0.016	45.32
Ni	60	72	1	ppb	0.007	0.007	184.36
Ni	60	72	2	ppb	0.003	0.003	141.66
Cu	63	72	1	ppb	0.428	0.428	4.04
Cu	63	72	2	ppb	0.335	0.335	10.96
Cu	65	72	1	ppb	0.387	0.387	9.81
Zn	66	72	1	ppb	1.298	1.298	9.42
Zn	66	72	2	ppb	1.392	1.392	7.59
Zn	68	72	1	ppb	1.606	1.606	12.41
As	75	72	1	ppb	0.302	0.302	150.36
As	75	72	2	ppb	0.076	0.076	28.48
Se	78	72	1	ppb	4.308	4.308	17.24
Se	78	72	2	ppb	0.089	0.089	222.41
Se	82	72	1	ppb	0.166	0.166	114.49
Sr	88	72	1	ppb	0.077	0.077	27.95
Mo	95	72	1	ppb	0.031	0.031	98.71
Mo	97	72	1	ppb	0.023	0.023	117.84
Rh	103	115	1	ppb	94.658	94.658	18.58
Pd	105	115	1	ppb	62.379	62.379	28.35
Ag	107	72	1	ppb	0.038	0.038	10.05
Ag	109	72	1	ppb	0.042	0.042	22.60
Cd	111	115	1	ppb	0.002	0.002	266.05

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.014	0.014	46.75
Sn	118	72	1	ppb	0.367	0.367	5.28
Sn	119	72	1	ppb	0.330	0.330	10.51
Sb	121	72	1	ppb	0.573	0.573	3.41
Sb	121	72	2	ppb	0.533	0.533	8.96
Sb	123	72	1	ppb	0.586	0.586	3.03
Ba	135	115	1	ppb	0.020	0.020	167.25
Ba	137	115	1	ppb	0.014	0.014	157.09
W	182	209	1	ppb	60.817	60.817	64.43
Pt	195	209	1	ppb	223.836	223.836	47.76
Au	197	209	1	ppb	231.560	231.560	92.17
Tl	203	209	1	ppb	0.313	0.313	27.43
Tl	205	209	1	ppb	0.296	0.296	27.83
Pb	206	209	1	ppb	0.046	0.046	172.25
Pb	207	209	1	ppb	0.035	0.035	219.66
Pb	208	209	1	ppb	0.035	0.035	197.16
U	238	209	1	ppb	0.000	0.000	591.94

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	371,287	0.78	387999	95.7	70	125	
1	Ge	72	2,120,803	1.50	2178734	97.3	70	125	
2	Ge	72	269,768	0.48	272530	99.0	70	125	
1	In	115	2,214,102	1.16	2313478	95.7	70	125	
1	Bi	209	2,089,107	1.13	2208562	94.6	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	086SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 18:39
Sample Name	LCS-115623	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	101.294	101.294	10.13
Be	9	6	1	ppb	109.093	109.093	9.67
B	11	6	1	ppb	502.550	502.550	7.25
Na	23	72	1	ppb	10080.177	10080.177	6.75
Na	23	72	2	ppb	9868.910	9868.910	0.90
Mg	24	72	1	ppb	10178.516	10178.516	6.63
Al	27	72	1	ppb	594.405	594.405	7.59
P	31	72	1	ppb	519.379	519.379	7.81
K	39	72	1	ppb	10232.300	10232.300	6.97
Ca	44	72	1	ppb	10174.546	10174.546	7.66
Ca	44	72	2	ppb	9753.931	9753.931	1.69
Ti	47	72	1	ppb	202.300	202.300	7.27
Ti	47	72	2	ppb	190.832	190.832	2.78
V	51	72	1	ppb	97.805	97.805	10.66
V	51	72	2	ppb	96.834	96.834	1.14
Cr	52	72	1	ppb	98.656	98.656	6.80
Cr	52	72	2	ppb	97.221	97.221	0.79
Mn	55	72	1	ppb	102.441	102.441	7.50
Mn	55	72	2	ppb	97.669	97.669	0.62
Fe	56	72	1	ppb	10294.106	10294.106	7.50
Fe	56	72	2	ppb	9888.458	9888.458	0.95
Co	59	72	1	ppb	100.876	100.876	8.82
Co	59	72	2	ppb	98.573	98.573	0.75
Ni	60	72	1	ppb	102.779	102.779	7.54
Ni	60	72	2	ppb	97.580	97.580	0.61
Cu	63	72	1	ppb	97.614	97.614	7.82
Cu	63	72	2	ppb	98.057	98.057	0.28
Cu	65	72	1	ppb	101.419	101.419	7.34
Zn	66	72	1	ppb	102.592	102.592	6.50
Zn	66	72	2	ppb	98.916	98.916	0.96
Zn	68	72	1	ppb	102.969	102.969	6.77
As	75	72	1	ppb	105.974	105.974	9.91
As	75	72	2	ppb	97.311	97.311	1.17
Se	78	72	1	ppb	107.112	107.112	10.81
Se	78	72	2	ppb	94.611	94.611	2.75
Se	82	72	1	ppb	102.120	102.120	8.11
Sr	88	72	1	ppb	103.432	103.432	6.31
Mo	95	72	1	ppb	104.330	104.330	5.69
Mo	97	72	1	ppb	104.467	104.467	6.69
Rh	103	115	1	ppb	141.234	141.234	17.24
Pd	105	115	1	ppb	145.822	145.822	50.95
Ag	107	72	1	ppb	103.396	103.396	7.16
Ag	109	72	1	ppb	104.038	104.038	7.02
Cd	111	115	1	ppb	105.435	105.435	9.28

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	105.061	105.061	9.07
Sn	118	72	1	ppb	102.548	102.548	7.01
Sn	119	72	1	ppb	103.317	103.317	7.26
Sb	121	72	1	ppb	105.784	105.784	6.86
Sb	121	72	2	ppb	99.832	99.832	0.82
Sb	123	72	1	ppb	104.694	104.694	6.95
Ba	135	115	1	ppb	106.852	106.852	8.69
Ba	137	115	1	ppb	105.994	105.994	9.28
W	182	209	1	ppb	132.036	132.036	15.04
Pt	195	209	1	ppb	2409.989	2409.989	38.00
Au	197	209	1	ppb	200.588	200.588	182.70
Tl	203	209	1	ppb	103.221	103.221	5.64
Tl	205	209	1	ppb	102.693	102.693	4.75
Pb	206	209	1	ppb	107.494	107.494	9.30
Pb	207	209	1	ppb	106.959	106.959	9.17
Pb	208	209	1	ppb	103.914	103.914	9.11
U	238	209	1	ppb	105.829	105.829	9.32

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	306,322	10.37	387999	78.9	70	125	
1	Ge	72	1,998,122	7.38	2178734	91.7	70	125	
2	Ge	72	262,657	0.34	272530	96.4	70	125	
1	In	115	2,041,212	9.45	2313478	88.2	70	125	
1	Bi	209	1,907,980	9.37	2208562	86.4	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**092CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D25I00.B**
AcqDateTime	**4/25/2017 19:05**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**043CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	101.95	0.95	ppb	100	102.0	90	110	
Na	23	72	2	9417.63	0.42	ppb	10000	94.2	90	110	
Mg	24	72	1	9114.28	1.87	ppb	10000	91.1	90	110	
K	39	72	1	9539.71	1.91	ppb	10000	95.4	90	110	
Cr	52	72	2	96.31	0.09	ppb	100	96.3	90	110	
Mn	55	72	2	95.98	1.02	ppb	100	96.0	90	110	
Fe	56	72	2	9635.13	0.66	ppb	10000	96.4	90	110	
Co	59	72	2	99.50	0.02	ppb	100	99.5	90	110	
Ni	60	72	2	98.10	1.33	ppb	100	98.1	90	110	
Cu	63	72	2	99.87	0.88	ppb	100	99.9	90	110	
Zn	66	72	2	98.21	2.54	ppb	100	98.2	90	110	
As	75	72	2	98.41	0.84	ppb	100	98.4	90	110	
Se	78	72	2	90.34	4.16	ppb	100	90.3	90	110	
Mo	95	72	1	97.22	1.92	ppb	100	97.2	90	110	
Ag	107	72	1	102.49	1.63	ppb	100	102.5	90	110	
Cd	111	115	1	98.06	0.64	ppb	100	98.1	90	110	
Sb	121	72	2	99.37	0.90	ppb	100	99.4	90	110	
Ba	135	115	1	100.07	0.48	ppb	100	100.1	90	110	
Tl	203	209	1	99.52	2.19	ppb	100	99.5	90	110	
Pb	208	209	1	98.29	0.52	ppb	100	98.3	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	271779	0.61	387999	**70.0**	70	125	
Ge	72	1	2011772	1.36	2178734	**92.3**	70	125	
Ge	72	2	239575	0.57	272530	**87.9**	70	125	
In	115	1	2112859	0.42	2313478	**91.3**	70	125	
Bi	209	1	1945259	0.92	2208562	**88.1**	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**093CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 19:10**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**043CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.20	34.69	ppb	2.5	
Be	9	6	1	0.12	10.59	ppb	1	
B	11	6	1	9.54	11.76	ppb	5	>2.2*DL
Na	23	72	1	12.10	2.93	ppb	250	
Na	23	72	2	8.72	8.15	ppb	250	
Mg	24	72	1	14.78	8.14	ppb	250	
Al	27	72	1	17.31	23.46	ppb	5	>2.2*DL
P	31	72	1	-0.08	-613.76	ppb	5	
K	39	72	1	10.88	87.16	ppb	250	
Ca	44	72	1	24.33	23.94	ppb	250	
Ca	44	72	2	102.06	18.02	ppb	250	
Ti	47	72	1	0.30	8.11	ppb	2.5	
Ti	47	72	2	0.58	47.58	ppb	2.5	
V	51	72	1	-31.22	-0.74	ppb	2.5	
V	51	72	2	-0.37	-5.49	ppb	2.5	
Cr	52	72	1	-0.69	-0.98	ppb	2.5	
Cr	52	72	2	0.11	39.25	ppb	2.5	
Mn	55	72	1	0.67	5.71	ppb	2.5	
Mn	55	72	2	0.60	12.97	ppb	2.5	
Fe	56	72	1	16.66	21.58	ppb	100	
Fe	56	72	2	24.31	2.50	ppb	100	
Co	59	72	1	0.09	2.98	ppb	2.5	
Co	59	72	2	0.10	20.90	ppb	2.5	
Ni	60	72	1	0.14	11.40	ppb	2.5	
Ni	60	72	2	0.13	9.48	ppb	2.5	
Cu	63	72	1	0.93	9.40	ppb	2.5	
Cu	63	72	2	0.75	4.90	ppb	2.5	
Cu	65	72	1	0.91	12.27	ppb	2.5	
Zn	66	72	1	0.07	144.46	ppb	2.5	
Zn	66	72	2	0.28	30.49	ppb	2.5	
Zn	68	72	1	0.54	8.45	ppb	2.5	
As	75	72	1	-13.62	-3.53	ppb	2.5	
As	75	72	2	0.11	51.41	ppb	2.5	
Se	78	72	1	9.81	15.93	ppb	2.5	>2.2*DL
Se	78	72	2	0.15	157.27	ppb	2.5	
Se	82	72	1	0.08	104.66	ppb	2.5	
Sr	88	72	1	0.30	5.04	ppb	2.5	
Mo	95	72	1	0.22	3.41	ppb	2.5	
Mo	97	72	1	0.19	18.98	ppb	2.5	
Ag	107	72	1	0.09	11.11	ppb	2.5	
Ag	109	72	1	0.09	18.19	ppb	2.5	
Cd	111	115	1	0.09	25.01	ppb	2.5	
Cd	114	115	1	0.08	11.42	ppb	2.5	
Sn	118	72	1	0.21	10.44	ppb	2.5	
Sn	119	72	1	0.20	9.74	ppb	2.5	
Sb	121	72	1	0.23	6.52	ppb	2.5	
Sb	121	72	2	0.19	11.38	ppb	2.5	
Sb	123	72	1	0.23	9.50	ppb	2.5	
Ba	135	115	1	0.25	7.51	ppb	2.5	
Ba	137	115	1	0.22	6.28	ppb	2.5	
Tl	203	209	1	1.15	9.50	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.07	6.40	ppb	2.5	
Pb	206	209	1	0.53	16.35	ppb	2.5	
Pb	207	209	1	0.51	21.74	ppb	2.5	
Pb	208	209	1	0.50	20.04	ppb	2.5	
U	238	209	1	0.07	5.80	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	298552	1.62	387999	76.9	70	125	
Ge	72	1	2056095	0.69	2178734	94.4	70	125	
Ge	72	2	247662	0.30	272530	90.9	70	125	
In	115	1	2162860	0.48	2313478	93.5	70	125	
Bi	209	1	2003162	0.42	2208562	90.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	094SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 19:14
Sample Name	HS17041053-16	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	65.108	65.108	1.97
Be	9	6	1	ppb	8.413	8.413	3.21
B	11	6	1	ppb	41.363	41.363	4.26
Na	23	72	1	ppb	442.468	442.468	3.21
Na	23	72	2	ppb	437.370	437.370	1.38
Mg	24	72	1	ppb	32830.916	32830.916	2.99
Al	27	72	1	ppb	70900.815	70900.815	2.51
P	31	72	1	ppb	2743.707	2743.707	1.69
K	39	72	1	ppb	26066.980	26066.980	2.95
Ca	44	72	1	ppb	64032.616	64032.616	3.70
Ca	44	72	2	ppb	61267.167	61267.167	0.86
Ti	47	72	1	ppb	1895.366	1895.366	1.74
Ti	47	72	2	ppb	1759.667	1759.667	1.39
V	51	72	1	ppb	164.270	164.270	4.46
V	51	72	2	ppb	177.098	177.098	0.65
Cr	52	72	1	ppb	80.683	80.683	2.63
Cr	52	72	2	ppb	83.114	83.114	0.27
Mn	55	72	1	ppb	2446.088	2446.088	2.99
Mn	55	72	2	ppb	2539.749	2539.749	0.25
Fe	56	72	1	ppb	116905.827	116905.827	2.99
Fe	56	72	2	ppb	115344.082	115344.082	0.32
Co	59	72	1	ppb	45.856	45.856	2.99
Co	59	72	2	ppb	49.338	49.338	0.39
Ni	60	72	1	ppb	95.613	95.613	2.94
Ni	60	72	2	ppb	98.135	98.135	0.54
Cu	63	72	1	ppb	88.178	88.178	2.82
Cu	63	72	2	ppb	93.393	93.393	0.45
Cu	65	72	1	ppb	92.723	92.723	2.64
Zn	66	72	1	ppb	454.169	454.169	2.53
Zn	66	72	2	ppb	452.627	452.627	0.85
Zn	68	72	1	ppb	457.830	457.830	3.09
As	75	72	1	ppb	40.657	40.657	4.82
As	75	72	2	ppb	47.978	47.978	1.41
Se	78	72	1	ppb	12.794	12.794	6.51
Se	78	72	2	ppb	12.288	12.288	9.33
Se	82	72	1	ppb	5.014	5.014	5.00
Sr	88	72	1	ppb	227.913	227.913	3.65
Mo	95	72	1	ppb	2.980	2.980	3.26
Mo	97	72	1	ppb	2.873	2.873	1.39
Rh	103	115	1	ppb	167.874	167.874	21.89
Pd	105	115	1	ppb	1500.191	1500.191	6.10
Ag	107	72	1	ppb	0.328	0.328	2.30
Ag	109	72	1	ppb	0.330	0.330	5.39
Cd	111	115	1	ppb	2.048	2.048	2.50

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	2.076	2.076	2.39
Sn	118	72	1	ppb	4.619	4.619	4.82
Sn	119	72	1	ppb	4.555	4.555	1.82
Sb	121	72	1	ppb	1.458	1.458	2.39
Sb	121	72	2	ppb	1.484	1.484	2.79
Sb	123	72	1	ppb	1.470	1.470	3.58
Ba	135	115	1	ppb	783.733	783.733	2.23
Ba	137	115	1	ppb	811.372	811.372	2.91
W	182	209	1	ppb	4153.149	4153.149	11.64
Pt	195	209	1	ppb	1406.672	1406.672	45.42
Au	197	209	1	ppb	-904.848	-904.848	-29.79
Tl	203	209	1	ppb	1.577	1.577	8.87
Tl	205	209	1	ppb	1.460	1.460	10.53
Pb	206	209	1	ppb	145.192	145.192	1.51
Pb	207	209	1	ppb	131.749	131.749	2.04
Pb	208	209	1	ppb	139.790	139.790	1.47
U	238	209	1	ppb	2.785	2.785	2.93

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	257,263	0.35	387999	66.3	70	125	IS Failed
1	Ge	72	1,926,581	0.63	2178734	88.4	70	125	
2	Ge	72	237,334	0.33	272530	87.1	70	125	
1	In	115	1,934,982	2.03	2313478	83.6	70	125	
1	Bi	209	1,858,013	1.25	2208562	84.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	095SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 19:19
Sample Name	HS17041053-16SD	**Sample Type**	Sample
Total Dilution	5.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	12.879	64.395	6.65
Be	9	6	1	ppb	1.690	8.451	21.71
B	11	6	1	ppb	9.533	47.666	23.42
Na	23	72	1	ppb	91.736	458.678	8.85
Na	23	72	2	ppb	91.191	455.957	18.42
Mg	24	72	1	ppb	6970.933	34854.667	1.23
Al	27	72	1	ppb	15117.450	75587.252	2.13
P	31	72	1	ppb	548.344	2741.719	3.68
K	39	72	1	ppb	5497.606	27488.032	2.46
Ca	44	72	1	ppb	13542.889	67714.446	3.25
Ca	44	72	2	ppb	12641.841	63209.204	5.82
Ti	47	72	1	ppb	393.601	1968.004	1.05
Ti	47	72	2	ppb	362.734	1813.668	6.28
V	51	72	1	ppb	15.099	75.496	29.40
V	51	72	2	ppb	36.296	181.482	2.33
Cr	52	72	1	ppb	16.780	83.900	1.77
Cr	52	72	2	ppb	17.143	85.715	4.24
Mn	55	72	1	ppb	520.036	2600.182	3.83
Mn	55	72	2	ppb	506.185	2530.924	3.65
Fe	56	72	1	ppb	24956.174	124780.872	2.51
Fe	56	72	2	ppb	24015.918	120079.588	0.48
Co	59	72	1	ppb	9.776	48.882	3.49
Co	59	72	2	ppb	10.317	51.587	6.81
Ni	60	72	1	ppb	20.669	103.344	9.84
Ni	60	72	2	ppb	20.708	103.540	6.90
Cu	63	72	1	ppb	19.847	99.235	10.24
Cu	63	72	2	ppb	20.540	102.698	4.63
Cu	65	72	1	ppb	20.574	102.871	5.19
Zn	66	72	1	ppb	97.888	489.441	2.41
Zn	66	72	2	ppb	95.496	477.478	7.40
Zn	68	72	1	ppb	98.235	491.173	6.76
As	75	72	1	ppb	0.602	3.010	744.07
As	75	72	2	ppb	9.779	48.895	9.01
Se	78	72	1	ppb	10.947	54.734	15.17
Se	78	72	2	ppb	2.745	13.724	88.23
Se	82	72	1	ppb	1.110	5.548	91.63
Sr	88	72	1	ppb	46.686	233.428	3.02
Mo	95	72	1	ppb	0.610	3.051	13.60
Mo	97	72	1	ppb	0.596	2.979	23.99
Rh	103	115	1	ppb	27.574	137.871	335.38
Pd	105	115	1	ppb	340.158	1700.788	45.44
Ag	107	72	1	ppb	0.062	0.312	68.61
Ag	109	72	1	ppb	0.068	0.341	68.89
Cd	111	115	1	ppb	0.404	2.021	23.98
Cd	114	115	1	ppb	0.447	2.234	36.20
Sn	118	72	1	ppb	0.987	4.933	36.20

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	0.989	4.945	11.22
Sb	121	72	1	ppb	0.374	1.871	56.07
Sb	121	72	2	ppb	0.356	1.782	14.73
Sb	123	72	1	ppb	0.390	1.951	12.32
Ba	135	115	1	ppb	158.442	792.210	3.48
Ba	137	115	1	ppb	157.622	788.110	4.27
W	182	209	1	ppb	825.991	4129.957	58.23
Pt	195	209	1	ppb	439.136	2195.678	734.40
Au	197	209	1	ppb	79.875	399.374	2436.48
Tl	203	209	1	ppb	0.257	1.286	77.59
Tl	205	209	1	ppb	0.258	1.291	77.22
Pb	206	209	1	ppb	29.889	149.447	7.98
Pb	207	209	1	ppb	27.121	135.605	6.50
Pb	208	209	1	ppb	27.600	137.998	8.11
U	238	209	1	ppb	0.560	2.798	23.01

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	283,753	0.30	387999	73.1	70	125	
1	Ge	72	2,007,267	0.84	2178734	92.1	70	125	
2	Ge	72	244,544	0.63	272530	89.7	70	125	
1	In	115	2,086,421	1.25	2313478	90.2	70	125	
1	Bi	209	1,988,630	2.06	2208562	90.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	096SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 19:23
Sample Name	HS17041053-16MS	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	212.788	212.788	4.72
Be	9	6	1	ppb	127.901	127.901	2.95
B	11	6	1	ppb	592.149	592.149	1.76
Na	23	72	1	ppb	9456.914	9456.914	0.68
Na	23	72	2	ppb	9472.400	9472.400	1.36
Mg	24	72	1	ppb	46286.097	46286.097	1.20
Al	27	72	1	ppb	107456.307	107456.307	1.61
P	31	72	1	ppb	3146.022	3146.022	2.49
K	39	72	1	ppb	40519.575	40519.575	0.78
Ca	44	72	1	ppb	77055.836	77055.836	1.06
Ca	44	72	2	ppb	72407.014	72407.014	0.74
Ti	47	72	1	ppb	2735.970	2735.970	6.02
Ti	47	72	2	ppb	2492.031	2492.031	0.76
V	51	72	1	ppb	288.028	288.028	0.90
V	51	72	2	ppb	278.808	278.808	0.42
Cr	52	72	1	ppb	190.078	190.078	0.47
Cr	52	72	2	ppb	185.199	185.199	0.92
Mn	55	72	1	ppb	3212.244	3212.244	1.32
Mn	55	72	2	ppb	3257.681	3257.681	1.04
Fe	56	72	1	ppb	135850.211	135850.211	1.01
Fe	56	72	2	ppb	131916.993	131916.993	0.91
Co	59	72	1	ppb	144.066	144.066	0.60
Co	59	72	2	ppb	145.500	145.500	0.64
Ni	60	72	1	ppb	194.045	194.045	0.81
Ni	60	72	2	ppb	193.473	193.473	0.80
Cu	63	72	1	ppb	180.864	180.864	0.57
Cu	63	72	2	ppb	186.096	186.096	0.54
Cu	65	72	1	ppb	189.031	189.031	0.43
Zn	66	72	1	ppb	659.633	659.633	2.53
Zn	66	72	2	ppb	627.684	627.684	0.38
Zn	68	72	1	ppb	649.228	649.228	0.49
As	75	72	1	ppb	145.705	145.705	1.20
As	75	72	2	ppb	142.451	142.451	0.50
Se	78	72	1	ppb	103.480	103.480	0.28
Se	78	72	2	ppb	98.022	98.022	6.34
Se	82	72	1	ppb	95.839	95.839	1.03
Sr	88	72	1	ppb	349.226	349.226	0.36
Mo	95	72	1	ppb	91.513	91.513	1.46
Mo	97	72	1	ppb	91.611	91.611	1.64
Rh	103	115	1	ppb	272.523	272.523	11.75
Pd	105	115	1	ppb	1691.260	1691.260	2.12
Ag	107	72	1	ppb	93.034	93.034	0.72
Ag	109	72	1	ppb	93.115	93.115	0.38
Cd	111	115	1	ppb	102.397	102.397	1.51
Cd	114	115	1	ppb	102.207	102.207	1.54
Sn	118	72	1	ppb	97.624	97.624	1.11

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	96.577	96.577	0.47
Sb	121	72	1	ppb	48.252	48.252	1.01
Sb	121	72	2	ppb	48.052	48.052	0.75
Sb	123	72	1	ppb	48.076	48.076	0.65
Ba	135	115	1	ppb	1041.851	1041.851	1.46
Ba	137	115	1	ppb	1015.823	1015.823	0.94
W	182	209	1	ppb	5266.108	5266.108	5.14
Pt	195	209	1	ppb	2096.455	2096.455	36.73
Au	197	209	1	ppb	-601.661	-601.661	-28.62
Tl	203	209	1	ppb	96.825	96.825	3.57
Tl	205	209	1	ppb	89.108	89.108	3.46
Pb	206	209	1	ppb	320.145	320.145	0.88
Pb	207	209	1	ppb	284.788	284.788	1.00
Pb	208	209	1	ppb	297.796	297.796	1.21
U	238	209	1	ppb	102.982	102.982	0.85

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	221,131	2.84	387999	57.0	70	125	IS Failed
1	Ge	72	1,922,669	1.91	2178734	88.2	70	125	
2	Ge	72	238,912	0.71	272530	87.7	70	125	
1	In	115	1,875,574	2.43	2313478	81.1	70	125	
1	Bi	209	1,804,852	1.78	2208562	81.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	097SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 19:28
Sample Name	HS17041053-16MSD	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	208.362	208.362	1.52
Be	9	6	1	ppb	124.468	124.468	1.83
B	11	6	1	ppb	586.636	586.636	1.66
Na	23	72	1	ppb	9282.716	9282.716	1.28
Na	23	72	2	ppb	9235.684	9235.684	0.68
Mg	24	72	1	ppb	45106.639	45106.639	0.59
Al	27	72	1	ppb	107407.421	107407.421	1.17
P	31	72	1	ppb	3209.832	3209.832	1.36
K	39	72	1	ppb	40145.702	40145.702	1.25
Ca	44	72	1	ppb	74152.352	74152.352	1.10
Ca	44	72	2	ppb	69757.276	69757.276	0.27
Ti	47	72	1	ppb	2676.779	2676.779	1.25
Ti	47	72	2	ppb	2484.410	2484.410	1.22
V	51	72	1	ppb	287.706	287.706	2.53
V	51	72	2	ppb	272.635	272.635	0.32
Cr	52	72	1	ppb	184.426	184.426	1.08
Cr	52	72	2	ppb	179.726	179.726	0.60
Mn	55	72	1	ppb	2670.311	2670.311	1.63
Mn	55	72	2	ppb	2722.794	2722.794	1.29
Fe	56	72	1	ppb	133714.522	133714.522	1.47
Fe	56	72	2	ppb	129112.115	129112.115	0.26
Co	59	72	1	ppb	139.890	139.890	2.21
Co	59	72	2	ppb	140.834	140.834	0.44
Ni	60	72	1	ppb	193.230	193.230	0.49
Ni	60	72	2	ppb	191.881	191.881	0.61
Cu	63	72	1	ppb	179.783	179.783	0.55
Cu	63	72	2	ppb	183.379	183.379	0.33
Cu	65	72	1	ppb	187.488	187.488	0.66
Zn	66	72	1	ppb	601.998	601.998	0.45
Zn	66	72	2	ppb	584.691	584.691	0.60
Zn	68	72	1	ppb	610.881	610.881	0.33
As	75	72	1	ppb	146.972	146.972	1.25
As	75	72	2	ppb	140.445	140.445	1.09
Se	78	72	1	ppb	104.811	104.811	2.11
Se	78	72	2	ppb	96.458	96.458	1.98
Se	82	72	1	ppb	94.936	94.936	2.12
Sr	88	72	1	ppb	343.924	343.924	0.95
Mo	95	72	1	ppb	90.465	90.465	1.80
Mo	97	72	1	ppb	90.191	90.191	1.30
Rh	103	115	1	ppb	219.449	219.449	10.20
Pd	105	115	1	ppb	1659.272	1659.272	7.24
Ag	107	72	1	ppb	91.777	91.777	1.56
Ag	109	72	1	ppb	91.711	91.711	1.11
Cd	111	115	1	ppb	101.336	101.336	2.00
Cd	114	115	1	ppb	101.314	101.314	2.02
Sn	118	72	1	ppb	95.319	95.319	1.09

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	94.629	94.629	1.62
Sb	121	72	1	ppb	49.887	49.887	1.11
Sb	121	72	2	ppb	50.229	50.229	0.46
Sb	123	72	1	ppb	49.539	49.539	1.53
Ba	135	115	1	ppb	1010.754	1010.754	1.83
Ba	137	115	1	ppb	990.598	990.598	1.83
W	182	209	1	ppb	5284.526	5284.526	4.27
Pt	195	209	1	ppb	1820.791	1820.791	50.48
Au	197	209	1	ppb	-968.405	-968.405	-96.26
Tl	203	209	1	ppb	98.708	98.708	2.57
Tl	205	209	1	ppb	90.733	90.733	2.81
Pb	206	209	1	ppb	262.830	262.830	1.55
Pb	207	209	1	ppb	248.229	248.229	1.98
Pb	208	209	1	ppb	255.632	255.632	1.95
U	238	209	1	ppb	102.868	102.868	1.66

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	223,598	2.31	387999	57.6	70	125	IS Failed
1	Ge	72	1,912,636	1.24	2178734	87.8	70	125	
2	Ge	72	242,591	0.09	272530	89.0	70	125	
1	In	115	1,855,938	2.86	2313478	80.2	70	125	
1	Bi	209	1,752,045	2.77	2208562	79.3	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	098SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 19:32
Sample Name	HS17041053-16PDS	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	67.059	67.059	0.84
Be	9	6	1	ppb	109.677	109.677	0.98
B	11	6	1	ppb	57.143	57.143	0.71
Na	23	72	1	ppb	9289.477	9289.477	0.10
Na	23	72	2	ppb	9363.494	9363.494	1.27
Mg	24	72	1	ppb	42584.878	42584.878	1.21
Al	27	72	1	ppb	73489.406	73489.406	1.12
P	31	72	1	ppb	2864.764	2864.764	1.09
K	39	72	1	ppb	36273.559	36273.559	0.99
Ca	44	72	1	ppb	75442.684	75442.684	0.21
Ca	44	72	2	ppb	69979.032	69979.032	0.19
Ti	47	72	1	ppb	2034.477	2034.477	1.12
Ti	47	72	2	ppb	1878.259	1878.259	0.96
V	51	72	1	ppb	282.638	282.638	2.63
V	51	72	2	ppb	273.284	273.284	0.78
Cr	52	72	1	ppb	180.259	180.259	1.05
Cr	52	72	2	ppb	175.137	175.137	1.18
Mn	55	72	1	ppb	2591.773	2591.773	0.93
Mn	55	72	2	ppb	2647.676	2647.676	1.88
Fe	56	72	1	ppb	129393.972	129393.972	0.82
Fe	56	72	2	ppb	125120.515	125120.515	1.72
Co	59	72	1	ppb	141.866	141.866	1.76
Co	59	72	2	ppb	143.059	143.059	0.93
Ni	60	72	1	ppb	192.389	192.389	1.29
Ni	60	72	2	ppb	189.188	189.188	1.85
Cu	63	72	1	ppb	181.073	181.073	0.93
Cu	63	72	2	ppb	184.016	184.016	1.33
Cu	65	72	1	ppb	188.544	188.544	1.65
Zn	66	72	1	ppb	558.651	558.651	1.43
Zn	66	72	2	ppb	539.374	539.374	0.86
Zn	68	72	1	ppb	565.713	565.713	1.62
As	75	72	1	ppb	148.176	148.176	2.49
As	75	72	2	ppb	142.982	142.982	0.35
Se	78	72	1	ppb	113.654	113.654	2.59
Se	78	72	2	ppb	105.305	105.305	2.30
Se	82	72	1	ppb	104.047	104.047	1.97
Sr	88	72	1	ppb	233.277	233.277	1.41
Mo	95	72	1	ppb	100.084	100.084	1.49
Mo	97	72	1	ppb	99.763	99.763	0.95
Rh	103	115	1	ppb	229.228	229.228	15.63
Pd	105	115	1	ppb	1585.318	1585.318	3.91
Ag	107	72	1	ppb	94.430	94.430	0.07
Ag	109	72	1	ppb	94.374	94.374	0.63
Cd	111	115	1	ppb	100.813	100.813	1.50
Cd	114	115	1	ppb	97.752	97.752	1.47
Sn	118	72	1	ppb	4.782	4.782	2.39

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	4.738	4.738	2.51
Sb	121	72	1	ppb	97.627	97.627	0.77
Sb	121	72	2	ppb	98.086	98.086	1.61
Sb	123	72	1	ppb	97.193	97.193	1.23
Ba	135	115	1	ppb	942.711	942.711	2.10
Ba	137	115	1	ppb	927.525	927.525	2.61
W	182	209	1	ppb	4299.418	4299.418	3.20
Pt	195	209	1	ppb	1522.052	1522.052	44.32
Au	197	209	1	ppb	-1273.831	-1273.831	-14.88
Tl	203	209	1	ppb	97.487	97.487	2.14
Tl	205	209	1	ppb	89.800	89.800	2.00
Pb	206	209	1	ppb	245.081	245.081	3.15
Pb	207	209	1	ppb	230.273	230.273	2.76
Pb	208	209	1	ppb	237.519	237.519	3.08
U	238	209	1	ppb	2.848	2.848	2.72

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	253,691	1.72	387999	65.4	70	125	IS Failed
1	Ge	72	1,888,999	1.69	2178734	86.7	70	125	
2	Ge	72	241,336	0.91	272530	88.6	70	125	
1	In	115	1,886,777	2.73	2313478	81.6	70	125	
1	Bi	209	1,805,104	3.22	2208562	81.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	099SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 19:37
Sample Name	HS17041053-14	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	56.573	56.573	2.40
Be	9	6	1	ppb	10.666	10.666	1.46
B	11	6	1	ppb	41.249	41.249	5.40
Na	23	72	1	ppb	495.841	495.841	2.96
Na	23	72	2	ppb	482.665	482.665	0.57
Mg	24	72	1	ppb	28282.121	28282.121	2.19
Al	27	72	1	ppb	65752.652	65752.652	2.34
P	31	72	1	ppb	2337.008	2337.008	2.50
K	39	72	1	ppb	24531.948	24531.948	2.66
Ca	44	72	1	ppb	29277.389	29277.389	1.88
Ca	44	72	2	ppb	27399.585	27399.585	0.19
Ti	47	72	1	ppb	2213.413	2213.413	3.02
Ti	47	72	2	ppb	2022.679	2022.679	0.89
V	51	72	1	ppb	185.619	185.619	1.05
V	51	72	2	ppb	177.506	177.506	0.57
Cr	52	72	1	ppb	75.464	75.464	2.02
Cr	52	72	2	ppb	74.309	74.309	0.49
Mn	55	72	1	ppb	2339.674	2339.674	2.32
Mn	55	72	2	ppb	2344.434	2344.434	0.55
Fe	56	72	1	ppb	133861.022	133861.022	2.09
Fe	56	72	2	ppb	125225.379	125225.379	0.74
Co	59	72	1	ppb	48.908	48.908	1.91
Co	59	72	2	ppb	49.962	49.962	1.12
Ni	60	72	1	ppb	95.816	95.816	2.57
Ni	60	72	2	ppb	91.350	91.350	1.39
Cu	63	72	1	ppb	298.487	298.487	3.18
Cu	63	72	2	ppb	284.822	284.822	1.01
Cu	65	72	1	ppb	297.591	297.591	2.11
Zn	66	72	1	ppb	487.527	487.527	2.48
Zn	66	72	2	ppb	464.947	464.947	1.04
Zn	68	72	1	ppb	490.174	490.174	1.84
As	75	72	1	ppb	54.242	54.242	0.88
As	75	72	2	ppb	52.705	52.705	1.25
Se	78	72	1	ppb	16.010	16.010	12.06
Se	78	72	2	ppb	14.819	14.819	1.12
Se	82	72	1	ppb	7.120	7.120	8.72
Sr	88	72	1	ppb	214.126	214.126	1.66
Mo	95	72	1	ppb	4.077	4.077	0.65
Mo	97	72	1	ppb	4.019	4.019	1.55
Rh	103	115	1	ppb	1939.334	1939.334	6.08
Pd	105	115	1	ppb	1959.394	1959.394	0.63
Ag	107	72	1	ppb	0.565	0.565	5.69
Ag	109	72	1	ppb	0.565	0.565	5.12
Cd	111	115	1	ppb	2.184	2.184	7.11

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	2.404	2.404	2.14
Sn	118	72	1	ppb	7.697	7.697	2.08
Sn	119	72	1	ppb	7.372	7.372	2.95
Sb	121	72	1	ppb	58.546	58.546	2.84
Sb	121	72	2	ppb	57.312	57.312	0.44
Sb	123	72	1	ppb	58.372	58.372	2.78
Ba	135	115	1	ppb	672.094	672.094	1.46
Ba	137	115	1	ppb	693.753	693.753	1.85
W	182	209	1	ppb	4191.095	4191.095	5.25
Pt	195	209	1	ppb	1369.836	1369.836	42.36
Au	197	209	1	ppb	-1240.230	-1240.230	-48.64
Tl	203	209	1	ppb	3.153	3.153	6.65
Tl	205	209	1	ppb	2.893	2.893	6.34
Pb	206	209	1	ppb	3235.033	3235.033	0.62
Pb	207	209	1	ppb	3045.033	3045.033	0.90
Pb	208	209	1	ppb	3039.065	3039.065	0.75
U	238	209	1	ppb	2.926	2.926	0.53

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	264,572	1.82	387999	68.2	70	125	IS Failed
1	Ge	72	1,906,658	1.55	2178734	87.5	70	125	
2	Ge	72	243,623	0.85	272530	89.4	70	125	
1	In	115	1,970,778	1.02	2313478	85.2	70	125	
1	Bi	209	1,893,783	0.30	2208562	85.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	100SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 19:41
Sample Name	HS17041053-15	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	55.446	55.446	0.56
Be	9	6	1	ppb	9.631	9.631	1.70
B	11	6	1	ppb	37.799	37.799	1.84
Na	23	72	1	ppb	623.307	623.307	0.93
Na	23	72	2	ppb	605.529	605.529	0.30
Mg	24	72	1	ppb	33272.055	33272.055	0.64
Al	27	72	1	ppb	62847.429	62847.429	0.43
P	31	72	1	ppb	4505.684	4505.684	0.85
K	39	72	1	ppb	24861.862	24861.862	0.53
Ca	44	72	1	ppb	35519.620	35519.620	0.32
Ca	44	72	2	ppb	34124.579	34124.579	0.70
Ti	47	72	1	ppb	1955.142	1955.142	0.92
Ti	47	72	2	ppb	1777.723	1777.723	0.26
V	51	72	1	ppb	154.460	154.460	0.53
V	51	72	2	ppb	153.385	153.385	0.57
Cr	52	72	1	ppb	71.505	71.505	0.34
Cr	52	72	2	ppb	70.589	70.589	0.18
Mn	55	72	1	ppb	2334.243	2334.243	0.34
Mn	55	72	2	ppb	2390.431	2390.431	0.42
Fe	56	72	1	ppb	114958.205	114958.205	0.76
Fe	56	72	2	ppb	110000.620	110000.620	0.23
Co	59	72	1	ppb	48.467	48.467	0.60
Co	59	72	2	ppb	49.445	49.445	0.41
Ni	60	72	1	ppb	93.169	93.169	0.36
Ni	60	72	2	ppb	89.594	89.594	0.75
Cu	63	72	1	ppb	2092.945	2092.945	0.46
Cu	63	72	2	ppb	2076.615	2076.615	0.73
Cu	65	72	1	ppb	2179.213	2179.213	0.77
Zn	66	72	1	ppb	764.429	764.429	0.14
Zn	66	72	2	ppb	691.488	691.488	0.15
Zn	68	72	1	ppb	730.999	730.999	0.40
As	75	72	1	ppb	60.229	60.229	0.59
As	75	72	2	ppb	56.669	56.669	1.27
Se	78	72	1	ppb	16.236	16.236	5.76
Se	78	72	2	ppb	15.291	15.291	3.38
Se	82	72	1	ppb	6.589	6.589	6.42
Sr	88	72	1	ppb	314.950	314.950	0.61
Mo	95	72	1	ppb	3.755	3.755	1.99
Mo	97	72	1	ppb	3.692	3.692	0.87
Rh	103	115	1	ppb	44043.406	44043.406	1.19
Pd	105	115	1	ppb	1994.791	1994.791	2.77
Ag	107	72	1	ppb	2.774	2.774	0.37
Ag	109	72	1	ppb	2.742	2.742	1.95
Cd	111	115	1	ppb	3.448	3.448	2.92

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	5.319	5.319	3.52
Sn	118	72	1	ppb	56.976	56.976	1.37
Sn	119	72	1	ppb	53.060	53.060	0.88
Sb	121	72	1	ppb	511.182	511.182	0.67
Sb	121	72	2	ppb	490.625	490.625	0.37
Sb	123	72	1	ppb	504.036	504.036	0.98
Ba	135	115	1	ppb	826.467	826.467	2.69
Ba	137	115	1	ppb	841.518	841.518	2.33
W	182	209	1	ppb	2674.000	2674.000	3.67
Pt	195	209	1	ppb	114.217	114.217	155.69
Au	197	209	1	ppb	-1500.049	-1500.049	-11.63
Tl	203	209	1	ppb	1.202	1.202	9.86
Tl	205	209	1	ppb	1.133	1.133	9.12
Pb	206	209	1	ppb	55433.401	55433.401	1.29
Pb	207	209	1	ppb	51592.167	51592.167	0.98
Pb	208	209	1	ppb	51772.135	51772.135	0.97
U	238	209	1	ppb	1.980	1.980	0.70

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	273,099	0.87	387999	70.4	70	125	
1	Ge	72	1,945,088	1.13	2178734	89.3	70	125	
2	Ge	72	251,141	0.12	272530	92.2	70	125	
1	In	115	1,957,591	1.65	2313478	84.6	70	125	
1	Bi	209	2,566,640	2.15	2208562	116.2	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	101SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 19:45
Sample Name	HS17041053-17	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	59.064	59.064	2.01
Be	9	6	1	ppb	10.921	10.921	3.12
B	11	6	1	ppb	36.248	36.248	4.51
Na	23	72	1	ppb	666.705	666.705	0.58
Na	23	72	2	ppb	641.417	641.417	2.84
Mg	24	72	1	ppb	35202.864	35202.864	2.31
Al	27	72	1	ppb	67753.169	67753.169	1.79
P	31	72	1	ppb	5068.424	5068.424	1.60
K	39	72	1	ppb	26987.012	26987.012	2.47
Ca	44	72	1	ppb	37804.355	37804.355	2.23
Ca	44	72	2	ppb	36912.120	36912.120	0.21
Ti	47	72	1	ppb	1969.166	1969.166	2.59
Ti	47	72	2	ppb	1853.176	1853.176	0.89
V	51	72	1	ppb	171.655	171.655	2.34
V	51	72	2	ppb	166.559	166.559	0.54
Cr	52	72	1	ppb	76.877	76.877	1.45
Cr	52	72	2	ppb	76.580	76.580	0.68
Mn	55	72	1	ppb	3122.804	3122.804	2.04
Mn	55	72	2	ppb	3202.614	3202.614	0.36
Fe	56	72	1	ppb	123838.434	123838.434	2.06
Fe	56	72	2	ppb	118458.420	118458.420	0.52
Co	59	72	1	ppb	78.537	78.537	1.78
Co	59	72	2	ppb	81.726	81.726	0.89
Ni	60	72	1	ppb	104.714	104.714	2.72
Ni	60	72	2	ppb	101.141	101.141	0.41
Cu	63	72	1	ppb	1506.283	1506.283	2.34
Cu	63	72	2	ppb	1514.567	1514.567	0.68
Cu	65	72	1	ppb	1568.587	1568.587	1.80
Zn	66	72	1	ppb	750.078	750.078	2.03
Zn	66	72	2	ppb	688.870	688.870	0.38
Zn	68	72	1	ppb	713.803	713.803	1.53
As	75	72	1	ppb	67.714	67.714	1.36
As	75	72	2	ppb	61.328	61.328	1.05
Se	78	72	1	ppb	16.383	16.383	5.99
Se	78	72	2	ppb	16.647	16.647	2.90
Se	82	72	1	ppb	7.272	7.272	7.30
Sr	88	72	1	ppb	315.777	315.777	3.20
Mo	95	72	1	ppb	4.294	4.294	1.18
Mo	97	72	1	ppb	4.137	4.137	3.20
Rh	103	115	1	ppb	40483.228	40483.228	0.33
Pd	105	115	1	ppb	2233.560	2233.560	3.10
Ag	107	72	1	ppb	2.798	2.798	2.24
Ag	109	72	1	ppb	2.809	2.809	3.77
Cd	111	115	1	ppb	4.180	4.180	3.53

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	5.770	5.770	1.20
Sn	118	72	1	ppb	55.769	55.769	2.55
Sn	119	72	1	ppb	52.234	52.234	2.75
Sb	121	72	1	ppb	432.267	432.267	2.56
Sb	121	72	2	ppb	421.388	421.388	0.58
Sb	123	72	1	ppb	434.207	434.207	2.38
Ba	135	115	1	ppb	979.670	979.670	0.63
Ba	137	115	1	ppb	957.277	957.277	2.31
W	182	209	1	ppb	4898.723	4898.723	3.64
Pt	195	209	1	ppb	606.047	606.047	24.77
Au	197	209	1	ppb	-1490.248	-1490.248	-11.34
Tl	203	209	1	ppb	1.138	1.138	11.49
Tl	205	209	1	ppb	1.084	1.084	11.08
Pb	206	209	1	ppb	51186.796	51186.796	1.00
Pb	207	209	1	ppb	47460.217	47460.217	0.98
Pb	208	209	1	ppb	47708.789	47708.789	0.95
U	238	209	1	ppb	2.114	2.114	2.19

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	277,398	0.72	387999	71.5	70	125	
1	Ge	72	1,980,950	0.61	2178734	90.9	70	125	
2	Ge	72	252,382	0.12	272530	92.6	70	125	
1	In	115	1,943,170	0.07	2313478	84.0	70	125	
1	Bi	209	2,519,252	0.50	2208562	114.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	102SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 19:50
Sample Name	HS17041053-18	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	67.703	67.703	1.75
Be	9	6	1	ppb	8.855	8.855	1.64
B	11	6	1	ppb	36.104	36.104	3.61
Na	23	72	1	ppb	487.103	487.103	4.61
Na	23	72	2	ppb	462.262	462.262	2.23
Mg	24	72	1	ppb	31694.687	31694.687	0.92
Al	27	72	1	ppb	82020.858	82020.858	0.67
P	31	72	1	ppb	2505.731	2505.731	0.86
K	39	72	1	ppb	26331.925	26331.925	0.41
Ca	44	72	1	ppb	57709.018	57709.018	0.88
Ca	44	72	2	ppb	53653.517	53653.517	0.33
Ti	47	72	1	ppb	1934.793	1934.793	1.91
Ti	47	72	2	ppb	1764.862	1764.862	0.93
V	51	72	1	ppb	198.947	198.947	0.67
V	51	72	2	ppb	176.636	176.636	0.34
Cr	52	72	1	ppb	87.558	87.558	0.67
Cr	52	72	2	ppb	85.972	85.972	0.13
Mn	55	72	1	ppb	2592.412	2592.412	0.14
Mn	55	72	2	ppb	2648.914	2648.914	0.57
Fe	56	72	1	ppb	118789.543	118789.543	0.24
Fe	56	72	2	ppb	113406.451	113406.451	0.61
Co	59	72	1	ppb	47.269	47.269	1.68
Co	59	72	2	ppb	48.738	48.738	0.34
Ni	60	72	1	ppb	99.161	99.161	1.04
Ni	60	72	2	ppb	96.371	96.371	0.21
Cu	63	72	1	ppb	89.282	89.282	1.07
Cu	63	72	2	ppb	89.616	89.616	0.22
Cu	65	72	1	ppb	93.259	93.259	1.04
Zn	66	72	1	ppb	416.800	416.800	0.26
Zn	66	72	2	ppb	399.525	399.525	0.41
Zn	68	72	1	ppb	422.640	422.640	0.58
As	75	72	1	ppb	63.135	63.135	1.77
As	75	72	2	ppb	48.172	48.172	1.37
Se	78	72	1	ppb	15.793	15.793	2.00
Se	78	72	2	ppb	12.651	12.651	19.39
Se	82	72	1	ppb	5.835	5.835	8.22
Sr	88	72	1	ppb	241.494	241.494	1.04
Mo	95	72	1	ppb	2.967	2.967	1.35
Mo	97	72	1	ppb	2.916	2.916	5.86
Rh	103	115	1	ppb	156.133	156.133	15.29
Pd	105	115	1	ppb	1668.539	1668.539	6.94
Ag	107	72	1	ppb	0.396	0.396	6.75
Ag	109	72	1	ppb	0.375	0.375	4.79
Cd	111	115	1	ppb	1.913	1.913	3.55

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	1.956	1.956	1.33
Sn	118	72	1	ppb	4.958	4.958	1.84
Sn	119	72	1	ppb	4.774	4.774	2.89
Sb	121	72	1	ppb	3.272	3.272	3.87
Sb	121	72	2	ppb	3.324	3.324	1.23
Sb	123	72	1	ppb	3.248	3.248	6.03
Ba	135	115	1	ppb	848.994	848.994	0.75
Ba	137	115	1	ppb	873.850	873.850	0.92
W	182	209	1	ppb	4447.930	4447.930	1.94
Pt	195	209	1	ppb	1231.933	1231.933	27.78
Au	197	209	1	ppb	-584.050	-584.050	-74.10
Tl	203	209	1	ppb	1.454	1.454	5.02
Tl	205	209	1	ppb	1.327	1.327	6.12
Pb	206	209	1	ppb	185.888	185.888	3.01
Pb	207	209	1	ppb	169.353	169.353	3.12
Pb	208	209	1	ppb	178.441	178.441	3.10
U	238	209	1	ppb	2.742	2.742	1.40

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	270,784	4.68	387999	69.8	70	125	IS Failed
1	Ge	72	1,883,498	1.07	2178734	86.4	70	125	
2	Ge	72	239,054	0.32	272530	87.7	70	125	
1	In	115	1,867,301	0.95	2313478	80.7	70	125	
1	Bi	209	1,782,161	0.72	2208562	80.7	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**103CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D25I00.B**
AcqDateTime	**4/25/2017 19:54**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**043CALB.D**
SamplePassFail	**Fail**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	103.07	3.01	ppb	100	103.1	90	110	
Na	23	72	2	9309.94	0.11	ppb	10000	93.1	90	110	
Mg	24	72	1	9332.07	2.84	ppb	10000	93.3	90	110	
K	39	72	1	9814.98	2.71	ppb	10000	98.1	90	110	
Cr	52	72	2	95.17	0.18	ppb	100	95.2	90	110	
Mn	55	72	2	96.80	0.86	ppb	100	96.8	90	110	
Fe	56	72	2	9517.23	0.10	ppb	10000	95.2	90	110	
Co	59	72	2	97.72	0.72	ppb	100	97.7	90	110	
Ni	60	72	2	96.79	1.86	ppb	100	96.8	90	110	
Cu	63	72	2	96.29	0.74	ppb	100	96.3	90	110	
Zn	66	72	2	95.80	0.61	ppb	100	95.8	90	110	
As	75	72	2	98.18	1.24	ppb	100	98.2	90	110	
Se	78	72	2	96.44	5.06	ppb	100	96.4	90	110	
Mo	95	72	1	97.25	3.65	ppb	100	97.2	90	110	
Ag	107	72	1	100.56	2.87	ppb	100	100.6	90	110	
Cd	111	115	1	99.16	1.46	ppb	100	99.2	90	110	
Sb	121	72	2	99.93	0.29	ppb	100	99.9	90	110	
Ba	135	115	1	101.53	1.14	ppb	100	101.5	90	110	
Tl	203	209	1	98.15	3.75	ppb	100	98.1	90	110	
Pb	208	209	1	109.82	0.25	ppb	100	109.8	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	268823	1.89	387999	**69.3**	70	125	IS Failed
Ge	72	1	1956096	2.53	2178734	**89.8**	70	125	
Ge	72	2	244667	0.62	272530	**89.8**	70	125	
In	115	1	2007815	1.32	2313478	**86.8**	70	125	
Bi	209	1	1883558	0.66	2208562	**85.3**	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**106CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 20:08**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**043CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.04	236.34	ppb	2.5	
Be	9	6	1	0.11	22.06	ppb	1	
B	11	6	1	16.76	4.44	ppb	5	>2.2*DL
Na	23	72	1	10.85	6.05	ppb	250	
Na	23	72	2	6.59	11.81	ppb	250	
Mg	24	72	1	13.54	6.01	ppb	250	
Al	27	72	1	10.93	37.09	ppb	5	>2.2*DL
P	31	72	1	-2.85	-15.93	ppb	5	
K	39	72	1	1.08	559.76	ppb	250	
Ca	44	72	1	-35.07	-29.64	ppb	250	
Ca	44	72	2	55.87	17.27	ppb	250	
Ti	47	72	1	0.23	60.99	ppb	2.5	
Ti	47	72	2	0.12	84.56	ppb	2.5	
V	51	72	1	12.61	13.62	ppb	2.5	>2.2*DL
V	51	72	2	0.23	8.42	ppb	2.5	
Cr	52	72	1	0.30	20.64	ppb	2.5	
Cr	52	72	2	0.07	14.97	ppb	2.5	
Mn	55	72	1	0.55	9.91	ppb	2.5	
Mn	55	72	2	0.49	14.86	ppb	2.5	
Fe	56	72	1	10.46	30.33	ppb	100	
Fe	56	72	2	20.44	2.08	ppb	100	
Co	59	72	1	0.09	1.94	ppb	2.5	
Co	59	72	2	0.10	17.47	ppb	2.5	
Ni	60	72	1	0.12	4.63	ppb	2.5	
Ni	60	72	2	0.14	9.66	ppb	2.5	
Cu	63	72	1	0.84	11.36	ppb	2.5	
Cu	63	72	2	0.68	6.23	ppb	2.5	
Cu	65	72	1	0.79	6.76	ppb	2.5	
Zn	66	72	1	0.01	758.85	ppb	2.5	
Zn	66	72	2	0.28	17.77	ppb	2.5	
Zn	68	72	1	0.46	34.52	ppb	2.5	
As	75	72	1	1.58	87.11	ppb	2.5	
As	75	72	2	0.09	37.49	ppb	2.5	
Se	78	72	1	10.35	16.65	ppb	2.5	>2.2*DL
Se	78	72	2	0.58	58.64	ppb	2.5	
Se	82	72	1	0.19	92.24	ppb	2.5	
Sr	88	72	1	0.22	19.60	ppb	2.5	
Mo	95	72	1	0.23	9.93	ppb	2.5	
Mo	97	72	1	0.22	12.43	ppb	2.5	
Ag	107	72	1	0.08	3.84	ppb	2.5	
Ag	109	72	1	0.09	5.55	ppb	2.5	
Cd	111	115	1	0.09	16.97	ppb	2.5	
Cd	114	115	1	0.10	2.27	ppb	2.5	
Sn	118	72	1	0.24	8.44	ppb	2.5	
Sn	119	72	1	0.22	8.99	ppb	2.5	
Sb	121	72	1	0.36	9.84	ppb	2.5	
Sb	121	72	2	0.45	1.64	ppb	2.5	
Sb	123	72	1	0.36	12.06	ppb	2.5	
Ba	135	115	1	0.18	10.88	ppb	2.5	
Ba	137	115	1	0.17	6.70	ppb	2.5	
Tl	203	209	1	1.42	12.08	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.30	9.07	ppb	2.5	
Pb	206	209	1	4.42	5.24	ppb	2.5	>2.2*DL
Pb	207	209	1	4.10	3.37	ppb	2.5	>2.2*DL
Pb	208	209	1	4.09	4.26	ppb	2.5	>2.2*DL
U	238	209	1	0.07	3.64	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	294476	1.60	387999	75.9	70	125	
Ge	72	1	2009318	1.82	2178734	92.2	70	125	
Ge	72	2	265006	0.59	272530	97.2	70	125	
In	115	1	2099165	1.63	2313478	90.7	70	125	
Bi	209	1	1974235	1.07	2208562	89.4	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Blank Report

Sample Name	CAL BLK
Data File Name	108CALB.D
DataPath	C:\ICPMH\1\DATA\17D25I00.B
AcqDateTime	4/25/2017 20:17:00
Type	CalBlk
VialNumber	1101
Dilution	1
Comment	
Operator	[redacted] ICPMS04
Current Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	27559	3.48
Be	9	6	1	81	21.09
B	11	6	1	27296	5.65
Na	23	72	1	114253	9.30
Na	23	72	2	4086	1.72
Mg	24	72	1	40819	27.22
Al	27	72	1	61079	32.14
P	31	72	1	18882	3.57
K	39	72	1	3282976	0.27
Ca	44	72	1	34638	12.32
Ca	44	72	2	260	16.67
Ti	47	72	1	167	29.46
Ti	47	72	2	2	173.21
V	51	72	1	677015	5.40
V	51	72	2	1121	8.43
Cr	52	72	1	21272	7.63
Cr	52	72	2	456	14.01
Mn	55	72	1	16493	9.03
Mn	55	72	2	236	5.36
Fe	56	72	1	1609593	1.46
Fe	56	72	2	11551	2.08
Co	59	72	1	380	14.36
Co	59	72	2	39	21.57
Ni	60	72	1	169	7.98
Ni	60	72	2	51	39.31
Cu	63	72	1	3322	13.09
Cu	63	72	2	967	1.58
Cu	65	72	1	1575	13.48
Zn	66	72	1	1256	6.37
Zn	68	72	1	962	23.78
As	75	72	1	74444	6.42
As	75	72	2	36	10.75
Se	78	72	1	19455	1.23
Se	78	72	2	16	17.57
Se	82	72	1	272	10.80
Sr	88	72	1	1671	33.96
Mo	95	72	1	222	11.06
Mo	97	72	1	156	16.08
Ag	107	72	1	137	50.70
Ag	109	72	1	142	25.06
Cd	111	115	1	23	79.54
Cd	114	115	1	60	14.69
Sn	118	72	1	1018	5.52
Sn	119	72	1	397	9.91
Sb	121	72	1	2856	6.09
Sb	121	72	2	710	8.70

Calibration Blank Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	123	72	1	2189	6.45
Ba	135	115	1	192	16.39
Ba	137	115	1	350	10.82
Tl	203	209	1	2943	11.00
Tl	205	209	1	6777	11.55
Pb	206	209	1	16360	4.67
Pb	207	209	1	13533	6.70
Pb	208	209	1	62957	6.36

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Li	6	1	295434	2.81
Ge	72	1	2031160	2.04
Ge	72	2	249610	0.59
In	115	1	2141033	2.02
Bi	209	1	1986371	1.93

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	2/10/200
Data File Name	109CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 20:22
Type	CalStd
VialNumber	1102
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	108CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	38443	8.02
Be	9	6	1	4861	5.96
B	11	6	1	35528	2.78
Na	23	72	1	2115793	3.48
Na	23	72	2	51941	1.64
Mg	24	72	1	1519117	2.91
Al	27	72	1	103707	24.89
P	31	72	1	26692	3.22
K	39	72	1	5479541	1.81
Ca	44	72	1	104150	6.75
Ca	44	72	2	1706	6.51
Ti	47	72	1	2245	7.94
Ti	47	72	2	86	9.81
V	51	72	1	685126	7.24
V	51	72	2	4470	4.90
Cr	52	72	1	45872	3.36
Cr	52	72	2	4982	6.91
Mn	55	72	1	49692	6.13
Mn	55	72	2	2553	2.30
Fe	56	72	1	4461191	2.48
Fe	56	72	2	379508	0.58
Co	59	72	1	27741	3.42
Co	59	72	2	6643	3.65
Ni	60	72	1	6389	0.41
Ni	60	72	2	1767	4.64
Cu	63	72	1	18124	4.67
Cu	63	72	2	5735	2.13
Cu	65	72	1	8629	2.51
Zn	66	72	1	6040	4.78
Zn	68	72	1	4436	11.23
As	75	72	1	80177	8.66
As	75	72	2	869	4.10
Se	78	72	1	20699	1.94
Se	78	72	2	64	14.44
Se	82	72	1	584	13.13
Sr	88	72	1	42090	5.10
Mo	95	72	1	7513	2.93
Mo	97	72	1	4655	2.84
Ag	107	72	1	18976	2.62
Ag	109	72	1	18791	1.64
Cd	111	115	1	4110	4.77
Cd	114	115	1	10139	1.77
Sn	118	72	1	12177	3.74
Sn	119	72	1	4629	5.66

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	20887	3.79
Sb	121	72	2	4610	0.33
Sb	123	72	1	15950	3.21
Ba	135	115	1	4107	7.59
Ba	137	115	1	6988	8.14
Tl	203	209	1	15005	2.05
Tl	205	209	1	35764	3.63
Pb	206	209	1	27618	6.11
Pb	207	209	1	23761	4.90
Pb	208	209	1	108209	6.10

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	301391	5.92	295434	102.0	70	125	
Ge	72	1	2070652	2.00	2031160	101.9	70	125	
Ge	72	2	247936	0.26	249610	99.3	70	125	
In	115	1	2173751	3.23	2141033	101.5	70	125	
Bi	209	1	2032869	1.51	1986371	102.3	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	5/25/500
Data File Name	110CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 20:26
Type	CalStd
VialNumber	1103
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	108CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	51658	1.78
Be	9	6	1	11778	1.69
B	11	6	1	48444	3.80
Na	23	72	1	4841775	0.52
Na	23	72	2	124570	1.14
Mg	24	72	1	3536257	0.55
Al	27	72	1	127804	15.17
P	31	72	1	36012	1.66
K	39	72	1	8252533	0.87
Ca	44	72	1	188953	3.86
Ca	44	72	2	3629	5.78
Ti	47	72	1	4925	0.45
Ti	47	72	2	260	11.18
V	51	72	1	707557	5.80
V	51	72	2	9639	0.88
Cr	52	72	1	80124	2.61
Cr	52	72	2	11758	1.94
Mn	55	72	1	93800	2.59
Mn	55	72	2	6068	3.86
Fe	56	72	1	8277682	2.02
Fe	56	72	2	925189	0.76
Co	59	72	1	66037	0.40
Co	59	72	2	16783	2.08
Ni	60	72	1	15221	4.43
Ni	60	72	2	4500	2.97
Cu	63	72	1	39040	1.89
Cu	63	72	2	12752	1.52
Cu	65	72	1	18830	1.63
Zn	66	72	1	13056	3.17
Zn	68	72	1	9473	2.67
As	75	72	1	87311	6.49
As	75	72	2	2036	2.58
Se	78	72	1	21186	0.58
Se	78	72	2	121	3.23
Se	82	72	1	966	3.61
Sr	88	72	1	96364	2.15
Mo	95	72	1	17949	1.90
Mo	97	72	1	11225	1.96
Ag	107	72	1	46065	1.31
Ag	109	72	1	44307	1.78
Cd	111	115	1	10018	0.44
Cd	114	115	1	24274	1.09
Sn	118	72	1	28224	0.84
Sn	119	72	1	10794	1.52

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	45560	1.08
Sb	121	72	2	10685	0.47
Sb	123	72	1	34796	0.57
Ba	135	115	1	9274	1.46
Ba	137	115	1	15866	1.02
Tl	203	209	1	33061	3.69
Tl	205	209	1	78656	4.17
Pb	206	209	1	42450	3.62
Pb	207	209	1	37398	3.59
Pb	208	209	1	169497	3.39

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	292120	0.44	295434	98.9	70	125	
Ge	72	1	2023727	1.53	2031160	99.6	70	125	
Ge	72	2	247188	0.19	249610	99.0	70	125	
In	115	1	2109644	0.79	2141033	98.5	70	125	
Bi	209	1	1970447	0.95	1986371	99.2	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	10/50/1000
Data File Name	111CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 20:31
Type	CalStd
VialNumber	1104
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	108CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	76431	1.36
Be	9	6	1	22896	2.49
B	11	6	1	76626	4.04
Na	23	72	1	9835338	1.00
Na	23	72	2	246787	0.21
Mg	24	72	1	7177425	0.70
Al	27	72	1	166386	13.68
P	31	72	1	53943	0.61
K	39	72	1	13632987	0.65
Ca	44	72	1	347887	0.50
Ca	44	72	2	6617	4.13
Ti	47	72	1	10018	1.38
Ti	47	72	2	582	9.20
V	51	72	1	749623	4.19
V	51	72	2	18654	1.21
Cr	52	72	1	142675	1.06
Cr	52	72	2	23043	1.75
Mn	55	72	1	176598	0.80
Mn	55	72	2	11856	1.56
Fe	56	72	1	15427611	0.69
Fe	56	72	2	1928729	0.66
Co	59	72	1	135785	2.09
Co	59	72	2	34146	0.17
Ni	60	72	1	30480	1.62
Ni	60	72	2	9348	0.64
Cu	63	72	1	77140	0.92
Cu	63	72	2	25459	0.55
Cu	65	72	1	36987	0.67
Zn	66	72	1	24244	2.34
Zn	68	72	1	17535	0.20
As	75	72	1	102400	4.97
As	75	72	2	4264	1.95
Se	78	72	1	23408	0.06
Se	78	72	2	234	8.72
Se	82	72	1	1725	4.38
Sr	88	72	1	196849	0.45
Mo	95	72	1	37415	1.57
Mo	97	72	1	22627	1.20
Ag	107	72	1	95537	0.82
Ag	109	72	1	91318	1.87
Cd	111	115	1	20052	3.95
Cd	114	115	1	49094	0.62
Sn	118	72	1	56899	1.18
Sn	119	72	1	22051	0.21

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	91379	0.70
Sb	121	72	2	20945	1.28
Sb	123	72	1	69762	0.98
Ba	135	115	1	18736	1.66
Ba	137	115	1	32925	1.12
Tl	203	209	1	66566	4.86
Tl	205	209	1	157950	5.33
Pb	206	209	1	73749	0.11
Pb	207	209	1	65432	1.38
Pb	208	209	1	296948	1.14

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	289968	2.31	295434	98.1	70	125	
Ge	72	1	2072508	2.55	2031160	102.0	70	125	
Ge	72	2	246222	0.36	249610	98.6	70	125	
In	115	1	2154430	1.88	2141033	100.6	70	125	
Bi	209	1	2002455	1.22	1986371	100.8	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	100/500/10K
Data File Name	112CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 20:36
Type	CalStd
VialNumber	1105
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	108CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	489109	0.74
Be	9	6	1	219703	1.38
B	11	6	1	583418	4.06
Na	23	72	1	90934785	1.23
Na	23	72	2	2326244	0.52
Mg	24	72	1	66637487	1.26
Al	27	72	1	989750	1.19
P	31	72	1	354036	0.81
K	39	72	1	99297886	1.18
Ca	44	72	1	2960906	1.29
Ca	44	72	2	59988	0.43
Ti	47	72	1	92785	1.80
Ti	47	72	2	4953	2.22
V	51	72	1	1833356	1.92
V	51	72	2	164877	0.71
Cr	52	72	1	1167470	1.35
Cr	52	72	2	212743	0.96
Mn	55	72	1	1572248	1.43
Mn	55	72	2	109130	0.27
Fe	56	72	1	130889542	0.97
Fe	56	72	2	17539166	0.15
Co	59	72	1	1259093	1.00
Co	59	72	2	315790	0.59
Ni	60	72	1	285322	1.24
Ni	60	72	2	84956	0.44
Cu	63	72	1	699610	0.42
Cu	63	72	2	230469	0.72
Cu	65	72	1	334572	1.05
Zn	66	72	1	221507	0.47
Zn	68	72	1	156950	0.86
As	75	72	1	335066	0.38
As	75	72	2	38658	0.79
Se	78	72	1	53201	0.89
Se	78	72	2	2007	2.75
Se	82	72	1	13682	1.75
Sr	88	72	1	1910025	1.87
Mo	95	72	1	346788	1.52
Mo	97	72	1	213838	1.43
Ag	107	72	1	889028	1.05
Ag	109	72	1	857500	1.06
Cd	111	115	1	192287	0.45
Cd	114	115	1	462321	1.49
Sn	118	72	1	527216	0.91
Sn	119	72	1	204690	1.73

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	841528	0.76
Sb	121	72	2	193580	0.11
Sb	123	72	1	642001	1.07
Ba	135	115	1	177273	0.96
Ba	137	115	1	303731	1.74
Tl	203	209	1	653515	3.76
Tl	205	209	1	1654910	5.67
Pb	206	209	1	582910	1.27
Pb	207	209	1	523714	0.74
Pb	208	209	1	2354570	0.86

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	271305	2.28	295434	91.8	70	125	
Ge	72	1	2057363	2.49	2031160	101.3	70	125	
Ge	72	2	245235	0.14	249610	98.2	70	125	
In	115	1	2114642	1.95	2141033	98.8	70	125	
Bi	209	1	1983547	2.54	1986371	99.9	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	200/1000/20K
Data File Name	113CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 20:41
Type	CalStd
VialNumber	1106
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	108CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	963225	2.69
Be	9	6	1	432273	0.91
B	11	6	1	1191314	4.62
Na	23	72	1	177422802	1.97
Na	23	72	2	4530797	0.61
Mg	24	72	1	129615638	1.57
Al	27	72	1	1907185	1.18
P	31	72	1	674422	1.91
K	39	72	1	190092333	2.38
Ca	44	72	1	5728551	2.23
Ca	44	72	2	117465	0.52
Ti	47	72	1	181327	2.36
Ti	47	72	2	9813	2.39
V	51	72	1	3111108	1.49
V	51	72	2	327042	1.14
Cr	52	72	1	2324776	2.11
Cr	52	72	2	420387	0.28
Mn	55	72	1	3006836	1.52
Mn	55	72	2	212529	0.69
Fe	56	72	1	254093876	2.03
Fe	56	72	2	34501115	0.64
Co	59	72	1	2532751	1.54
Co	59	72	2	622518	0.71
Ni	60	72	1	548212	1.67
Ni	60	72	2	167247	0.15
Cu	63	72	1	1391693	1.78
Cu	63	72	2	448117	1.02
Cu	65	72	1	638120	1.76
Zn	66	72	1	424512	1.75
Zn	68	72	1	301482	0.99
As	75	72	1	595945	1.05
As	75	72	2	76012	0.62
Se	78	72	1	84968	1.04
Se	78	72	2	3949	1.40
Se	82	72	1	26214	2.32
Sr	88	72	1	3705352	1.14
Mo	95	72	1	675801	1.96
Mo	97	72	1	420078	1.92
Ag	107	72	1	1803368	2.07
Ag	109	72	1	1759055	2.27
Cd	111	115	1	372298	2.17
Cd	114	115	1	896986	1.91
Sn	118	72	1	1033251	1.82
Sn	119	72	1	399615	2.18

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	1724824	2.64
Sb	121	72	2	383865	0.34
Sb	123	72	1	1258900	2.23
Ba	135	115	1	344803	2.67
Ba	137	115	1	591947	2.21
Tl	203	209	1	1270748	4.77
Tl	205	209	1	3214765	4.99
Pb	206	209	1	1119652	1.28
Pb	207	209	1	1010404	1.63
Pb	208	209	1	4690641	1.56

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	242165	0.96	295434	82.0	70	125	
Ge	72	1	1973824	0.79	2031160	97.2	70	125	
Ge	72	2	240928	0.07	249610	96.5	70	125	
In	115	1	2022641	2.35	2141033	94.5	70	125	
Bi	209	1	1872914	1.97	1986371	94.3	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	114SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 20:45
Sample Name	ICCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	95.011	95.011	0.20
Be	9	6	1	ppb	109.806	109.806	0.89
B	11	6	1	ppb	484.420	484.420	4.20
Na	23	72	1	ppb	10154.094	10154.094	0.36
Na	23	72	2	ppb	10137.929	10137.929	0.24
Mg	24	72	1	ppb	10102.063	10102.063	0.87
Al	27	72	1	ppb	100.830	100.830	1.21
P	31	72	1	ppb	533.099	533.099	0.52
K	39	72	1	ppb	10151.468	10151.468	0.33
Ca	44	72	1	ppb	10159.520	10159.520	0.41
Ca	44	72	2	ppb	9997.261	9997.261	1.28
Ti	47	72	1	ppb	101.657	101.657	0.72
Ti	47	72	2	ppb	98.447	98.447	2.45
V	51	72	1	ppb	82.729	82.729	3.18
V	51	72	2	ppb	103.215	103.215	1.84
Cr	52	72	1	ppb	105.641	105.641	0.86
Cr	52	72	2	ppb	102.372	102.372	1.17
Mn	55	72	1	ppb	104.925	104.925	0.09
Mn	55	72	2	ppb	103.872	103.872	1.74
Fe	56	72	1	ppb	10094.843	10094.843	0.91
Fe	56	72	2	ppb	10008.163	10008.163	1.43
Co	59	72	1	ppb	108.546	108.546	0.87
Co	59	72	2	ppb	105.526	105.526	0.86
Ni	60	72	1	ppb	107.511	107.511	0.89
Ni	60	72	2	ppb	105.864	105.864	1.49
Cu	63	72	1	ppb	102.127	102.127	0.62
Cu	63	72	2	ppb	104.608	104.608	1.39
Cu	65	72	1	ppb	105.714	105.714	0.38
Zn	66	72	1	ppb	105.682	105.682	0.33
Zn	66	72	2	ppb	103.232	103.232	0.42
Zn	68	72	1	ppb	106.790	106.790	0.37
As	75	72	1	ppb	95.485	95.485	1.76
As	75	72	2	ppb	105.511	105.511	1.39
Se	78	72	1	ppb	103.376	103.376	1.94
Se	78	72	2	ppb	106.223	106.223	4.26
Se	82	72	1	ppb	106.343	106.343	1.32
Sr	88	72	1	ppb	102.560	102.560	0.55
Mo	95	72	1	ppb	103.472	103.472	1.07
Mo	97	72	1	ppb	103.437	103.437	0.93
Rh	103	115	1	ppb	101.950	101.950	17.83
Pd	105	115	1	ppb	86.246	86.246	46.13
Ag	107	72	1	ppb	106.393	106.393	0.35
Ag	109	72	1	ppb	106.358	106.358	0.69
Cd	111	115	1	ppb	103.212	103.212	0.76

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	103.813	103.813	0.64
Sn	118	72	1	ppb	102.259	102.259	0.75
Sn	119	72	1	ppb	102.349	102.349	0.97
Sb	121	72	1	ppb	107.854	107.854	0.77
Sb	121	72	2	ppb	105.542	105.542	1.02
Sb	123	72	1	ppb	107.256	107.256	0.51
Ba	135	115	1	ppb	104.266	104.266	0.36
Ba	137	115	1	ppb	104.588	104.588	1.08
W	182	209	1	ppb	157.161	157.161	58.25
Pt	195	209	1	ppb	526.966	526.966	65.06
Au	197	209	1	ppb	-151.425	-151.425	-206.85
Tl	203	209	1	ppb	113.580	113.580	2.15
Tl	205	209	1	ppb	114.371	114.371	2.04
Pb	206	209	1	ppb	107.658	107.658	0.29
Pb	207	209	1	ppb	98.871	98.871	0.57
Pb	208	209	1	ppb	100.708	100.708	0.46
U	238	209	1	ppb	104.159	104.159	0.78

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	267,462	0.18	295434	90.5	70	125	
1	Ge	72	2,076,530	0.38	2031160	102.2	70	125	
2	Ge	72	251,816	0.87	249610	100.9	70	125	
1	In	115	2,158,964	0.97	2141033	100.8	70	125	
1	Bi	209	2,004,894	0.66	1986371	100.9	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	115SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 20:50
Sample Name	LLCCV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	4.931	4.931	3.69
Be	9	6	1	ppb	5.057	5.057	4.67
B	11	6	1	ppb	58.184	58.184	8.96
Na	23	72	1	ppb	558.695	558.695	4.96
Na	23	72	2	ppb	534.083	534.083	0.75
Mg	24	72	1	ppb	554.434	554.434	5.15
Al	27	72	1	ppb	8.382	8.382	39.49
P	31	72	1	ppb	31.624	31.624	16.00
K	39	72	1	ppb	583.723	583.723	8.94
Ca	44	72	1	ppb	569.535	569.535	8.66
Ca	44	72	2	ppb	538.817	538.817	0.53
Ti	47	72	1	ppb	5.447	5.447	10.32
Ti	47	72	2	ppb	6.846	6.846	54.17
V	51	72	1	ppb	-25.493	-25.493	-6.19
V	51	72	2	ppb	4.985	4.985	3.98
Cr	52	72	1	ppb	4.787	4.787	9.09
Cr	52	72	2	ppb	5.257	5.257	2.68
Mn	55	72	1	ppb	5.495	5.495	7.91
Mn	55	72	2	ppb	5.379	5.379	0.95
Fe	56	72	1	ppb	549.124	549.124	6.57
Fe	56	72	2	ppb	592.634	592.634	13.19
Co	59	72	1	ppb	5.390	5.390	4.71
Co	59	72	2	ppb	5.376	5.376	3.82
Ni	60	72	1	ppb	5.545	5.545	3.36
Ni	60	72	2	ppb	5.538	5.538	2.02
Cu	63	72	1	ppb	5.322	5.322	5.24
Cu	63	72	2	ppb	5.270	5.270	1.30
Cu	65	72	1	ppb	5.482	5.482	7.44
Zn	66	72	1	ppb	5.465	5.465	7.94
Zn	66	72	2	ppb	4.990	4.990	6.81
Zn	68	72	1	ppb	5.715	5.715	6.12
As	75	72	1	ppb	-5.981	-5.981	-31.29
As	75	72	2	ppb	5.139	5.139	2.99
Se	78	72	1	ppb	7.573	7.573	48.82
Se	78	72	2	ppb	5.395	5.395	10.62
Se	82	72	1	ppb	5.652	5.652	17.75
Sr	88	72	1	ppb	5.313	5.313	6.16
Mo	95	72	1	ppb	5.624	5.624	3.27
Mo	97	72	1	ppb	5.559	5.559	3.11
Rh	103	115	1	ppb	14.357	14.357	54.47
Pd	105	115	1	ppb	9.237	9.237	365.61
Ag	107	72	1	ppb	5.598	5.598	4.62
Ag	109	72	1	ppb	5.528	5.528	5.00
Cd	111	115	1	ppb	5.281	5.281	5.07

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	5.398	5.398	5.07
Sn	118	72	1	ppb	5.520	5.520	6.84
Sn	119	72	1	ppb	5.727	5.727	6.36
Sb	121	72	1	ppb	5.709	5.709	4.98
Sb	121	72	2	ppb	5.455	5.455	4.04
Sb	123	72	1	ppb	5.697	5.697	4.52
Ba	135	115	1	ppb	5.329	5.329	7.76
Ba	137	115	1	ppb	5.234	5.234	2.98
W	182	209	1	ppb	19.538	19.538	198.23
Pt	195	209	1	ppb	-68.021	-68.021	-392.65
Au	197	209	1	ppb	-124.461	-124.461	-314.29
Tl	203	209	1	ppb	6.708	6.708	1.08
Tl	205	209	1	ppb	6.243	6.243	1.17
Pb	206	209	1	ppb	4.353	4.353	14.74
Pb	207	209	1	ppb	4.400	4.400	16.21
Pb	208	209	1	ppb	4.270	4.270	14.62
U	238	209	1	ppb	4.466	4.466	5.10

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	290,565	5.04	295434	98.4	70	125	
1	Ge	72	2,031,637	5.56	2031160	100.0	70	125	
2	Ge	72	253,661	0.86	249610	101.6	70	125	
1	In	115	2,150,652	5.23	2141033	100.4	70	125	
1	Bi	209	1,985,882	6.44	1986371	100.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	116SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 20:55
Sample Name	LLCCV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	1.912	1.912	0.82
Be	9	6	1	ppb	1.928	1.928	3.13
B	11	6	1	ppb	20.041	20.041	6.46
Na	23	72	1	ppb	219.921	219.921	2.01
Na	23	72	2	ppb	211.626	211.626	0.59
Mg	24	72	1	ppb	216.689	216.689	1.84
Al	27	72	1	ppb	4.739	4.739	53.37
P	31	72	1	ppb	12.163	12.163	14.24
K	39	72	1	ppb	230.927	230.927	2.69
Ca	44	72	1	ppb	237.978	237.978	8.87
Ca	44	72	2	ppb	226.958	226.958	2.39
Ti	47	72	1	ppb	2.074	2.074	2.84
Ti	47	72	2	ppb	2.317	2.317	10.11
V	51	72	1	ppb	-25.142	-25.142	-4.34
V	51	72	2	ppb	1.666	1.666	8.77
Cr	52	72	1	ppb	1.491	1.491	5.09
Cr	52	72	2	ppb	2.099	2.099	1.51
Mn	55	72	1	ppb	2.129	2.129	6.88
Mn	55	72	2	ppb	2.111	2.111	3.22
Fe	56	72	1	ppb	206.052	206.052	3.97
Fe	56	72	2	ppb	208.408	208.408	0.54
Co	59	72	1	ppb	2.104	2.104	0.33
Co	59	72	2	ppb	2.171	2.171	2.09
Ni	60	72	1	ppb	2.234	2.234	3.02
Ni	60	72	2	ppb	2.159	2.159	8.02
Cu	63	72	1	ppb	1.913	1.913	3.10
Cu	63	72	2	ppb	1.947	1.947	3.14
Cu	65	72	1	ppb	1.988	1.988	4.54
Zn	66	72	1	ppb	2.048	2.048	5.33
Zn	66	72	2	ppb	1.947	1.947	8.76
Zn	68	72	1	ppb	2.257	2.257	8.94
As	75	72	1	ppb	-8.169	-8.169	-17.89
As	75	72	2	ppb	2.003	2.003	8.16
Se	78	72	1	ppb	1.539	1.539	45.64
Se	78	72	2	ppb	2.140	2.140	32.17
Se	82	72	1	ppb	2.072	2.072	1.79
Sr	88	72	1	ppb	2.105	2.105	2.13
Mo	95	72	1	ppb	2.115	2.115	1.51
Mo	97	72	1	ppb	2.174	2.174	10.46
Rh	103	115	1	ppb	3.802	3.802	344.09
Pd	105	115	1	ppb	20.004	20.004	118.15
Ag	107	72	1	ppb	2.134	2.134	2.65
Ag	109	72	1	ppb	2.152	2.152	1.01
Cd	111	115	1	ppb	2.023	2.023	3.85

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	2.065	2.065	2.46
Sn	118	72	1	ppb	2.142	2.142	3.33
Sn	119	72	1	ppb	2.132	2.132	7.26
Sb	121	72	1	ppb	2.134	2.134	2.58
Sb	121	72	2	ppb	2.012	2.012	3.56
Sb	123	72	1	ppb	2.157	2.157	2.88
Ba	135	115	1	ppb	2.027	2.027	4.23
Ba	137	115	1	ppb	2.056	2.056	3.45
W	182	209	1	ppb	-6.708	-6.708	-502.76
Pt	195	209	1	ppb	-133.675	-133.675	-116.40
Au	197	209	1	ppb	-378.648	-378.648	-82.36
Tl	203	209	1	ppb	2.379	2.379	6.72
Tl	205	209	1	ppb	2.210	2.210	6.97
Pb	206	209	1	ppb	0.700	0.700	31.35
Pb	207	209	1	ppb	0.803	0.803	15.68
Pb	208	209	1	ppb	0.717	0.717	20.82
U	238	209	1	ppb	1.717	1.717	1.04

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	298,839	0.67	295434	101.2	70	125	
1	Ge	72	2,064,008	1.40	2031160	101.6	70	125	
2	Ge	72	250,019	0.49	249610	100.2	70	125	
1	In	115	2,186,713	0.50	2141033	102.1	70	125	
1	Bi	209	2,045,530	0.53	1986371	103.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	117SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 20:59
Sample Name	ICCB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.122	0.122	43.15
Be	9	6	1	ppb	0.020	0.020	68.10
B	11	6	1	ppb	3.694	3.694	29.23
Na	23	72	1	ppb	4.537	4.537	27.98
Na	23	72	2	ppb	4.754	4.754	7.12
Mg	24	72	1	ppb	0.015	0.015	12338.68
Al	27	72	1	ppb	0.102	0.102	2359.47
P	31	72	1	ppb	-0.836	-0.836	-87.07
K	39	72	1	ppb	11.909	11.909	56.15
Ca	44	72	1	ppb	3.442	3.442	455.07
Ca	44	72	2	ppb	2.877	2.877	183.65
Ti	47	72	1	ppb	0.000	0.000	-33781.51
Ti	47	72	2	ppb	0.088	0.088	149.97
V	51	72	1	ppb	-23.891	-23.891	-2.34
V	51	72	2	ppb	-0.321	-0.321	-2.24
Cr	52	72	1	ppb	-0.534	-0.534	-5.10
Cr	52	72	2	ppb	0.048	0.048	46.64
Mn	55	72	1	ppb	-0.015	-0.015	-492.70
Mn	55	72	2	ppb	0.018	0.018	232.64
Fe	56	72	1	ppb	-8.173	-8.173	-9.62
Fe	56	72	2	ppb	-1.134	-1.134	-24.98
Co	59	72	1	ppb	-0.001	-0.001	-667.12
Co	59	72	2	ppb	0.003	0.003	190.89
Ni	60	72	1	ppb	0.001	0.001	904.67
Ni	60	72	2	ppb	0.003	0.003	1406.91
Cu	63	72	1	ppb	-0.133	-0.133	-11.34
Cu	63	72	2	ppb	-0.126	-0.126	-15.45
Cu	65	72	1	ppb	-0.160	-0.160	-11.61
Zn	66	72	1	ppb	-0.156	-0.156	-16.26
Zn	66	72	2	ppb	-0.257	-0.257	-8.72
Zn	68	72	1	ppb	0.117	0.117	42.88
As	75	72	1	ppb	-8.692	-8.692	-8.23
As	75	72	2	ppb	0.012	0.012	219.09
Se	78	72	1	ppb	0.304	0.304	419.78
Se	78	72	2	ppb	0.021	0.021	301.65
Se	82	72	1	ppb	0.176	0.176	20.32
Sr	88	72	1	ppb	0.006	0.006	538.18
Mo	95	72	1	ppb	0.002	0.002	747.80
Mo	97	72	1	ppb	0.021	0.021	109.82
Rh	103	115	1	ppb	1.213	1.213	1950.60
Pd	105	115	1	ppb	37.050	37.050	58.24
Ag	107	72	1	ppb	0.010	0.010	56.84
Ag	109	72	1	ppb	0.007	0.007	16.96
Cd	111	115	1	ppb	0.004	0.004	158.95

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.009	0.009	96.43
Sn	118	72	1	ppb	0.049	0.049	15.91
Sn	119	72	1	ppb	0.023	0.023	131.94
Sb	121	72	1	ppb	-0.068	-0.068	-18.22
Sb	121	72	2	ppb	-0.094	-0.094	-22.13
Sb	123	72	1	ppb	-0.067	-0.067	-4.73
Ba	135	115	1	ppb	0.006	0.006	395.67
Ba	137	115	1	ppb	0.117	0.117	187.29
W	182	209	1	ppb	-35.720	-35.720	-105.64
Pt	195	209	1	ppb	146.123	146.123	229.02
Au	197	209	1	ppb	-168.547	-168.547	-389.75
Tl	203	209	1	ppb	0.171	0.171	43.71
Tl	205	209	1	ppb	0.165	0.165	43.08
Pb	206	209	1	ppb	-1.645	-1.645	-9.85
Pb	207	209	1	ppb	-1.459	-1.459	-10.74
Pb	208	209	1	ppb	-1.502	-1.502	-9.04
U	238	209	1	ppb	0.003	0.003	96.76

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	301,322	1.43	295434	102.0	70	125	
1	Ge	72	2,077,451	1.86	2031160	102.3	70	125	
2	Ge	72	248,944	0.08	249610	99.7	70	125	
1	In	115	2,195,265	0.93	2141033	102.5	70	125	
1	Bi	209	2,029,833	1.21	1986371	102.2	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**118CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D25I00.B**
AcqDateTime	**4/25/2017 21:04**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**108CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	99.46	2.43	ppb	100	99.5	90	110	
Na	23	72	2	9976.98	0.93	ppb	10000	99.8	90	110	
Mg	24	72	1	9923.51	3.91	ppb	10000	99.2	90	110	
K	39	72	1	9910.74	3.97	ppb	10000	99.1	90	110	
Cr	52	72	2	98.49	1.35	ppb	100	98.5	90	110	
Mn	55	72	2	98.63	0.78	ppb	100	98.6	90	110	
Fe	56	72	2	9921.38	0.14	ppb	10000	99.2	90	110	
Co	59	72	2	99.91	0.53	ppb	100	99.9	90	110	
Ni	60	72	2	98.74	0.77	ppb	100	98.7	90	110	
Cu	63	72	2	99.81	1.02	ppb	100	99.8	90	110	
Zn	66	72	2	99.72	0.99	ppb	100	99.7	90	110	
As	75	72	2	99.40	0.29	ppb	100	99.4	90	110	
Se	78	72	2	101.02	2.41	ppb	100	101.0	90	110	
Mo	95	72	1	98.38	4.78	ppb	100	98.4	90	110	
Ag	107	72	1	103.80	4.19	ppb	100	103.8	90	110	
Cd	111	115	1	96.44	0.95	ppb	100	96.4	90	110	
Sb	121	72	2	99.61	0.28	ppb	100	99.6	90	110	
Ba	135	115	1	95.82	1.63	ppb	100	95.8	90	110	
Tl	203	209	1	98.45	5.62	ppb	100	98.5	90	110	
Pb	208	209	1	94.12	2.99	ppb	100	94.1	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	275059	1.91	295434	**93.1**	70	125	
Ge	72	1	2059034	3.29	2031160	**101.4**	70	125	
Ge	72	2	245085	0.24	249610	**98.2**	70	125	
In	115	1	2164384	1.19	2141033	**101.1**	70	125	
Bi	209	1	1986136	2.55	1986371	**100.0**	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**119CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 21:09**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**108CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.26	26.09	ppb	2.5	
Be	9	6	1	0.10	10.49	ppb	1	
B	11	6	1	5.57	2.81	ppb	5	>2.2*DL
Na	23	72	1	18.19	5.07	ppb	250	
Na	23	72	2	17.20	2.91	ppb	250	
Mg	24	72	1	11.80	11.57	ppb	250	
Al	27	72	1	6.80	31.01	ppb	5	>2.2*DL
P	31	72	1	0.44	274.53	ppb	5	
K	39	72	1	25.64	31.10	ppb	250	
Ca	44	72	1	55.84	22.19	ppb	250	
Ca	44	72	2	49.74	12.14	ppb	250	
Ti	47	72	1	0.17	13.82	ppb	2.5	
Ti	47	72	2	0.66	102.25	ppb	2.5	
V	51	72	1	-16.58	-1.91	ppb	2.5	
V	51	72	2	-0.17	-2.81	ppb	2.5	
Cr	52	72	1	-0.31	-6.95	ppb	2.5	
Cr	52	72	2	0.12	24.85	ppb	2.5	
Mn	55	72	1	0.24	18.17	ppb	2.5	
Mn	55	72	2	0.29	10.66	ppb	2.5	
Fe	56	72	1	11.04	20.15	ppb	100	
Fe	56	72	2	13.75	1.51	ppb	100	
Co	59	72	1	0.08	11.05	ppb	2.5	
Co	59	72	2	0.09	14.73	ppb	2.5	
Ni	60	72	1	0.13	11.32	ppb	2.5	
Ni	60	72	2	0.12	31.32	ppb	2.5	
Cu	63	72	1	-0.08	-6.38	ppb	2.5	
Cu	63	72	2	-0.06	-84.95	ppb	2.5	
Cu	65	72	1	-0.09	-10.74	ppb	2.5	
Zn	66	72	1	0.16	49.74	ppb	2.5	
Zn	66	72	2	0.18	79.77	ppb	2.5	
Zn	68	72	1	0.44	16.29	ppb	2.5	
As	75	72	1	-6.26	-9.37	ppb	2.5	
As	75	72	2	0.10	31.07	ppb	2.5	
Se	78	72	1	0.80	186.39	ppb	2.5	
Se	78	72	2	0.35	100.54	ppb	2.5	
Se	82	72	1	0.24	105.38	ppb	2.5	
Sr	88	72	1	0.17	17.99	ppb	2.5	
Mo	95	72	1	0.17	9.26	ppb	2.5	
Mo	97	72	1	0.17	5.81	ppb	2.5	
Ag	107	72	1	0.10	3.20	ppb	2.5	
Ag	109	72	1	0.10	4.31	ppb	2.5	
Cd	111	115	1	0.09	18.18	ppb	2.5	
Cd	114	115	1	0.09	27.67	ppb	2.5	
Sn	118	72	1	0.16	17.58	ppb	2.5	
Sn	119	72	1	0.17	12.94	ppb	2.5	
Sb	121	72	1	0.07	9.35	ppb	2.5	
Sb	121	72	2	0.02	143.93	ppb	2.5	
Sb	123	72	1	0.05	9.93	ppb	2.5	
Ba	135	115	1	0.13	18.48	ppb	2.5	
Ba	137	115	1	0.13	11.42	ppb	2.5	
Tl	203	209	1	1.12	11.75	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.06	9.86	ppb	2.5	
Pb	206	209	1	-1.52	-7.35	ppb	2.5	
Pb	207	209	1	-1.34	-8.95	ppb	2.5	
Pb	208	209	1	-1.37	-7.66	ppb	2.5	
U	238	209	1	0.07	2.05	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	299714	2.57	295434	101.4	70	125	
Ge	72	1	2063371	2.41	2031160	101.6	70	125	
Ge	72	2	248130	0.45	249610	99.4	70	125	
In	115	1	2156646	1.77	2141033	100.7	70	125	
Bi	209	1	2010828	1.36	1986371	101.2	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	120SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 21:14
Sample Name	HS17041053-19	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	83.045	83.045	1.13
Be	9	6	1	ppb	8.372	8.372	1.37
B	11	6	1	ppb	36.354	36.354	4.51
Na	23	72	1	ppb	430.235	430.235	4.32
Na	23	72	2	ppb	419.039	419.039	1.49
Mg	24	72	1	ppb	31234.210	31234.210	3.11
Al	27	72	1	ppb	95405.886	95405.886	3.13
P	31	72	1	ppb	1931.817	1931.817	2.75
K	39	72	1	ppb	27925.603	27925.603	2.76
Ca	44	72	1	ppb	78487.879	78487.879	3.23
Ca	44	72	2	ppb	77118.420	77118.420	0.54
Ti	47	72	1	ppb	1793.621	1793.621	4.05
Ti	47	72	2	ppb	1768.866	1768.866	0.97
V	51	72	1	ppb	219.872	219.872	3.85
V	51	72	2	ppb	215.657	215.657	0.64
Cr	52	72	1	ppb	96.053	96.053	3.32
Cr	52	72	2	ppb	96.504	96.504	0.48
Mn	55	72	1	ppb	2553.478	2553.478	4.01
Mn	55	72	2	ppb	2721.470	2721.470	1.32
Fe	56	72	1	ppb	123819.856	123819.856	3.55
Fe	56	72	2	ppb	123289.674	123289.674	1.16
Co	59	72	1	ppb	54.061	54.061	3.19
Co	59	72	2	ppb	54.921	54.921	0.28
Ni	60	72	1	ppb	105.208	105.208	3.62
Ni	60	72	2	ppb	103.256	103.256	1.77
Cu	63	72	1	ppb	95.589	95.589	4.05
Cu	63	72	2	ppb	96.125	96.125	0.87
Cu	65	72	1	ppb	98.658	98.658	4.01
Zn	66	72	1	ppb	425.587	425.587	3.17
Zn	66	72	2	ppb	423.877	423.877	0.89
Zn	68	72	1	ppb	441.807	441.807	3.64
As	75	72	1	ppb	55.148	55.148	4.46
As	75	72	2	ppb	52.250	52.250	0.55
Se	78	72	1	ppb	4.822	4.822	39.03
Se	78	72	2	ppb	11.845	11.845	6.85
Se	82	72	1	ppb	5.763	5.763	9.94
Sr	88	72	1	ppb	375.564	375.564	3.51
Mo	95	72	1	ppb	2.928	2.928	5.07
Mo	97	72	1	ppb	2.922	2.922	3.04
Rh	103	115	1	ppb	194.696	194.696	13.65
Pd	105	115	1	ppb	1127.824	1127.824	3.22
Ag	107	72	1	ppb	0.470	0.470	3.66
Ag	109	72	1	ppb	0.445	0.445	3.57
Cd	111	115	1	ppb	1.474	1.474	7.61

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	1.593	1.593	1.35
Sn	118	72	1	ppb	4.582	4.582	5.76
Sn	119	72	1	ppb	4.545	4.545	8.11
Sb	121	72	1	ppb	2.276	2.276	5.85
Sb	121	72	2	ppb	2.376	2.376	1.28
Sb	123	72	1	ppb	2.282	2.282	4.82
Ba	135	115	1	ppb	1015.885	1015.885	0.98
Ba	137	115	1	ppb	1009.540	1009.540	0.57
W	182	209	1	ppb	6365.061	6365.061	4.56
Pt	195	209	1	ppb	577.224	577.224	61.36
Au	197	209	1	ppb	3780.368	3780.368	18.15
Tl	203	209	1	ppb	1.774	1.774	10.74
Tl	205	209	1	ppb	1.661	1.661	12.05
Pb	206	209	1	ppb	171.501	171.501	1.40
Pb	207	209	1	ppb	156.551	156.551	1.50
Pb	208	209	1	ppb	165.541	165.541	1.79
U	238	209	1	ppb	3.018	3.018	2.30

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	260,577	0.20	295434	88.2	70	125	
1	Ge	72	2,009,708	2.32	2031160	98.9	70	125	
2	Ge	72	244,205	0.53	249610	97.8	70	125	
1	In	115	1,986,553	1.49	2141033	92.8	70	125	
1	Bi	209	1,909,277	0.35	1986371	96.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	121SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 21:18
Sample Name	HS17041053-20	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	84.987	84.987	2.93
Be	9	6	1	ppb	8.390	8.390	1.55
B	11	6	1	ppb	45.996	45.996	3.48
Na	23	72	1	ppb	552.349	552.349	3.84
Na	23	72	2	ppb	523.511	523.511	0.35
Mg	24	72	1	ppb	33309.713	33309.713	3.62
Al	27	72	1	ppb	102713.054	102713.054	3.17
P	31	72	1	ppb	2140.820	2140.820	1.99
K	39	72	1	ppb	26248.339	26248.339	3.41
Ca	44	72	1	ppb	105645.812	105645.812	2.88
Ca	44	72	2	ppb	99384.890	99384.890	0.34
Ti	47	72	1	ppb	1946.805	1946.805	4.37
Ti	47	72	2	ppb	1775.232	1775.232	0.87
V	51	72	1	ppb	235.912	235.912	4.90
V	51	72	2	ppb	219.035	219.035	0.22
Cr	52	72	1	ppb	101.883	101.883	3.65
Cr	52	72	2	ppb	99.173	99.173	0.69
Mn	55	72	1	ppb	2542.512	2542.512	3.06
Mn	55	72	2	ppb	2591.392	2591.392	0.79
Fe	56	72	1	ppb	124592.643	124592.643	2.68
Fe	56	72	2	ppb	119189.716	119189.716	0.25
Co	59	72	1	ppb	56.700	56.700	2.98
Co	59	72	2	ppb	55.917	55.917	0.31
Ni	60	72	1	ppb	107.886	107.886	3.73
Ni	60	72	2	ppb	103.699	103.699	0.94
Cu	63	72	1	ppb	103.916	103.916	3.88
Cu	63	72	2	ppb	101.721	101.721	0.58
Cu	65	72	1	ppb	107.401	107.401	3.38
Zn	66	72	1	ppb	400.762	400.762	3.59
Zn	66	72	2	ppb	381.564	381.564	0.64
Zn	68	72	1	ppb	415.702	415.702	2.71
As	75	72	1	ppb	59.229	59.229	6.04
As	75	72	2	ppb	50.928	50.928	0.89
Se	78	72	1	ppb	7.260	7.260	28.13
Se	78	72	2	ppb	14.118	14.118	2.48
Se	82	72	1	ppb	6.243	6.243	12.83
Sr	88	72	1	ppb	497.759	497.759	2.92
Mo	95	72	1	ppb	3.159	3.159	2.33
Mo	97	72	1	ppb	3.107	3.107	4.09
Rh	103	115	1	ppb	274.194	274.194	18.53
Pd	105	115	1	ppb	1293.770	1293.770	6.50
Ag	107	72	1	ppb	0.531	0.531	5.08
Ag	109	72	1	ppb	0.534	0.534	7.45
Cd	111	115	1	ppb	1.629	1.629	6.89

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	1.693	1.693	8.31
Sn	118	72	1	ppb	5.073	5.073	3.15
Sn	119	72	1	ppb	4.908	4.908	1.79
Sb	121	72	1	ppb	2.602	2.602	4.12
Sb	121	72	2	ppb	2.450	2.450	1.97
Sb	123	72	1	ppb	2.632	2.632	4.41
Ba	135	115	1	ppb	1117.106	1117.106	5.54
Ba	137	115	1	ppb	1109.427	1109.427	5.97
W	182	209	1	ppb	6989.265	6989.265	4.61
Pt	195	209	1	ppb	1565.646	1565.646	42.86
Au	197	209	1	ppb	4333.770	4333.770	27.25
Tl	203	209	1	ppb	1.633	1.633	4.66
Tl	205	209	1	ppb	1.534	1.534	2.78
Pb	206	209	1	ppb	232.890	232.890	4.46
Pb	207	209	1	ppb	213.294	213.294	4.64
Pb	208	209	1	ppb	224.120	224.120	4.68
U	238	209	1	ppb	3.348	3.348	3.77

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	259,602	3.68	295434	87.9	70	125	
1	Ge	72	1,948,520	3.51	2031160	95.9	70	125	
2	Ge	72	244,437	0.08	249610	97.9	70	125	
1	In	115	1,972,021	6.80	2141033	92.1	70	125	
1	Bi	209	1,867,772	5.05	1986371	94.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	122SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 21:23
Sample Name	HS17041053-21	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	84.299	84.299	0.42
Be	9	6	1	ppb	7.651	7.651	3.28
B	11	6	1	ppb	51.659	51.659	0.98
Na	23	72	1	ppb	821.313	821.313	1.26
Na	23	72	2	ppb	813.875	813.875	0.58
Mg	24	72	1	ppb	35713.146	35713.146	1.19
Al	27	72	1	ppb	97526.715	97526.715	1.08
P	31	72	1	ppb	2315.638	2315.638	0.50
K	39	72	1	ppb	25690.305	25690.305	0.82
Ca	44	72	1	ppb	132984.715	132984.715	0.36
Ca	44	72	2	ppb	128175.343	128175.343	0.48
Ti	47	72	1	ppb	1878.790	1878.790	1.38
Ti	47	72	2	ppb	1801.104	1801.104	1.77
V	51	72	1	ppb	211.215	211.215	2.37
V	51	72	2	ppb	212.817	212.817	0.35
Cr	52	72	1	ppb	93.438	93.438	1.79
Cr	52	72	2	ppb	94.864	94.864	0.36
Mn	55	72	1	ppb	2334.935	2334.935	0.48
Mn	55	72	2	ppb	2482.630	2482.630	0.44
Fe	56	72	1	ppb	115598.528	115598.528	0.44
Fe	56	72	2	ppb	115177.610	115177.610	0.09
Co	59	72	1	ppb	52.234	52.234	0.51
Co	59	72	2	ppb	53.842	53.842	0.92
Ni	60	72	1	ppb	105.330	105.330	1.17
Ni	60	72	2	ppb	105.073	105.073	0.85
Cu	63	72	1	ppb	97.240	97.240	0.53
Cu	63	72	2	ppb	100.394	100.394	0.36
Cu	65	72	1	ppb	100.819	100.819	0.30
Zn	66	72	1	ppb	370.932	370.932	0.91
Zn	66	72	2	ppb	365.680	365.680	0.64
Zn	68	72	1	ppb	389.686	389.686	0.47
As	75	72	1	ppb	51.683	51.683	3.95
As	75	72	2	ppb	49.341	49.341	0.89
Se	78	72	1	ppb	4.960	4.960	28.79
Se	78	72	2	ppb	13.412	13.412	10.05
Se	82	72	1	ppb	6.147	6.147	9.21
Sr	88	72	1	ppb	567.675	567.675	0.88
Mo	95	72	1	ppb	3.016	3.016	1.29
Mo	97	72	1	ppb	2.994	2.994	3.07
Rh	103	115	1	ppb	306.574	306.574	7.95
Pd	105	115	1	ppb	1258.795	1258.795	2.48
Ag	107	72	1	ppb	0.496	0.496	6.01
Ag	109	72	1	ppb	0.507	0.507	0.95
Cd	111	115	1	ppb	1.578	1.578	3.98

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	1.650	1.650	2.95
Sn	118	72	1	ppb	4.614	4.614	0.37
Sn	119	72	1	ppb	4.590	4.590	2.23
Sb	121	72	1	ppb	2.355	2.355	1.58
Sb	121	72	2	ppb	2.239	2.239	1.80
Sb	123	72	1	ppb	2.360	2.360	1.78
Ba	135	115	1	ppb	1174.201	1174.201	0.46
Ba	137	115	1	ppb	1170.031	1170.031	1.26
W	182	209	1	ppb	7372.919	7372.919	1.93
Pt	195	209	1	ppb	1948.627	1948.627	50.99
Au	197	209	1	ppb	5257.394	5257.394	25.75
Tl	203	209	1	ppb	1.533	1.533	8.77
Tl	205	209	1	ppb	1.432	1.432	6.50
Pb	206	209	1	ppb	249.216	249.216	0.63
Pb	207	209	1	ppb	229.203	229.203	0.74
Pb	208	209	1	ppb	241.399	241.399	0.70
U	238	209	1	ppb	3.111	3.111	1.27

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	261,022	1.13	295434	88.4	70	125	
1	Ge	72	1,972,558	1.78	2031160	97.1	70	125	
2	Ge	72	239,976	0.28	249610	96.1	70	125	
1	In	115	1,997,833	2.12	2141033	93.3	70	125	
1	Bi	209	1,887,382	1.88	1986371	95.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**130CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D25I00.B**
AcqDateTime	**4/25/2017 22:00**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	[redacted] **ICPMS04**
ISTDRefDataFileName	**108CALB.D**
SamplePassFail	**Fail**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	100.84	2.50	ppb	100	100.8	90	110	
Na	23	72	2	8964.91	0.90	ppb	10000	89.6	90	110	CCV Main2 Failed
Mg	24	72	1	8724.00	1.45	ppb	10000	87.2	90	110	CCV Main2 Failed
K	39	72	1	9377.43	1.91	ppb	10000	93.8	90	110	
Cr	52	72	2	91.30	1.28	ppb	100	91.3	90	110	
Mn	55	72	2	92.91	1.02	ppb	100	92.9	90	110	
Fe	56	72	2	9132.04	0.91	ppb	10000	91.3	90	110	
Co	59	72	2	94.37	1.38	ppb	100	94.4	90	110	
Ni	60	72	2	93.82	0.37	ppb	100	93.8	90	110	
Cu	63	72	2	95.18	0.41	ppb	100	95.2	90	110	
Zn	66	72	2	95.20	1.78	ppb	100	95.2	90	110	
As	75	72	2	96.46	1.43	ppb	100	96.5	90	110	
Se	78	72	2	93.30	1.57	ppb	100	93.3	90	110	
Mo	95	72	1	98.82	2.87	ppb	100	98.8	90	110	
Ag	107	72	1	106.85	2.41	ppb	100	106.8	90	110	
Cd	111	115	1	96.55	2.42	ppb	100	96.6	90	110	
Sb	121	72	2	103.91	0.09	ppb	100	103.9	90	110	
Ba	135	115	1	97.66	2.81	ppb	100	97.7	90	110	
Tl	203	209	1	98.25	6.10	ppb	100	98.3	90	110	
Pb	208	209	1	93.46	2.78	ppb	100	93.5	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	179122	1.59	295434	**60.6**	70	125	IS Failed
Ge	72	1	1554895	1.40	2031160	**76.6**	70	125	
Ge	72	2	189416	0.34	249610	**75.9**	70	125	
In	115	1	1709264	2.27	2141033	**79.8**	70	125	
Bi	209	1	1638423	2.61	1986371	**82.5**	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**134CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 22:19**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**108CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.27	2.69	ppb	2.5	
Be	9	6	1	0.12	29.47	ppb	1	
B	11	6	1	2.54	63.35	ppb	5	
Na	23	72	1	20.65	9.53	ppb	250	
Na	23	72	2	17.29	10.66	ppb	250	
Mg	24	72	1	11.68	14.88	ppb	250	
Al	27	72	1	7.09	29.02	ppb	5	>2.2*DL
P	31	72	1	8.88	19.32	ppb	5	>2.2*DL
K	39	72	1	62.26	19.90	ppb	250	
Ca	44	72	1	50.59	36.29	ppb	250	
Ca	44	72	2	63.36	20.29	ppb	250	
Ti	47	72	1	1.15	144.06	ppb	2.5	
Ti	47	72	2	0.33	109.55	ppb	2.5	
V	51	72	1	-36.38	-2.11	ppb	2.5	
V	51	72	2	-0.45	-4.76	ppb	2.5	
Cr	52	72	1	-0.62	-6.72	ppb	2.5	
Cr	52	72	2	0.08	3.65	ppb	2.5	
Mn	55	72	1	0.28	57.52	ppb	2.5	
Mn	55	72	2	0.26	6.32	ppb	2.5	
Fe	56	72	1	32.14	17.84	ppb	100	
Fe	56	72	2	13.36	2.28	ppb	100	
Co	59	72	1	0.08	8.23	ppb	2.5	
Co	59	72	2	0.09	13.45	ppb	2.5	
Ni	60	72	1	0.14	10.04	ppb	2.5	
Ni	60	72	2	0.11	13.79	ppb	2.5	
Cu	63	72	1	0.35	14.58	ppb	2.5	
Cu	63	72	2	0.31	7.04	ppb	2.5	
Cu	65	72	1	0.37	15.66	ppb	2.5	
Zn	66	72	1	0.07	128.08	ppb	2.5	
Zn	66	72	2	-0.03	-535.13	ppb	2.5	
Zn	68	72	1	0.36	25.53	ppb	2.5	
As	75	72	1	-12.02	-7.72	ppb	2.5	
As	75	72	2	0.06	89.64	ppb	2.5	
Se	78	72	1	21.11	10.95	ppb	2.5	>2.2*DL
Se	78	72	2	-0.02	-1377.74	ppb	2.5	
Se	82	72	1	0.20	79.82	ppb	2.5	
Sr	88	72	1	0.20	18.16	ppb	2.5	
Mo	95	72	1	0.22	17.77	ppb	2.5	
Mo	97	72	1	0.21	25.58	ppb	2.5	
Ag	107	72	1	0.09	7.64	ppb	2.5	
Ag	109	72	1	0.10	7.43	ppb	2.5	
Cd	111	115	1	0.08	23.81	ppb	2.5	
Cd	114	115	1	0.08	9.32	ppb	2.5	
Sn	118	72	1	0.18	28.52	ppb	2.5	
Sn	119	72	1	0.18	23.72	ppb	2.5	
Sb	121	72	1	0.02	182.26	ppb	2.5	
Sb	121	72	2	-0.01	-80.99	ppb	2.5	
Sb	123	72	1	0.00	-3205.48	ppb	2.5	
Ba	135	115	1	0.18	13.77	ppb	2.5	
Ba	137	115	1	0.17	23.21	ppb	2.5	
Tl	203	209	1	1.16	5.09	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.13	6.68	ppb	2.5	
Pb	206	209	1	-2.12	-5.77	ppb	2.5	
Pb	207	209	1	-1.93	-3.82	ppb	2.5	
Pb	208	209	1	-1.96	-5.48	ppb	2.5	
U	238	209	1	0.08	5.06	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	207674	2.26	295434	70.3	70	125	
Ge	72	1	1620951	2.77	2031160	79.8	70	125	
Ge	72	2	202546	0.37	249610	81.1	70	125	
In	115	1	1767644	2.44	2141033	82.6	70	125	
Bi	209	1	1683574	2.88	1986371	84.8	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Blank Report

Sample Name	CAL BLK
Data File Name	136CALB.D
DataPath	C:\ICPMH\1\DATA\17D25I00.B
AcqDateTime	4/25/2017 22:29:00
Type	CalBlk
VialNumber	1101
Dilution	1
Comment	
Operator	[redacted] ICPMS04
Current Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	20402	3.50
Be	9	6	1	76	2.54
B	11	6	1	14162	0.77
Na	23	72	1	136445	7.53
Na	23	72	2	4018	3.48
Mg	24	72	1	34665	30.07
Al	27	72	1	51668	38.81
P	31	72	1	17660	2.56
K	39	72	1	3007497	0.63
Ca	44	72	1	27109	17.10
Ca	44	72	2	238	19.14
Ti	47	72	1	161	37.55
Ti	47	72	2	6	124.93
V	51	72	1	144555	5.18
V	51	72	2	264	6.22
Cr	52	72	1	10665	3.97
Cr	52	72	2	333	14.00
Mn	55	72	1	12938	8.99
Mn	55	72	2	197	11.86
Fe	56	72	1	1531788	1.90
Fe	56	72	2	7795	4.05
Co	59	72	1	333	6.93
Co	59	72	2	48	65.95
Ni	60	72	1	148	24.75
Ni	60	72	2	39	30.10
Cu	63	72	1	2799	6.85
Cu	63	72	2	782	11.03
Cu	65	72	1	1185	1.27
Zn	66	72	1	888	23.09
Zn	68	72	1	661	9.86
As	75	72	1	33774	4.93
As	75	72	2	27	13.04
Se	78	72	1	20971	1.26
Se	78	72	2	16	14.54
Se	82	72	1	246	9.54
Sr	88	72	1	1613	32.93
Mo	95	72	1	211	17.61
Mo	97	72	1	133	45.62
Ag	107	72	1	108	41.19
Ag	109	72	1	100	23.33
Cd	111	115	1	10	88.20
Cd	114	115	1	62	3.10
Sn	118	72	1	749	8.43
Sn	119	72	1	309	3.47
Sb	121	72	1	949	0.68
Sb	121	72	2	228	9.29

Calibration Blank Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	123	72	1	730	5.70
Ba	135	115	1	188	15.51
Ba	137	115	1	311	23.29
Tl	203	209	1	2202	10.01
Tl	205	209	1	5161	8.32
Pb	206	209	1	1870	35.54
Pb	207	209	1	1636	34.51
Pb	208	209	1	7320	34.43

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Li	6	1	216342	2.55
Ge	72	1	1667733	3.22
Ge	72	2	201779	0.87
In	115	1	1810683	1.85
Bi	209	1	1712654	1.84

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	2/10/200
Data File Name	137CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 22:34
Type	CalStd
VialNumber	1102
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	136CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	26020	3.49
Be	9	6	1	3438	5.42
B	11	6	1	20521	3.71
Na	23	72	1	1567274	1.41
Na	23	72	2	38982	1.29
Mg	24	72	1	1071955	2.14
Al	27	72	1	81574	24.15
P	31	72	1	22900	5.03
K	39	72	1	4536013	0.59
Ca	44	72	1	77539	5.67
Ca	44	72	2	1240	9.51
Ti	47	72	1	1649	2.23
Ti	47	72	2	92	16.30
V	51	72	1	162981	4.49
V	51	72	2	2958	0.85
Cr	52	72	1	30017	3.56
Cr	52	72	2	3614	4.36
Mn	55	72	1	38749	4.83
Mn	55	72	2	2072	4.99
Fe	56	72	1	3743634	0.44
Fe	56	72	2	282939	0.44
Co	59	72	1	20908	0.84
Co	59	72	2	5240	3.04
Ni	60	72	1	4915	2.69
Ni	60	72	2	1382	4.21
Cu	63	72	1	13869	0.77
Cu	63	72	2	4367	4.05
Cu	65	72	1	6674	5.62
Zn	66	72	1	4665	5.19
Zn	68	72	1	3529	4.52
As	75	72	1	37741	4.96
As	75	72	2	689	5.28
Se	78	72	1	21509	0.28
Se	78	72	2	40	9.63
Se	82	72	1	488	4.27
Sr	88	72	1	34149	1.56
Mo	95	72	1	6208	0.76
Mo	97	72	1	3807	2.77
Ag	107	72	1	15262	2.71
Ag	109	72	1	14768	3.46
Cd	111	115	1	3451	4.42
Cd	114	115	1	8203	3.76
Sn	118	72	1	9926	3.22
Sn	119	72	1	3686	3.30

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	15738	1.25
Sb	121	72	2	3649	1.85
Sb	123	72	1	11908	2.08
Ba	135	115	1	3315	2.04
Ba	137	115	1	5611	2.01
Tl	203	209	1	12238	3.36
Tl	205	209	1	29157	4.43
Pb	206	209	1	12417	3.13
Pb	207	209	1	10824	7.09
Pb	208	209	1	49630	5.28

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	205673	4.88	216342	95.1	70	125	
Ge	72	1	1601904	5.17	1667733	96.1	70	125	
Ge	72	2	200889	0.16	201779	99.6	70	125	
In	115	1	1725365	5.31	1810683	95.3	70	125	
Bi	209	1	1640438	6.64	1712654	95.8	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	5/25/500
Data File Name	138CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 22:39
Type	CalStd
VialNumber	1103
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	136CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	37238	0.44
Be	9	6	1	8301	0.88
B	11	6	1	32806	3.16
Na	23	72	1	3668133	0.67
Na	23	72	2	91823	1.04
Mg	24	72	1	2647606	0.13
Al	27	72	1	100234	23.35
P	31	72	1	31429	2.99
K	39	72	1	6867760	0.29
Ca	44	72	1	148429	3.60
Ca	44	72	2	2619	1.18
Ti	47	72	1	3835	4.57
Ti	47	72	2	217	18.14
V	51	72	1	198604	3.13
V	51	72	2	6824	2.61
Cr	52	72	1	57682	1.49
Cr	52	72	2	8944	1.40
Mn	55	72	1	74946	2.95
Mn	55	72	2	4593	4.30
Fe	56	72	1	6853861	0.07
Fe	56	72	2	692814	0.96
Co	59	72	1	51118	1.26
Co	59	72	2	13233	0.97
Ni	60	72	1	11558	2.42
Ni	60	72	2	3607	0.51
Cu	63	72	1	30441	0.07
Cu	63	72	2	10043	3.08
Cu	65	72	1	14560	0.91
Zn	66	72	1	10060	3.88
Zn	68	72	1	7283	3.19
As	75	72	1	44948	2.88
As	75	72	2	1675	5.04
Se	78	72	1	22210	0.55
Se	78	72	2	108	16.20
Se	82	72	1	815	4.17
Sr	88	72	1	81419	0.77
Mo	95	72	1	14760	1.66
Mo	97	72	1	9106	3.33
Ag	107	72	1	38054	1.37
Ag	109	72	1	37416	1.49
Cd	111	115	1	8267	1.41
Cd	114	115	1	20318	2.09
Sn	118	72	1	23459	2.04
Sn	119	72	1	9066	4.88

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	37888	1.12
Sb	121	72	2	8714	0.94
Sb	123	72	1	28605	0.67
Ba	135	115	1	8149	1.74
Ba	137	115	1	13710	3.94
Tl	203	209	1	28225	4.95
Tl	205	209	1	67099	5.78
Pb	206	209	1	27796	3.27
Pb	207	209	1	25198	0.39
Pb	208	209	1	113179	2.73

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	211548	0.67	216342	97.8	70	125	
Ge	72	1	1657817	1.81	1667733	99.4	70	125	
Ge	72	2	200468	0.64	201779	99.4	70	125	
In	115	1	1788820	0.75	1810683	98.8	70	125	
Bi	209	1	1691344	0.14	1712654	98.8	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	10/50/1000
Data File Name	139CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 22:44
Type	CalStd
VialNumber	1104
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	136CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	54193	0.67
Be	9	6	1	17138	2.36
B	11	6	1	55322	3.16
Na	23	72	1	7252567	0.90
Na	23	72	2	183234	0.40
Mg	24	72	1	5232648	0.85
Al	27	72	1	124918	14.23
P	31	72	1	44687	1.38
K	39	72	1	10810982	0.65
Ca	44	72	1	268269	1.90
Ca	44	72	2	4989	1.82
Ti	47	72	1	7787	4.93
Ti	47	72	2	378	19.74
V	51	72	1	254952	2.26
V	51	72	2	13880	0.87
Cr	52	72	1	105187	1.58
Cr	52	72	2	17452	0.88
Mn	55	72	1	136857	1.47
Mn	55	72	2	8929	2.19
Fe	56	72	1	12303596	0.35
Fe	56	72	2	1453546	0.80
Co	59	72	1	104259	0.45
Co	59	72	2	26281	1.26
Ni	60	72	1	24182	1.87
Ni	60	72	2	7125	1.78
Cu	63	72	1	59957	0.96
Cu	63	72	2	19980	2.20
Cu	65	72	1	28618	0.44
Zn	66	72	1	19139	0.17
Zn	68	72	1	13655	0.65
As	75	72	1	57492	2.12
As	75	72	2	3327	4.08
Se	78	72	1	23331	0.66
Se	78	72	2	182	9.17
Se	82	72	1	1330	3.80
Sr	88	72	1	161775	1.34
Mo	95	72	1	29323	2.47
Mo	97	72	1	18424	0.86
Ag	107	72	1	78461	0.66
Ag	109	72	1	74612	1.58
Cd	111	115	1	17243	2.07
Cd	114	115	1	40654	2.04
Sn	118	72	1	47206	1.58
Sn	119	72	1	18022	2.30

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	75662	0.98
Sb	121	72	2	17285	0.52
Sb	123	72	1	57392	0.22
Ba	135	115	1	16064	1.43
Ba	137	115	1	27320	0.95
Tl	203	209	1	56492	5.19
Tl	205	209	1	133599	5.11
Pb	206	209	1	55608	0.70
Pb	207	209	1	50776	1.12
Pb	208	209	1	225433	0.35

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	211182	1.53	216342	97.6	70	125	
Ge	72	1	1656221	2.81	1667733	99.3	70	125	
Ge	72	2	199628	0.56	201779	98.9	70	125	
In	115	1	1792070	1.03	1810683	99.0	70	125	
Bi	209	1	1710528	1.51	1712654	99.9	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	100/500/10K
Data File Name	140CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 22:49
Type	CalStd
VialNumber	1105
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	136CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	335913	0.15
Be	9	6	1	157174	1.10
B	11	6	1	422087	3.19
Na	23	72	1	64736519	0.49
Na	23	72	2	1701623	0.16
Mg	24	72	1	47088412	0.67
Al	27	72	1	717232	1.98
P	31	72	1	263641	0.40
K	39	72	1	74957272	0.38
Ca	44	72	1	2243513	0.43
Ca	44	72	2	43277	1.77
Ti	47	72	1	69327	0.90
Ti	47	72	2	3529	4.39
V	51	72	1	1141643	0.77
V	51	72	2	126137	1.12
Cr	52	72	1	866725	0.73
Cr	52	72	2	158141	0.67
Mn	55	72	1	1149963	0.31
Mn	55	72	2	81885	1.62
Fe	56	72	1	99985003	0.18
Fe	56	72	2	13137731	0.66
Co	59	72	1	939492	0.32
Co	59	72	2	244190	0.32
Ni	60	72	1	211731	0.65
Ni	60	72	2	65052	0.48
Cu	63	72	1	520500	0.76
Cu	63	72	2	175380	0.67
Cu	65	72	1	249755	0.75
Zn	66	72	1	168776	0.21
Zn	68	72	1	120352	1.79
As	75	72	1	243504	0.55
As	75	72	2	30039	0.66
Se	78	72	1	46511	0.46
Se	78	72	2	1568	2.99
Se	82	72	1	10765	2.18
Sr	88	72	1	1551268	1.04
Mo	95	72	1	273830	0.69
Mo	97	72	1	170517	0.69
Ag	107	72	1	718657	0.79
Ag	109	72	1	692600	0.56
Cd	111	115	1	158206	1.48
Cd	114	115	1	382040	0.61
Sn	118	72	1	440615	1.06
Sn	119	72	1	169658	0.53

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	701609	0.67
Sb	121	72	2	161687	0.38
Sb	123	72	1	535485	0.73
Ba	135	115	1	146449	0.88
Ba	137	115	1	253896	0.74
Tl	203	209	1	558415	3.25
Tl	205	209	1	1323106	3.23
Pb	206	209	1	490156	0.53
Pb	207	209	1	441173	0.37
Pb	208	209	1	1983550	0.60

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	193483	1.75	216342	89.4	70	125	
Ge	72	1	1620987	2.26	1667733	97.2	70	125	
Ge	72	2	196095	0.45	201779	97.2	70	125	
In	115	1	1764684	1.50	1810683	97.5	70	125	
Bi	209	1	1688984	1.69	1712654	98.6	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration Standard Report

Sample Name	200/1000/20K
Data File Name	141CALS.D
DataPath	C:\ICPMH\1\DATA\17D25l00.B
AcqDateTime	4/25/2017 22:54
Type	CalStd
VialNumber	1106
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	136CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	658610	0.92
Be	9	6	1	317943	1.03
B	11	6	1	845067	3.96
Na	23	72	1	128425584	0.96
Na	23	72	2	3387356	0.67
Mg	24	72	1	93327579	1.06
Al	27	72	1	1421818	0.56
P	31	72	1	513081	1.34
K	39	72	1	146321917	1.32
Ca	44	72	1	4408678	1.27
Ca	44	72	2	89019	0.63
Ti	47	72	1	138539	1.49
Ti	47	72	2	6832	2.58
V	51	72	1	2198117	1.75
V	51	72	2	256647	0.66
Cr	52	72	1	1783800	0.81
Cr	52	72	2	319064	0.43
Mn	55	72	1	2324215	1.41
Mn	55	72	2	163319	0.83
Fe	56	72	1	197034482	1.14
Fe	56	72	2	26288894	0.25
Co	59	72	1	1926691	0.88
Co	59	72	2	486157	0.61
Ni	60	72	1	416494	0.81
Ni	60	72	2	128765	0.55
Cu	63	72	1	1032577	1.75
Cu	63	72	2	351939	0.97
Cu	65	72	1	493379	1.00
Zn	66	72	1	333851	1.28
Zn	68	72	1	237875	1.39
As	75	72	1	456857	0.62
As	75	72	2	61492	0.60
Se	78	72	1	72046	0.30
Se	78	72	2	3140	2.12
Se	82	72	1	21423	2.14
Sr	88	72	1	3034745	1.64
Mo	95	72	1	547905	2.03
Mo	97	72	1	343638	1.39
Ag	107	72	1	1507674	1.32
Ag	109	72	1	1430609	4.25
Cd	111	115	1	313183	0.66
Cd	114	115	1	755172	1.64
Sn	118	72	1	875409	1.16
Sn	119	72	1	336314	1.02

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	1492690	1.87
Sb	121	72	2	327432	0.18
Sb	123	72	1	1079216	1.43
Ba	135	115	1	295269	2.05
Ba	137	115	1	506017	0.99
Tl	203	209	1	1112892	3.78
Tl	205	209	1	2824880	3.94
Pb	206	209	1	976721	1.42
Pb	207	209	1	877820	1.07
Pb	208	209	1	4113620	1.16

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	179776	1.62	216342	83.1	70	125	
Ge	72	1	1591195	2.36	1667733	95.4	70	125	
Ge	72	2	196736	0.28	201779	97.5	70	125	
In	115	1	1724364	1.27	1810683	95.2	70	125	
Bi	209	1	1666899	1.44	1712654	97.3	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	142SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 22:59
Sample Name	ICCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	100.963	100.963	1.10
Be	9	6	1	ppb	112.571	112.571	2.59
B	11	6	1	ppb	508.922	508.922	1.41
Na	23	72	1	ppb	10540.223	10540.223	2.39
Na	23	72	2	ppb	10185.245	10185.245	1.10
Mg	24	72	1	ppb	10483.394	10483.394	2.17
Al	27	72	1	ppb	102.453	102.453	4.68
P	31	72	1	ppb	545.927	545.927	2.64
K	39	72	1	ppb	10486.938	10486.938	1.52
Ca	44	72	1	ppb	10451.517	10451.517	2.01
Ca	44	72	2	ppb	10207.240	10207.240	0.35
Ti	47	72	1	ppb	105.160	105.160	2.55
Ti	47	72	2	ppb	103.023	103.023	3.75
V	51	72	1	ppb	106.027	106.027	1.65
V	51	72	2	ppb	103.790	103.790	0.49
Cr	52	72	1	ppb	105.046	105.046	1.83
Cr	52	72	2	ppb	104.388	104.388	0.50
Mn	55	72	1	ppb	109.009	109.009	1.80
Mn	55	72	2	ppb	104.959	104.959	1.04
Fe	56	72	1	ppb	10404.168	10404.168	2.16
Fe	56	72	2	ppb	10057.013	10057.013	0.31
Co	59	72	1	ppb	106.690	106.690	2.37
Co	59	72	2	ppb	106.149	106.149	0.12
Ni	60	72	1	ppb	110.721	110.721	1.86
Ni	60	72	2	ppb	106.548	106.548	0.95
Cu	63	72	1	ppb	109.402	109.402	2.14
Cu	63	72	2	ppb	104.328	104.328	0.32
Cu	65	72	1	ppb	108.993	108.993	1.53
Zn	66	72	1	ppb	108.959	108.959	1.77
Zn	66	72	2	ppb	105.309	105.309	0.90
Zn	68	72	1	ppb	109.124	109.124	2.45
As	75	72	1	ppb	105.016	105.016	2.82
As	75	72	2	ppb	104.578	104.578	1.82
Se	78	72	1	ppb	105.780	105.780	2.91
Se	78	72	2	ppb	101.662	101.662	2.73
Se	82	72	1	ppb	106.710	106.710	3.58
Sr	88	72	1	ppb	105.987	105.987	1.68
Mo	95	72	1	ppb	106.402	106.402	0.79
Mo	97	72	1	ppb	105.214	105.214	1.21
Rh	103	115	1	ppb	54.806	54.806	21.76
Pd	105	115	1	ppb	23.504	23.504	362.23
Ag	107	72	1	ppb	108.184	108.184	1.33
Ag	109	72	1	ppb	108.662	108.662	1.34
Cd	111	115	1	ppb	106.906	106.906	3.62

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	107.153	107.153	3.15
Sn	118	72	1	ppb	103.420	103.420	1.89
Sn	119	72	1	ppb	103.523	103.523	1.59
Sb	121	72	1	ppb	109.230	109.230	1.84
Sb	121	72	2	ppb	105.626	105.626	0.53
Sb	123	72	1	ppb	109.026	109.026	1.92
Ba	135	115	1	ppb	107.328	107.328	3.19
Ba	137	115	1	ppb	107.171	107.171	3.15
W	182	209	1	ppb	214.050	214.050	40.27
Pt	195	209	1	ppb	-128.752	-128.752	-41.02
Au	197	209	1	ppb	-758.063	-758.063	-180.22
Tl	203	209	1	ppb	114.410	114.410	1.64
Tl	205	209	1	ppb	123.652	123.652	0.48
Pb	206	209	1	ppb	111.927	111.927	3.18
Pb	207	209	1	ppb	102.987	102.987	3.64
Pb	208	209	1	ppb	103.919	103.919	3.38
U	238	209	1	ppb	105.216	105.216	3.43

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	195,592	1.49	216342	90.4	70	125	
1	Ge	72	1,656,995	1.19	1667733	99.4	70	125	
2	Ge	72	204,282	0.14	201779	101.2	70	125	
1	In	115	1,793,859	2.21	1810683	99.1	70	125	
1	Bi	209	1,718,135	2.90	1712654	100.3	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	143SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 23:04
Sample Name	LLCCV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	4.922	4.922	2.29
Be	9	6	1	ppb	4.825	4.825	3.68
B	11	6	1	ppb	37.622	37.622	1.27
Na	23	72	1	ppb	542.562	542.562	2.92
Na	23	72	2	ppb	525.937	525.937	0.97
Mg	24	72	1	ppb	541.430	541.430	2.76
Al	27	72	1	ppb	8.012	8.012	32.73
P	31	72	1	ppb	28.677	28.677	4.64
K	39	72	1	ppb	516.385	516.385	4.27
Ca	44	72	1	ppb	545.724	545.724	0.74
Ca	44	72	2	ppb	540.870	540.870	5.61
Ti	47	72	1	ppb	5.709	5.709	6.79
Ti	47	72	2	ppb	5.078	5.078	15.07
V	51	72	1	ppb	4.712	4.712	0.58
V	51	72	2	ppb	5.223	5.223	2.59
Cr	52	72	1	ppb	5.033	5.033	1.61
Cr	52	72	2	ppb	5.418	5.418	1.12
Mn	55	72	1	ppb	5.270	5.270	1.65
Mn	55	72	2	ppb	5.301	5.301	4.64
Fe	56	72	1	ppb	511.520	511.520	2.46
Fe	56	72	2	ppb	521.912	521.912	0.97
Co	59	72	1	ppb	5.214	5.214	2.86
Co	59	72	2	ppb	5.503	5.503	1.05
Ni	60	72	1	ppb	5.428	5.428	1.04
Ni	60	72	2	ppb	5.438	5.438	2.72
Cu	63	72	1	ppb	5.429	5.429	2.75
Cu	63	72	2	ppb	5.420	5.420	2.90
Cu	65	72	1	ppb	5.478	5.478	1.40
Zn	66	72	1	ppb	5.236	5.236	2.08
Zn	66	72	2	ppb	5.063	5.063	2.71
Zn	68	72	1	ppb	5.432	5.432	1.80
As	75	72	1	ppb	5.837	5.837	5.50
As	75	72	2	ppb	5.306	5.306	3.98
Se	78	72	1	ppb	3.963	3.963	43.25
Se	78	72	2	ppb	5.152	5.152	10.43
Se	82	72	1	ppb	4.996	4.996	12.70
Sr	88	72	1	ppb	5.047	5.047	0.47
Mo	95	72	1	ppb	5.361	5.361	5.16
Mo	97	72	1	ppb	5.369	5.369	1.19
Rh	103	115	1	ppb	-7.338	-7.338	-74.06
Pd	105	115	1	ppb	-22.853	-22.853	-525.50
Ag	107	72	1	ppb	5.290	5.290	3.75
Ag	109	72	1	ppb	5.337	5.337	4.09
Cd	111	115	1	ppb	5.060	5.060	3.15

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	5.113	5.113	3.39
Sn	118	72	1	ppb	5.255	5.255	2.09
Sn	119	72	1	ppb	5.338	5.338	6.00
Sb	121	72	1	ppb	5.273	5.273	2.98
Sb	121	72	2	ppb	5.249	5.249	2.08
Sb	123	72	1	ppb	5.263	5.263	3.83
Ba	135	115	1	ppb	4.992	4.992	3.12
Ba	137	115	1	ppb	5.030	5.030	3.07
W	182	209	1	ppb	37.444	37.444	80.62
Pt	195	209	1	ppb	-272.404	-272.404	-68.36
Au	197	209	1	ppb	-659.176	-659.176	-270.21
Tl	203	209	1	ppb	5.975	5.975	7.31
Tl	205	209	1	ppb	5.978	5.978	8.08
Pb	206	209	1	ppb	5.246	5.246	2.11
Pb	207	209	1	ppb	5.189	5.189	0.91
Pb	208	209	1	ppb	5.046	5.046	0.78
U	238	209	1	ppb	4.187	4.187	1.47

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	220,211	2.00	216342	101.8	70	125	
1	Ge	72	1,693,082	2.12	1667733	101.5	70	125	
2	Ge	72	206,484	0.51	201779	102.3	70	125	
1	In	115	1,869,193	2.74	1810683	103.2	70	125	
1	Bi	209	1,774,755	1.38	1712654	103.6	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	144SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 23:09
Sample Name	LLCCV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	2.050	2.050	8.49
Be	9	6	1	ppb	2.054	2.054	4.00
B	11	6	1	ppb	17.190	17.190	9.41
Na	23	72	1	ppb	227.834	227.834	5.16
Na	23	72	2	ppb	206.802	206.802	1.39
Mg	24	72	1	ppb	227.577	227.577	5.67
Al	27	72	1	ppb	5.564	5.564	63.78
P	31	72	1	ppb	13.845	13.845	24.38
K	39	72	1	ppb	228.073	228.073	9.51
Ca	44	72	1	ppb	241.675	241.675	14.84
Ca	44	72	2	ppb	222.884	222.884	2.53
Ti	47	72	1	ppb	2.169	2.169	2.01
Ti	47	72	2	ppb	2.773	2.773	16.47
V	51	72	1	ppb	3.063	3.063	41.20
V	51	72	2	ppb	1.984	1.984	3.31
Cr	52	72	1	ppb	2.166	2.166	7.31
Cr	52	72	2	ppb	2.194	2.194	2.49
Mn	55	72	1	ppb	2.312	2.312	11.23
Mn	55	72	2	ppb	2.144	2.144	6.83
Fe	56	72	1	ppb	219.087	219.087	8.64
Fe	56	72	2	ppb	207.509	207.509	1.26
Co	59	72	1	ppb	2.182	2.182	2.98
Co	59	72	2	ppb	2.140	2.140	2.84
Ni	60	72	1	ppb	2.271	2.271	4.47
Ni	60	72	2	ppb	2.030	2.030	7.37
Cu	63	72	1	ppb	2.356	2.356	9.56
Cu	63	72	2	ppb	2.218	2.218	2.32
Cu	65	72	1	ppb	2.418	2.418	6.94
Zn	66	72	1	ppb	2.110	2.110	7.43
Zn	66	72	2	ppb	1.888	1.888	6.33
Zn	68	72	1	ppb	2.504	2.504	8.02
As	75	72	1	ppb	3.329	3.329	46.44
As	75	72	2	ppb	2.026	2.026	3.77
Se	78	72	1	ppb	3.599	3.599	87.01
Se	78	72	2	ppb	1.883	1.883	18.86
Se	82	72	1	ppb	2.344	2.344	10.24
Sr	88	72	1	ppb	2.138	2.138	6.24
Mo	95	72	1	ppb	2.112	2.112	4.19
Mo	97	72	1	ppb	2.165	2.165	6.72
Rh	103	115	1	ppb	-8.600	-8.600	-238.78
Pd	105	115	1	ppb	-54.640	-54.640	-150.89
Ag	107	72	1	ppb	2.224	2.224	5.21
Ag	109	72	1	ppb	2.160	2.160	0.82
Cd	111	115	1	ppb	2.139	2.139	13.23

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	2.110	2.110	5.81
Sn	118	72	1	ppb	2.193	2.193	7.42
Sn	119	72	1	ppb	2.105	2.105	14.42
Sb	121	72	1	ppb	2.175	2.175	3.87
Sb	121	72	2	ppb	2.055	2.055	1.57
Sb	123	72	1	ppb	2.162	2.162	4.05
Ba	135	115	1	ppb	2.137	2.137	4.69
Ba	137	115	1	ppb	2.206	2.206	9.03
W	182	209	1	ppb	-4.321	-4.321	-813.04
Pt	195	209	1	ppb	-241.991	-241.991	-71.20
Au	197	209	1	ppb	-942.949	-942.949	-262.66
Tl	203	209	1	ppb	2.451	2.451	2.07
Tl	205	209	1	ppb	2.472	2.472	1.96
Pb	206	209	1	ppb	2.256	2.256	13.09
Pb	207	209	1	ppb	2.196	2.196	12.66
Pb	208	209	1	ppb	2.148	2.148	11.46
U	238	209	1	ppb	1.751	1.751	5.12

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	213,277	4.86	216342	98.6	70	125	
1	Ge	72	1,634,055	3.73	1667733	98.0	70	125	
2	Ge	72	206,043	0.74	201779	102.1	70	125	
1	In	115	1,751,629	4.07	1810683	96.7	70	125	
1	Bi	209	1,669,856	4.88	1712654	97.5	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	145SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 23:14
Sample Name	ICCB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.018	0.018	283.32
Be	9	6	1	ppb	0.021	0.021	98.17
B	11	6	1	ppb	4.263	4.263	20.65
Na	23	72	1	ppb	-0.195	-0.195	-482.61
Na	23	72	2	ppb	0.264	0.264	262.15
Mg	24	72	1	ppb	-0.044	-0.044	-4446.95
Al	27	72	1	ppb	0.754	0.754	391.34
P	31	72	1	ppb	0.767	0.767	142.89
K	39	72	1	ppb	-0.175	-0.175	-7991.93
Ca	44	72	1	ppb	-2.182	-2.182	-767.07
Ca	44	72	2	ppb	9.497	9.497	114.52
Ti	47	72	1	ppb	-0.011	-0.011	-620.06
Ti	47	72	2	ppb	0.060	0.060	392.57
V	51	72	1	ppb	0.920	0.920	12.07
V	51	72	2	ppb	-0.040	-0.040	-4.81
Cr	52	72	1	ppb	-0.024	-0.024	-116.98
Cr	52	72	2	ppb	-0.011	-0.011	-60.91
Mn	55	72	1	ppb	0.046	0.046	139.39
Mn	55	72	2	ppb	-0.019	-0.019	-19.28
Fe	56	72	1	ppb	-6.662	-6.662	-11.32
Fe	56	72	2	ppb	0.085	0.085	191.87
Co	59	72	1	ppb	0.002	0.002	624.73
Co	59	72	2	ppb	0.001	0.001	638.91
Ni	60	72	1	ppb	-0.011	-0.011	-232.74
Ni	60	72	2	ppb	0.026	0.026	87.92
Cu	63	72	1	ppb	0.110	0.110	9.88
Cu	63	72	2	ppb	0.148	0.148	5.51
Cu	65	72	1	ppb	0.121	0.121	27.02
Zn	66	72	1	ppb	-0.054	-0.054	-145.48
Zn	66	72	2	ppb	-0.205	-0.205	-49.10
Zn	68	72	1	ppb	0.138	0.138	45.89
As	75	72	1	ppb	0.677	0.677	4.30
As	75	72	2	ppb	-0.002	-0.002	-1817.75
Se	78	72	1	ppb	-1.021	-1.021	-328.77
Se	78	72	2	ppb	-0.240	-0.240	-74.02
Se	82	72	1	ppb	0.060	0.060	421.33
Sr	88	72	1	ppb	0.010	0.010	369.25
Mo	95	72	1	ppb	0.010	0.010	238.46
Mo	97	72	1	ppb	0.005	0.005	539.94
Rh	103	115	1	ppb	-22.601	-22.601	-70.18
Pd	105	115	1	ppb	-23.986	-23.986	-246.22
Ag	107	72	1	ppb	0.010	0.010	67.08
Ag	109	72	1	ppb	0.010	0.010	47.30
Cd	111	115	1	ppb	0.005	0.005	84.72

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.001	0.001	1107.72
Sn	118	72	1	ppb	0.080	0.080	35.39
Sn	119	72	1	ppb	0.086	0.086	36.47
Sb	121	72	1	ppb	0.008	0.008	109.83
Sb	121	72	2	ppb	-0.007	-0.007	-29.04
Sb	123	72	1	ppb	0.013	0.013	35.67
Ba	135	115	1	ppb	-0.016	-0.016	-156.28
Ba	137	115	1	ppb	0.008	0.008	298.41
W	182	209	1	ppb	-13.563	-13.563	-185.89
Pt	195	209	1	ppb	-52.741	-52.741	-1176.54
Au	197	209	1	ppb	-1491.918	-1491.918	-36.85
Tl	203	209	1	ppb	0.192	0.192	39.48
Tl	205	209	1	ppb	0.198	0.198	36.97
Pb	206	209	1	ppb	-0.050	-0.050	-184.94
Pb	207	209	1	ppb	-0.065	-0.065	-159.38
Pb	208	209	1	ppb	-0.046	-0.046	-210.34
U	238	209	1	ppb	0.003	0.003	128.27

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	224,103	2.74	216342	103.6	70	125	
1	Ge	72	1,689,696	3.74	1667733	101.3	70	125	
2	Ge	72	203,698	0.70	201779	101.0	70	125	
1	In	115	1,824,626	3.24	1810683	100.8	70	125	
1	Bi	209	1,748,719	2.68	1712654	102.1	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Verification (CCV) - US EPA Method 6020

Sample Name	**CCV**
Data File Name	**146CCV.D**
DataPath	**C:\ICPMH\1\DATA\17D25I00.B**
AcqDateTime	**4/25/2017 23:19**
Type	**CCV**
VialNumber	**1307**
Dilution	**1**
Comment	
Operator	(b) (6) **ICPMS04**
ISTDRefDataFileName	**136CALB.D**
SamplePassFail	**Pass**
ISTD PassFail	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune	Meas Value	%RSD	Units	Exp Val	%Rec	QC Low	QC High	QC Flag
Be	9	6	1	100.94	1.92	ppb	100	100.9	90	110	
Na	23	72	2	10080.61	0.66	ppb	10000	100.8	90	110	
Mg	24	72	1	10037.19	0.68	ppb	10000	100.4	90	110	
K	39	72	1	9924.31	0.38	ppb	10000	99.2	90	110	
Cr	52	72	2	99.27	0.76	ppb	100	99.3	90	110	
Mn	55	72	2	99.01	1.69	ppb	100	99.0	90	110	
Fe	56	72	2	9929.88	0.41	ppb	10000	99.3	90	110	
Co	59	72	2	99.55	1.15	ppb	100	99.5	90	110	
Ni	60	72	2	100.29	0.59	ppb	100	100.3	90	110	
Cu	63	72	2	98.87	0.71	ppb	100	98.9	90	110	
Zn	66	72	2	97.30	1.99	ppb	100	97.3	90	110	
As	75	72	2	97.93	0.76	ppb	100	97.9	90	110	
Se	78	72	2	98.84	2.99	ppb	100	98.8	90	110	
Mo	95	72	1	99.36	0.37	ppb	100	99.4	90	110	
Ag	107	72	1	104.46	0.50	ppb	100	104.5	90	110	
Cd	111	115	1	99.50	1.32	ppb	100	99.5	90	110	
Sb	121	72	2	98.94	0.35	ppb	100	98.9	90	110	
Ba	135	115	1	99.49	1.64	ppb	100	99.5	90	110	
Tl	203	209	1	100.01	1.17	ppb	100	100.0	90	110	
Pb	208	209	1	97.95	2.17	ppb	100	98.0	90	110	

QC ISTD Table

Element	m/z	Tune	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	196168	0.97	216342	**90.7**	70	125	
Ge	72	1	1615698	0.40	1667733	**96.9**	70	125	
Ge	72	2	197009	0.38	201779	**97.6**	70	125	
In	115	1	1733927	1.17	1810683	**95.8**	70	125	
Bi	209	1	1645105	2.47	1712654	**96.1**	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**147CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D25l00.B**	**AcqDateTime**	**4/25/2017 23:24**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**136CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.13	36.92	ppb	2.5	
Be	9	6	1	0.12	9.27	ppb	1	
B	11	6	1	13.92	1.84	ppb	5	>2.2*DL
Na	23	72	1	12.82	5.29	ppb	250	
Na	23	72	2	12.65	2.23	ppb	250	
Mg	24	72	1	11.69	9.53	ppb	250	
Al	27	72	1	7.03	34.27	ppb	5	>2.2*DL
P	31	72	1	4.36	7.34	ppb	5	
K	39	72	1	9.05	99.36	ppb	250	
Ca	44	72	1	51.00	23.78	ppb	250	
Ca	44	72	2	56.05	11.93	ppb	250	
Ti	47	72	1	0.21	30.86	ppb	2.5	
Ti	47	72	2	-0.01	-815.77	ppb	2.5	
V	51	72	1	0.18	234.27	ppb	2.5	
V	51	72	2	0.06	112.15	ppb	2.5	
Cr	52	72	1	0.04	51.07	ppb	2.5	
Cr	52	72	2	0.11	48.51	ppb	2.5	
Mn	55	72	1	0.37	25.37	ppb	2.5	
Mn	55	72	2	0.27	14.29	ppb	2.5	
Fe	56	72	1	6.10	49.43	ppb	100	
Fe	56	72	2	16.06	3.55	ppb	100	
Co	59	72	1	0.09	3.72	ppb	2.5	
Co	59	72	2	0.07	14.63	ppb	2.5	
Ni	60	72	1	0.11	34.17	ppb	2.5	
Ni	60	72	2	0.13	22.37	ppb	2.5	
Cu	63	72	1	0.11	22.14	ppb	2.5	
Cu	63	72	2	0.15	31.75	ppb	2.5	
Cu	65	72	1	0.19	12.95	ppb	2.5	
Zn	66	72	1	0.25	35.55	ppb	2.5	
Zn	66	72	2	0.17	41.78	ppb	2.5	
Zn	68	72	1	0.50	19.58	ppb	2.5	
As	75	72	1	0.35	144.76	ppb	2.5	
As	75	72	2	0.07	31.36	ppb	2.5	
Se	78	72	1	-1.25	-139.67	ppb	2.5	
Se	78	72	2	0.50	34.21	ppb	2.5	
Se	82	72	1	0.13	172.07	ppb	2.5	
Sr	88	72	1	0.17	10.41	ppb	2.5	
Mo	95	72	1	0.18	11.26	ppb	2.5	
Mo	97	72	1	0.19	18.87	ppb	2.5	
Ag	107	72	1	0.10	9.10	ppb	2.5	
Ag	109	72	1	0.10	5.75	ppb	2.5	
Cd	111	115	1	0.09	15.18	ppb	2.5	
Cd	114	115	1	0.07	4.81	ppb	2.5	
Sn	118	72	1	0.22	12.63	ppb	2.5	
Sn	119	72	1	0.14	15.53	ppb	2.5	
Sb	121	72	1	0.18	10.10	ppb	2.5	
Sb	121	72	2	0.18	13.49	ppb	2.5	
Sb	123	72	1	0.18	13.61	ppb	2.5	
Ba	135	115	1	0.16	19.63	ppb	2.5	
Ba	137	115	1	0.14	17.33	ppb	2.5	
Tl	203	209	1	1.08	9.88	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.09	12.39	ppb	2.5	
Pb	206	209	1	0.25	24.91	ppb	2.5	
Pb	207	209	1	0.22	29.27	ppb	2.5	
Pb	208	209	1	0.22	40.46	ppb	2.5	
U	238	209	1	0.07	5.64	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	225129	2.48	216342	104.1	70	125	
Ge	72	1	1716603	2.49	1667733	102.9	70	125	
Ge	72	2	208898	0.25	201779	103.5	70	125	
In	115	1	1868522	2.73	1810683	103.2	70	125	
Bi	209	1	1756005	2.68	1712654	102.5	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	148SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 23:29
Sample Name	LLCCV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	1.828	1.828	3.40
Be	9	6	1	ppb	2.017	2.017	3.80
B	11	6	1	ppb	18.890	18.890	8.59
Na	23	72	1	ppb	217.865	217.865	2.64
Na	23	72	2	ppb	206.010	206.010	1.92
Mg	24	72	1	ppb	221.117	221.117	2.60
Al	27	72	1	ppb	5.548	5.548	41.14
P	31	72	1	ppb	12.883	12.883	2.76
K	39	72	1	ppb	213.905	213.905	9.18
Ca	44	72	1	ppb	232.956	232.956	4.41
Ca	44	72	2	ppb	228.715	228.715	7.38
Ti	47	72	1	ppb	2.094	2.094	12.17
Ti	47	72	2	ppb	1.771	1.771	25.35
V	51	72	1	ppb	2.671	2.671	13.51
V	51	72	2	ppb	1.983	1.983	0.30
Cr	52	72	1	ppb	2.109	2.109	3.24
Cr	52	72	2	ppb	1.995	1.995	7.25
Mn	55	72	1	ppb	2.273	2.273	2.89
Mn	55	72	2	ppb	2.212	2.212	4.72
Fe	56	72	1	ppb	215.050	215.050	3.70
Fe	56	72	2	ppb	208.383	208.383	0.29
Co	59	72	1	ppb	2.155	2.155	2.98
Co	59	72	2	ppb	2.162	2.162	1.54
Ni	60	72	1	ppb	2.208	2.208	1.91
Ni	60	72	2	ppb	2.070	2.070	1.38
Cu	63	72	1	ppb	2.174	2.174	3.00
Cu	63	72	2	ppb	2.013	2.013	6.63
Cu	65	72	1	ppb	2.179	2.179	3.84
Zn	66	72	1	ppb	2.109	2.109	3.59
Zn	66	72	2	ppb	1.819	1.819	2.82
Zn	68	72	1	ppb	2.362	2.362	4.52
As	75	72	1	ppb	2.316	2.316	17.68
As	75	72	2	ppb	2.071	2.071	7.73
Se	78	72	1	ppb	0.738	0.738	391.58
Se	78	72	2	ppb	1.999	1.999	26.30
Se	82	72	1	ppb	1.698	1.698	13.03
Sr	88	72	1	ppb	2.072	2.072	3.40
Mo	95	72	1	ppb	2.088	2.088	7.05
Mo	97	72	1	ppb	2.165	2.165	3.73
Rh	103	115	1	ppb	-29.867	-29.867	-1.47
Pd	105	115	1	ppb	-75.210	-75.210	-259.66
Ag	107	72	1	ppb	2.098	2.098	3.35
Ag	109	72	1	ppb	2.132	2.132	3.74
Cd	111	115	1	ppb	2.047	2.047	1.14

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	2.029	2.029	4.08
Sn	118	72	1	ppb	2.064	2.064	1.22
Sn	119	72	1	ppb	2.002	2.002	8.90
Sb	121	72	1	ppb	2.089	2.089	3.56
Sb	121	72	2	ppb	2.039	2.039	1.69
Sb	123	72	1	ppb	2.094	2.094	4.81
Ba	135	115	1	ppb	1.991	1.991	2.48
Ba	137	115	1	ppb	2.097	2.097	2.99
W	182	209	1	ppb	50.737	50.737	25.54
Pt	195	209	1	ppb	-66.210	-66.210	-438.18
Au	197	209	1	ppb	-983.709	-983.709	-63.72
Tl	203	209	1	ppb	2.082	2.082	9.50
Tl	205	209	1	ppb	2.082	2.082	9.24
Pb	206	209	1	ppb	2.072	2.072	1.88
Pb	207	209	1	ppb	2.083	2.083	3.06
Pb	208	209	1	ppb	2.020	2.020	4.34
U	238	209	1	ppb	1.674	1.674	1.97

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	225,129	2.24	216342	104.1	70	125	
1	Ge	72	1,691,821	3.08	1667733	101.4	70	125	
2	Ge	72	207,448	0.77	201779	102.8	70	125	
1	In	115	1,850,392	1.81	1810683	102.2	70	125	
1	Bi	209	1,771,833	1.25	1712654	103.5	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	149SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 23:34
Sample Name	LLCCV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	4.607	4.607	0.55
Be	9	6	1	ppb	5.182	5.182	2.88
B	11	6	1	ppb	29.004	29.004	2.57
Na	23	72	1	ppb	548.398	548.398	1.56
Na	23	72	2	ppb	518.393	518.393	1.31
Mg	24	72	1	ppb	554.159	554.159	1.96
Al	27	72	1	ppb	8.381	8.381	37.16
P	31	72	1	ppb	30.056	30.056	4.36
K	39	72	1	ppb	541.618	541.618	1.53
Ca	44	72	1	ppb	559.031	559.031	4.00
Ca	44	72	2	ppb	555.660	555.660	5.56
Ti	47	72	1	ppb	5.457	5.457	0.45
Ti	47	72	2	ppb	5.817	5.817	13.96
V	51	72	1	ppb	6.696	6.696	14.15
V	51	72	2	ppb	5.066	5.066	1.76
Cr	52	72	1	ppb	5.346	5.346	2.22
Cr	52	72	2	ppb	5.260	5.260	4.52
Mn	55	72	1	ppb	5.459	5.459	3.71
Mn	55	72	2	ppb	5.331	5.331	1.75
Fe	56	72	1	ppb	542.464	542.464	1.95
Fe	56	72	2	ppb	518.695	518.695	0.86
Co	59	72	1	ppb	5.306	5.306	0.34
Co	59	72	2	ppb	5.284	5.284	1.66
Ni	60	72	1	ppb	5.411	5.411	2.98
Ni	60	72	2	ppb	5.326	5.326	1.23
Cu	63	72	1	ppb	5.323	5.323	3.04
Cu	63	72	2	ppb	5.129	5.129	3.33
Cu	65	72	1	ppb	5.383	5.383	4.48
Zn	66	72	1	ppb	5.461	5.461	6.05
Zn	66	72	2	ppb	5.099	5.099	8.95
Zn	68	72	1	ppb	5.566	5.566	4.42
As	75	72	1	ppb	6.365	6.365	16.36
As	75	72	2	ppb	5.255	5.255	1.51
Se	78	72	1	ppb	4.430	4.430	15.60
Se	78	72	2	ppb	5.165	5.165	24.79
Se	82	72	1	ppb	5.512	5.512	2.25
Sr	88	72	1	ppb	5.148	5.148	0.99
Mo	95	72	1	ppb	5.316	5.316	1.11
Mo	97	72	1	ppb	5.172	5.172	1.47
Rh	103	115	1	ppb	-25.136	-25.136	-15.19
Pd	105	115	1	ppb	-143.607	-143.607	-84.12
Ag	107	72	1	ppb	5.275	5.275	3.11
Ag	109	72	1	ppb	5.285	5.285	0.43
Cd	111	115	1	ppb	5.196	5.196	4.62

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	5.242	5.242	0.32
Sn	118	72	1	ppb	5.156	5.156	2.72
Sn	119	72	1	ppb	5.168	5.168	1.61
Sb	121	72	1	ppb	5.249	5.249	0.55
Sb	121	72	2	ppb	5.099	5.099	0.80
Sb	123	72	1	ppb	5.255	5.255	2.21
Ba	135	115	1	ppb	5.301	5.301	4.01
Ba	137	115	1	ppb	5.247	5.247	2.63
W	182	209	1	ppb	4.745	4.745	252.60
Pt	195	209	1	ppb	-191.572	-191.572	-318.63
Au	197	209	1	ppb	-150.251	-150.251	-366.33
Tl	203	209	1	ppb	4.930	4.930	3.04
Tl	205	209	1	ppb	4.935	4.935	2.51
Pb	206	209	1	ppb	5.421	5.421	4.47
Pb	207	209	1	ppb	5.309	5.309	5.59
Pb	208	209	1	ppb	5.177	5.177	5.71
U	238	209	1	ppb	4.342	4.342	3.07

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	217,962	0.83	216342	100.7	70	125	
1	Ge	72	1,655,591	0.92	1667733	99.3	70	125	
2	Ge	72	205,370	0.30	201779	101.8	70	125	
1	In	115	1,805,988	1.88	1810683	99.7	70	125	
1	Bi	209	1,695,556	2.94	1712654	99.0	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	150SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 23:40
Sample Name	ICSA	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.569	0.569	11.96
Be	9	6	1	ppb	0.021	0.021	127.97
B	11	6	1	ppb	6.338	6.338	5.52
Na	23	72	1	ppb	100180.354	100180.354	0.98
Na	23	72	2	ppb	99524.989	99524.989	0.66
Mg	24	72	1	ppb	99485.784	99485.784	0.96
Al	27	72	1	ppb	91897.627	91897.627	0.91
P	31	72	1	ppb	96596.526	96596.526	0.85
K	39	72	1	ppb	100234.147	100234.147	0.44
Ca	44	72	1	ppb	99059.978	99059.978	0.41
Ca	44	72	2	ppb	95907.338	95907.338	0.47
Ti	47	72	1	ppb	2078.555	2078.555	1.15
Ti	47	72	2	ppb	2108.553	2108.553	0.19
V	51	72	1	ppb	7.698	7.698	6.63
V	51	72	2	ppb	0.074	0.074	21.33
Cr	52	72	1	ppb	2.087	2.087	2.01
Cr	52	72	2	ppb	1.276	1.276	8.02
Mn	55	72	1	ppb	0.217	0.217	41.91
Mn	55	72	2	ppb	0.133	0.133	39.79
Fe	56	72	1	ppb	99593.679	99593.679	1.23
Fe	56	72	2	ppb	99415.461	99415.461	0.69
Co	59	72	1	ppb	0.106	0.106	3.93
Co	59	72	2	ppb	0.025	0.025	51.57
Ni	60	72	1	ppb	0.513	0.513	15.87
Ni	60	72	2	ppb	0.158	0.158	23.81
Cu	63	72	1	ppb	1.888	1.888	15.62
Cu	63	72	2	ppb	2.092	2.092	8.45
Cu	65	72	1	ppb	1.752	1.752	15.12
Zn	66	72	1	ppb	1.101	1.101	10.32
Zn	66	72	2	ppb	0.330	0.330	10.77
Zn	68	72	1	ppb	0.567	0.567	23.06
As	75	72	1	ppb	6.954	6.954	13.23
As	75	72	2	ppb	0.077	0.077	50.15
Se	78	72	1	ppb	2.013	2.013	27.38
Se	78	72	2	ppb	0.319	0.319	82.26
Se	82	72	1	ppb	0.032	0.032	161.14
Sr	88	72	1	ppb	0.899	0.899	4.99
Mo	95	72	1	ppb	2096.907	2096.907	1.46
Mo	97	72	1	ppb	2076.567	2076.567	1.79
Rh	103	115	1	ppb	-9.105	-9.105	-289.42
Pd	105	115	1	ppb	-86.849	-86.849	-70.01
Ag	107	72	1	ppb	0.049	0.049	3.96
Ag	109	72	1	ppb	0.048	0.048	9.10
Cd	111	115	1	ppb	0.815	0.815	8.21

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.543	0.543	5.96
Sn	118	72	1	ppb	0.131	0.131	13.83
Sn	119	72	1	ppb	0.098	0.098	27.95
Sb	121	72	1	ppb	0.085	0.085	9.72
Sb	121	72	2	ppb	0.068	0.068	15.91
Sb	123	72	1	ppb	0.076	0.076	18.51
Ba	135	115	1	ppb	0.069	0.069	58.74
Ba	137	115	1	ppb	0.065	0.065	51.52
W	182	209	1	ppb	1930.579	1930.579	4.53
Pt	195	209	1	ppb	-89.257	-89.257	-90.47
Au	197	209	1	ppb	-978.939	-978.939	-174.52
Tl	203	209	1	ppb	0.086	0.086	46.51
Tl	205	209	1	ppb	0.088	0.088	45.42
Pb	206	209	1	ppb	0.103	0.103	87.58
Pb	207	209	1	ppb	0.088	0.088	57.80
Pb	208	209	1	ppb	0.112	0.112	63.51
U	238	209	1	ppb	0.006	0.006	31.00

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	201,727	1.31	216342	93.2	70	125	
1	Ge	72	1,596,615	0.27	1667733	95.7	70	125	
2	Ge	72	198,850	0.29	201779	98.5	70	125	
1	In	115	1,713,707	1.92	1810683	94.6	70	125	
1	Bi	209	1,630,873	1.18	1712654	95.2	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Sample QC Report

File Name	151SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D25l00.B
Method File	ICP-ORS.m	**Acq Time**	4/25/2017 23:44
Sample Name	ICSAB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	93.601	93.601	2.16
Be	9	6	1	ppb	99.105	99.105	0.67
B	11	6	1	ppb	478.388	478.388	2.99
Na	23	72	1	ppb	113601.284	113601.284	3.29
Na	23	72	2	ppb	112216.515	112216.515	0.43
Mg	24	72	1	ppb	112879.420	112879.420	3.49
Al	27	72	1	ppb	94600.231	94600.231	3.54
P	31	72	1	ppb	99007.734	99007.734	3.73
K	39	72	1	ppb	112759.697	112759.697	4.18
Ca	44	72	1	ppb	111171.797	111171.797	3.52
Ca	44	72	2	ppb	107935.262	107935.262	0.32
Ti	47	72	1	ppb	2234.544	2234.544	3.33
Ti	47	72	2	ppb	2227.825	2227.825	0.16
V	51	72	1	ppb	113.911	113.911	2.35
V	51	72	2	ppb	98.776	98.776	0.45
Cr	52	72	1	ppb	97.061	97.061	3.20
Cr	52	72	2	ppb	98.816	98.816	0.62
Mn	55	72	1	ppb	95.758	95.758	3.13
Mn	55	72	2	ppb	97.604	97.604	0.60
Fe	56	72	1	ppb	111885.240	111885.240	3.31
Fe	56	72	2	ppb	109845.369	109845.369	0.20
Co	59	72	1	ppb	96.499	96.499	3.00
Co	59	72	2	ppb	98.727	98.727	0.72
Ni	60	72	1	ppb	99.003	99.003	3.36
Ni	60	72	2	ppb	96.947	96.947	1.56
Cu	63	72	1	ppb	101.910	101.910	2.94
Cu	63	72	2	ppb	100.215	100.215	0.36
Cu	65	72	1	ppb	101.037	101.037	2.90
Zn	66	72	1	ppb	100.429	100.429	2.49
Zn	66	72	2	ppb	97.336	97.336	1.57
Zn	68	72	1	ppb	99.785	99.785	3.15
As	75	72	1	ppb	107.373	107.373	2.44
As	75	72	2	ppb	99.181	99.181	0.91
Se	78	72	1	ppb	105.576	105.576	3.98
Se	78	72	2	ppb	99.445	99.445	1.95
Se	82	72	1	ppb	100.617	100.617	2.97
Sr	88	72	1	ppb	99.949	99.949	3.44
Mo	95	72	1	ppb	2221.101	2221.101	3.10
Mo	97	72	1	ppb	2194.544	2194.544	2.88
Rh	103	115	1	ppb	69.882	69.882	38.05
Pd	105	115	1	ppb	81.708	81.708	49.20
Ag	107	72	1	ppb	94.555	94.555	3.32
Ag	109	72	1	ppb	94.654	94.654	3.31
Cd	111	115	1	ppb	97.325	97.325	3.13

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	97.857	97.857	2.89
Sn	118	72	1	ppb	98.128	98.128	4.09
Sn	119	72	1	ppb	97.412	97.412	3.09
Sb	121	72	1	ppb	99.872	99.872	2.56
Sb	121	72	2	ppb	97.814	97.814	0.24
Sb	123	72	1	ppb	99.147	99.147	2.77
Ba	135	115	1	ppb	97.366	97.366	2.51
Ba	137	115	1	ppb	97.987	97.987	2.60
W	182	209	1	ppb	1907.222	1907.222	3.51
Pt	195	209	1	ppb	150.910	150.910	253.06
Au	197	209	1	ppb	2319.288	2319.288	98.37
Tl	203	209	1	ppb	91.212	91.212	7.37
Tl	205	209	1	ppb	91.773	91.773	7.36
Pb	206	209	1	ppb	97.216	97.216	3.36
Pb	207	209	1	ppb	97.125	97.125	3.39
Pb	208	209	1	ppb	94.004	94.004	3.01
U	238	209	1	ppb	100.755	100.755	2.59

ISTD Table

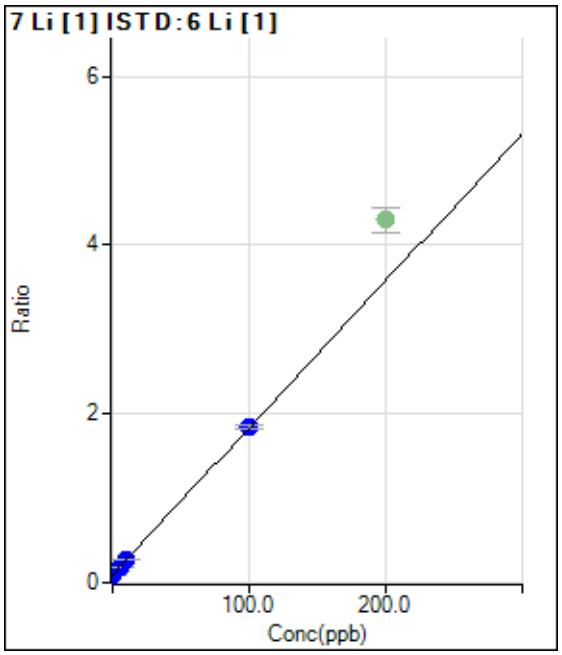
Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	200,344	0.48	216342	92.6	70	125	
1	Ge	72	1,643,066	1.34	1667733	98.5	70	125	
2	Ge	72	204,193	0.16	201779	101.2	70	125	
1	In	115	1,776,753	0.99	1810683	98.1	70	125	
1	Bi	209	1,666,281	1.48	1712654	97.3	70	125	

TuneStep	TuneFile
1	042517a5.u
2	042517he.u

Calibration for 013SMPL.D

Batch Folder:	C:¥ICPMH¥1¥DATA¥17D25I00.B¥
Analysis File:	17D25I00.batch.xml
DA Date-Time:	4/25/2017 1:01:42 PM
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	
Tune Step:	#1 042517a5.u
	#2 042517he.u

Level	Standard Data File	Sample Name	Acq. Date-Time
1	003CALB.D	CAL BLK	4/25/2017 12:11:13 PM
2	004CALS.D	2/10/200	4/25/2017 12:15:46 PM
3	005CALS.D	5/25/500	4/25/2017 12:20:21 PM
4	006CALS.D	10/50/1000	4/25/2017 12:24:55 PM
5	007CALS.D	100/500/10K	4/25/2017 12:29:31 PM
6	008CALS.D	200/1000/20K	4/25/2017 12:34:04 PM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36325.65	0.0954	P	0.9
2	☐	2.000	1.907	43183.58	0.1286	P	0.1
3	☐	5.000	4.817	66309.56	0.1793	P	1.4
4	☐	10.000	9.786	88844.53	0.2658	P	2.2
5	☐	100.000	100.032	573472.58	1.8376	P	2.2
6	☑	200.000		1147621.04	4.2987	A	7.1
7	☐	1.000					

y = 0.0174 * x + 0.0954

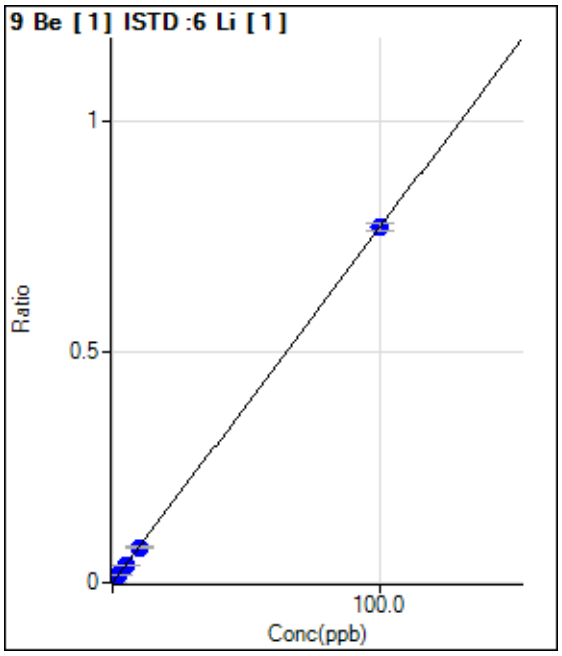
R = 1.0000

DL = 0.1405

BEC = 5.478

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34.45	0.0001	P	36.7
2	☐	2.000	1.957	5100.95	0.0152	P	6.7
3	☐	5.000	4.732	13543.39	0.0366	P	2.0
4	☐	10.000	9.873	25501.23	0.0763	P	2.6
5	☐	100.000	100.027	241014.13	0.7723	P	2.2
6	☐			483214.95	1.8119	P	9.0
7	☐	1.000					

y = 0.0077 * x + 9.0454E-005

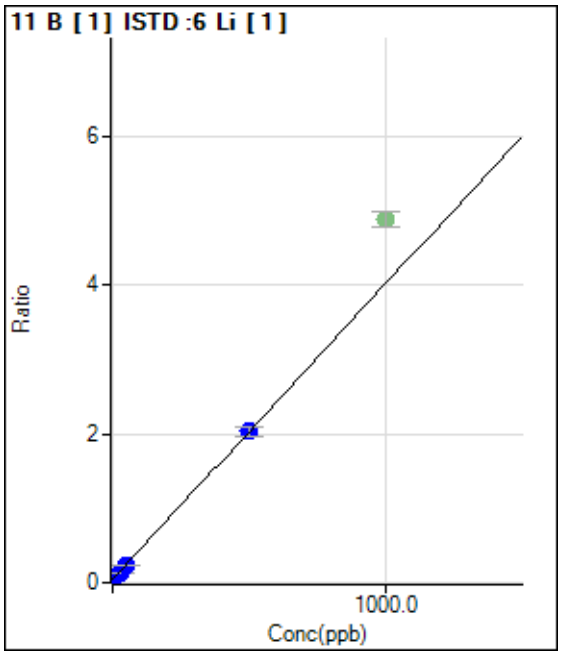
R = 1.0000

DL = 0.01289

BEC = 0.01172

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17746.10	0.0466	P	0.9
2	☐	10.000	9.150	27850.37	0.0830	P	3.7
3	☐	25.000	21.979	49526.38	0.1340	P	5.8
4	☐	50.000	47.343	78439.49	0.2348	P	6.7
5	☐	500.000	500.434	635200.28	2.0363	P	5.8
6	☑	1000.000		1304847.97	4.8793	A	4.2
7	☐	5.000					

y = 0.0040 * x + 0.0466

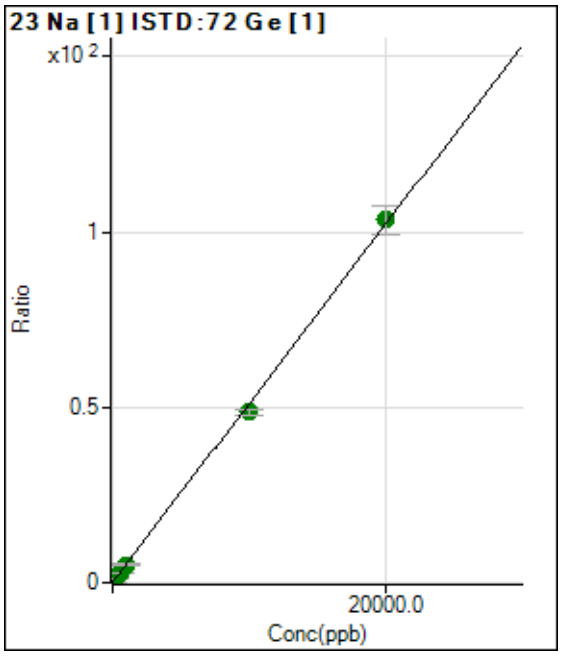
R = 1.0000

DL = 0.3199

BEC = 11.72

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	243928.33	0.1101	P	8.0
2	☐	200.000	195.752	2353719.10	1.1087	A	2.8
3	☐	500.000	493.354	5723940.05	2.6268	A	2.5
4	☐	1000.000	997.562	10905797.61	5.1988	A	2.1
5	☐	10000.00	9494.102	99822232.96	48.5411	A	2.4
6	☐	20000.00	20253.28	194895030.4	103.425	A	8.2
7	☐	100.000					

y = 0.0051 * x + 0.1101

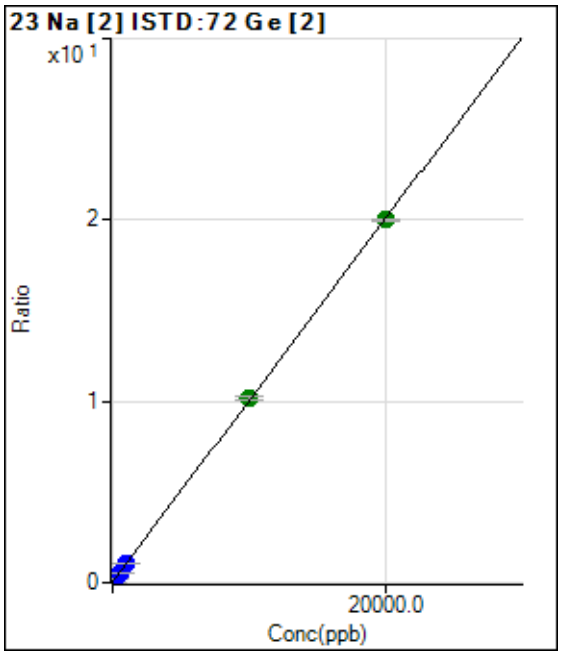
R = 0.9996

DL = 5.159

BEC = 21.58

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8694.70	0.0307	P	1.9
2	☐	200.000	205.675	63149.33	0.2369	P	1.4
3	☐	500.000	517.259	151975.21	0.5492	P	0.1
4	☐	1000.000	1048.822	283590.14	1.0820	P	0.4
5	☐	10000.00	10130.17	2637065.22	10.1842	A	1.6
6	☐	20000.00	19931.98	5115866.76	20.0085	A	0.5
7	☐	100.000					

y = 0.0010 * x + 0.0307

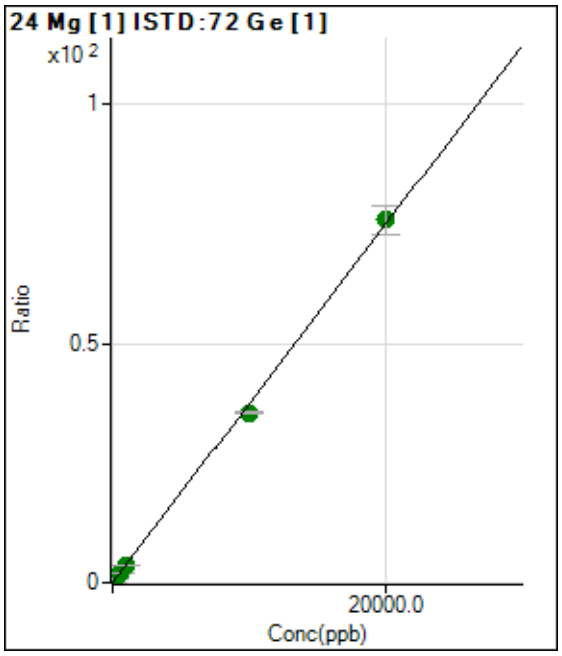
R = 1.0000

DL = 1.743

BEC = 30.67

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	35927.45	0.0162	P	49.8
2	☐	200.000	200.960	1631753.03	0.7685	A	2.1
3	☐	500.000	501.131	4122503.79	1.8922	A	3.4
4	☐	1000.000	1003.980	7917815.99	3.7745	A	2.2
5	☐	10000.00	9488.981	73084606.69	35.5378	A	1.8
6	☐	20000.00	20255.27	142921021.2	75.8410	A	8.1
7	☐	100.000					

y = 0.0037 * x + 0.0162

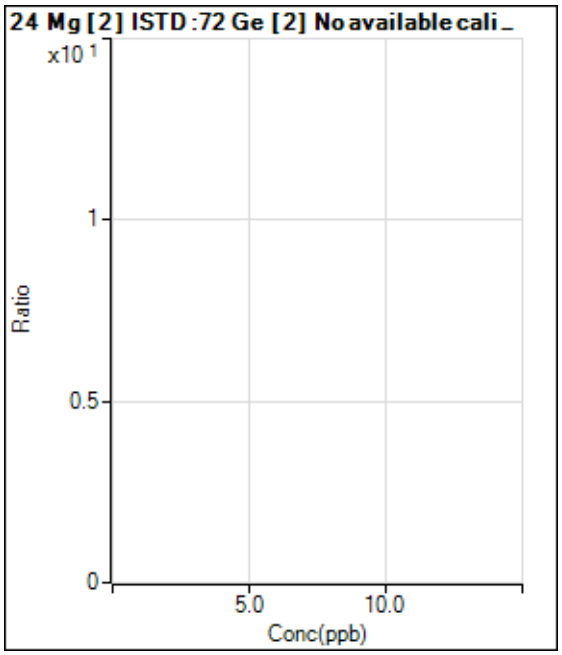
R = 0.9995

DL = 6.462

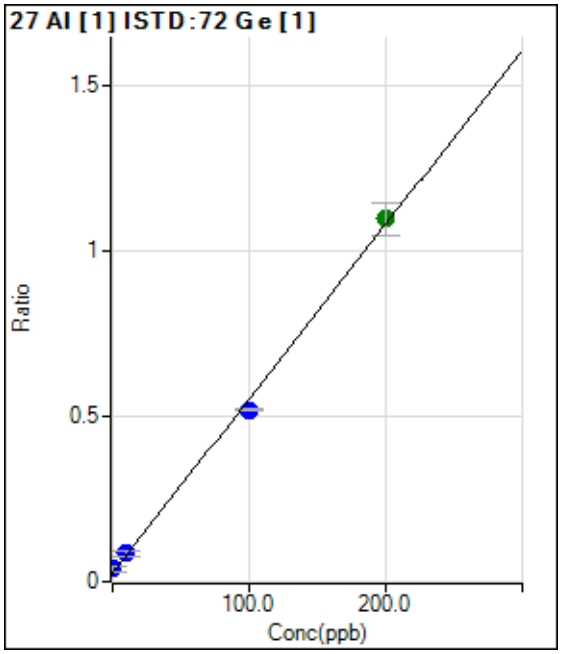
BEC = 4.324

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.00					
6	☐	20000.00					
7	☐	100.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	2.247	84111.22	0.0379	P	51.6
2	☐			105227.46	0.0493	P	29.4
3	☐			135366.86	0.0619	P	24.0
4	☐	10.000	11.126	178170.89	0.0847	P	16.6
5	☐	100.000	93.366	1066667.57	0.5186	P	1.1
6	☐	200.000	203.261	2068625.99	1.0983	A	9.3
7	☐	1.000					

y = 0.0053 * x + 0.0260

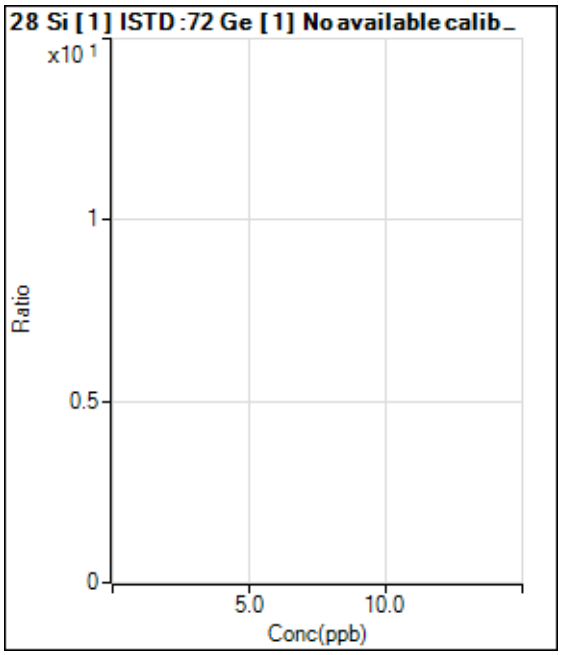
R = 0.9988

DL = 11.12

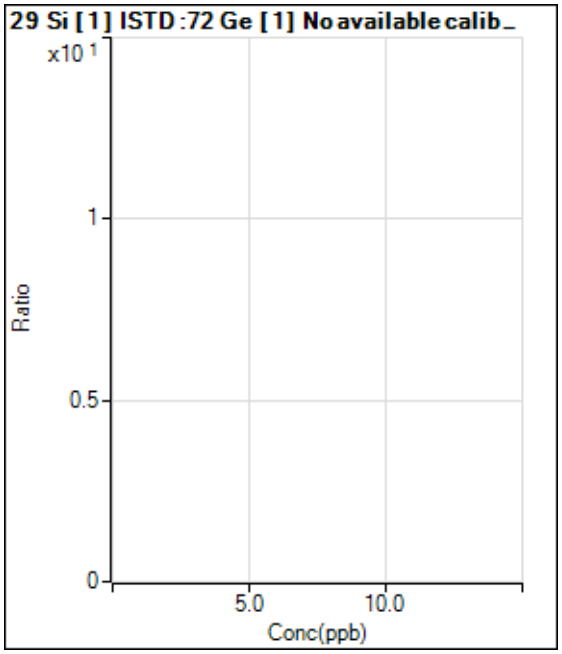
BEC = 4.932

Weight: None

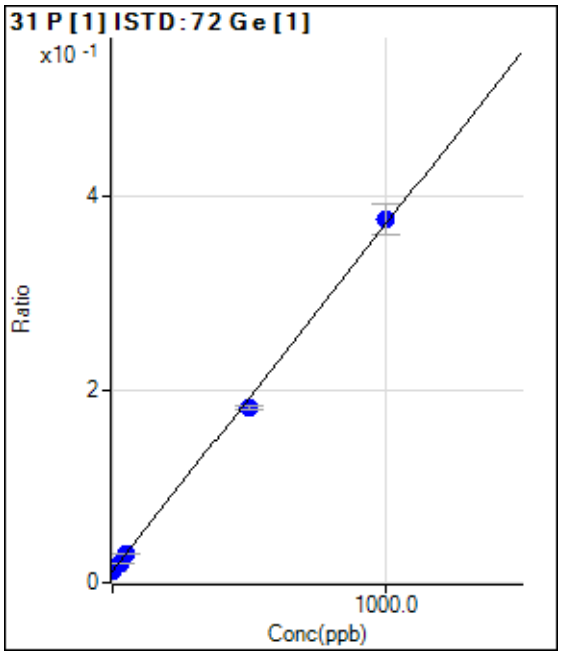
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26850.37	0.0121	P	5.0
2	☐	10.000	9.933	33317.08	0.0157	P	0.3
3	☐	25.000	23.678	44936.33	0.0206	P	1.3
4	☐	50.000	50.328	63322.80	0.0302	P	1.6
5	☐	500.000	472.876	373959.08	0.1818	P	2.4
6	☐	1000.000	1013.579	708358.22	0.3759	P	8.3
7	☐	5.000					

y = 3.5893E−004 * x + 0.0121

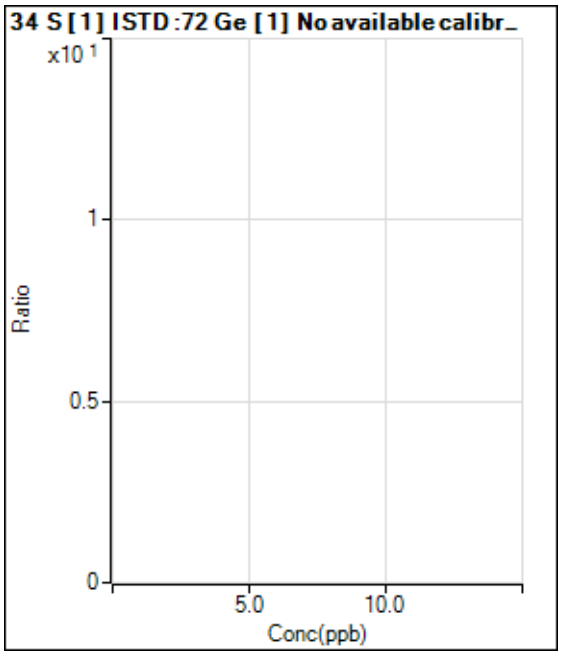
R = 0.9995

DL = 5.098

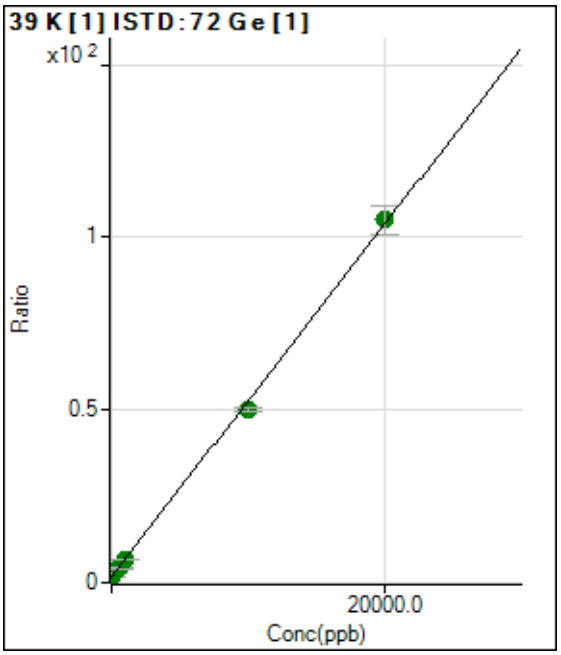
BEC = 33.76

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.00					
6	☐	40000.00					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3821603.21	1.7254	A	1.1
2	☐	200.000	197.651	5802134.91	2.7334	A	3.6
3	☐	500.000	491.412	9220056.74	4.2314	A	2.7
4	☐	1000.000	993.543	14246966.73	6.7921	A	2.5
5	☐	10000.00	9475.321	102919321.8	50.0453	A	1.8
6	☐	20000.00	20262.90	197973017.0	105.057	A	8.2
7	☐	100.000					

y = 0.0051 * x + 1.7254

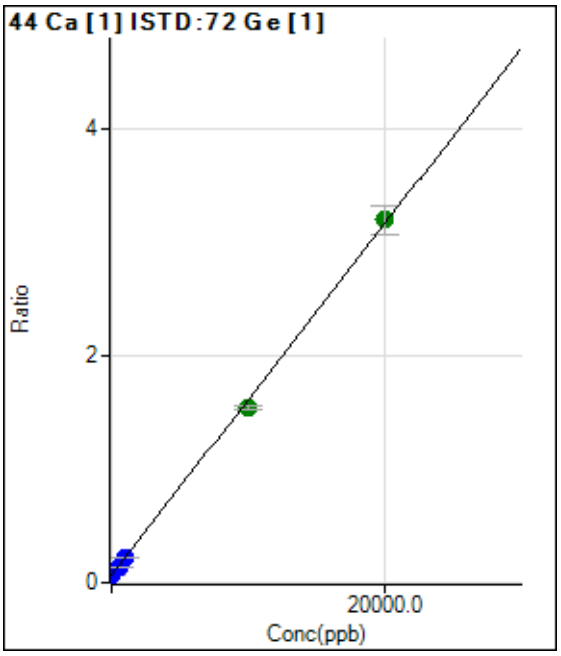
R = 0.9995

DL = 11.09

BEC = 338.4

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	147480.75	0.0666	P	4.8
2	☐	200.000	191.378	204475.52	0.0962	P	0.7
3	☐	500.000	463.677	301867.24	0.1385	P	0.7
4	☐	1000.000	963.662	453184.09	0.2160	P	1.3
5	☐	10000.00	9533.999	3177268.49	1.5449	A	1.3
6	☐	20000.00	20235.81	6038971.86	3.2043	A	8.0
7	☐	100.000					

y = 1.5506E-004 * x + 0.0666

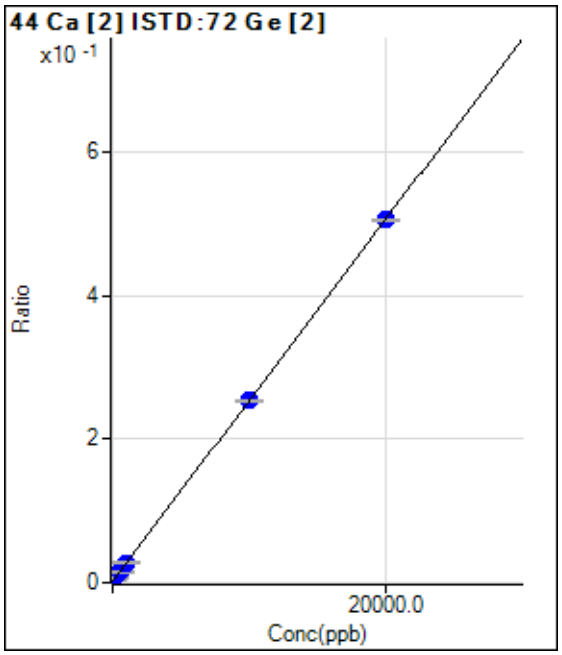
R = 0.9996

DL = 61.44

BEC = 429.3

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	472.25	0.0017	P	14.5
2	☐	200.000	202.181	1805.74	0.0068	P	4.0
3	☐	500.000	527.068	4144.03	0.0150	P	5.9
4	☐	1000.000	1042.345	7334.14	0.0280	P	3.4
5	☐	10000.00	10010.88	65870.28	0.2544	P	1.3
6	☐	20000.00	19991.74	129461.93	0.5063	P	0.3
7	☐	100.000					

y = 2.5243E-005 * x + 0.0017

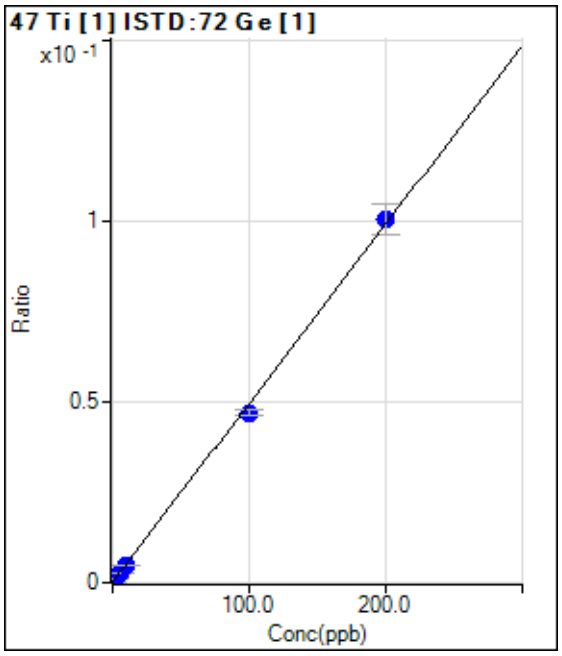
R = 1.0000

DL = 28.82

BEC = 66.16

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	247.79	0.0001	P	27.4
2	☐	2.000	1.851	2180.22	0.0010	P	10.8
3	☐	5.000	4.834	5461.11	0.0025	P	1.1
4	☐	10.000	9.721	10330.22	0.0049	P	2.6
5	☐	100.000	94.877	96828.54	0.0471	P	2.9
6	☐	200.000	202.581	189190.37	0.1004	P	8.5
7	☐	1.000					

y = 4.9512E-004 * x + 1.1166E-004

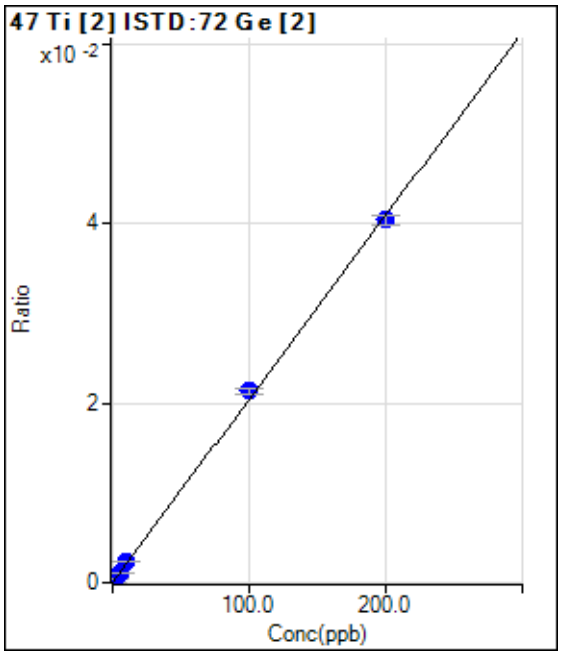
R = 0.9995

DL = 0.1855

BEC = 0.2255

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2.22	0.0000	P	173.
2	☐	2.000	1.983	110.01	0.0004	P	11.0
3	☐	5.000	4.995	284.46	0.0010	P	12.4
4	☐	10.000	11.278	605.60	0.0023	P	1.9
5	☐	100.000	104.449	5524.49	0.0213	P	3.0
6	☐	200.000	197.712	10323.55	0.0404	P	2.7
7	☐	1.000					

y = 2.0418E-004 * x + 7.8719E-006

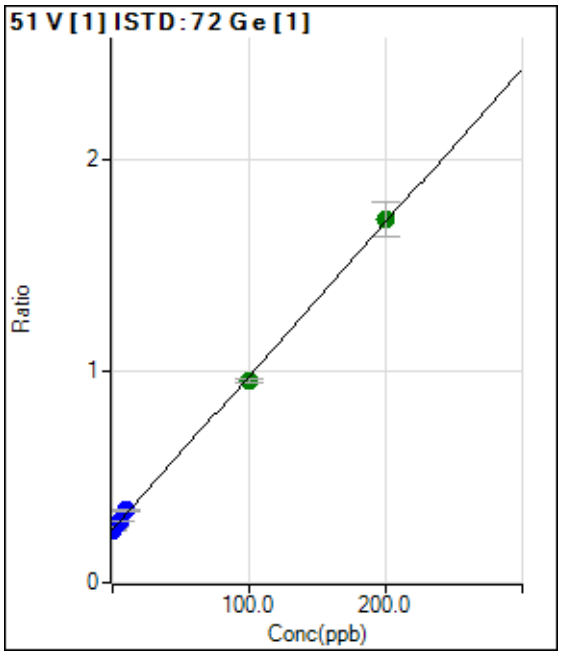
R = 0.9996

DL = 0.2003

BEC = 0.03855

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.516	549236.39	0.2479	P	4.6
2	☐	2.000	1.498	557955.23	0.2626	P	2.2
3	☐	5.000	5.439	635032.83	0.2912	P	2.0
4	☐	10.000	12.350	716624.70	0.3415	P	1.2
5	☐	100.000	96.703	1963961.47	0.9548	A	1.6
6	☐	200.000	201.525	3233105.24	1.7169	A	9.6
7	☐	1.000					

y = 0.0073 * x + 0.2517

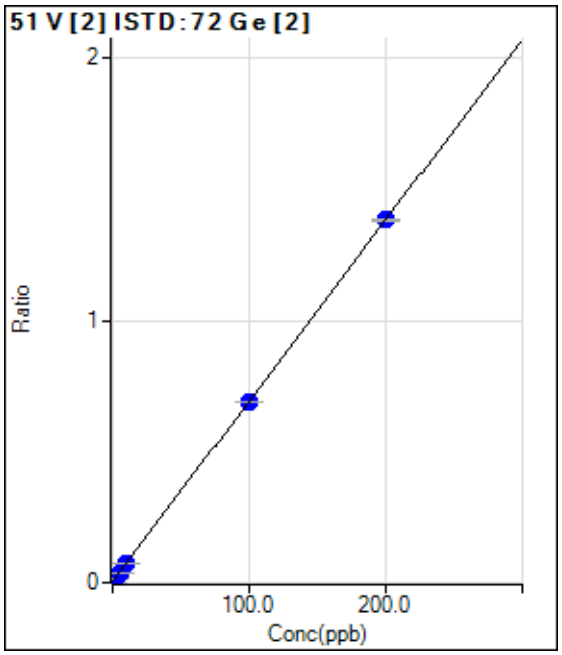
R = 0.9997

DL = 4.661

BEC = 34.61

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.132	952.29	0.0034	P	11.2
2	☐	2.000	1.890	4610.82	0.0173	P	4.3
3	☐	5.000	5.120	10943.98	0.0395	P	1.7
4	☐	10.000	10.445	19982.36	0.0762	P	2.0
5	☐	100.000	99.403	178426.21	0.6891	P	0.5
6	☐	200.000	200.274	353854.85	1.3839	P	0.5
7	☐	1.000					

y = 0.0069 * x + 0.0043

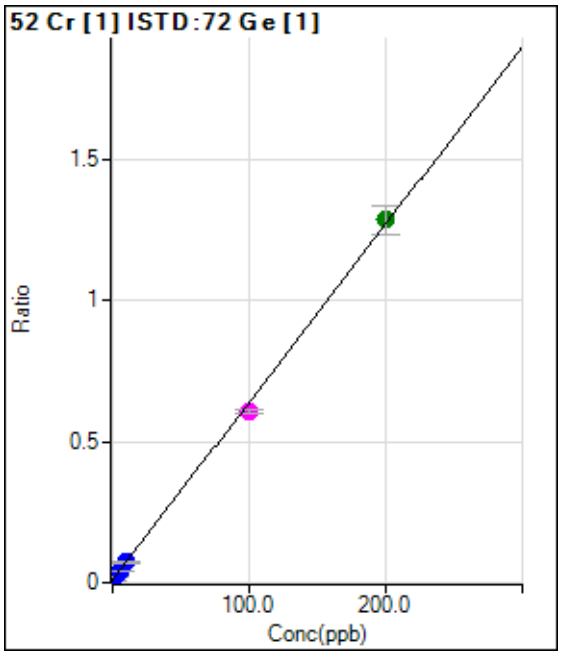
R = 1.0000

DL = 0.1642

BEC = 0.6212

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21479.73	0.0097	P	5.8
2	☐	2.000	1.917	46231.91	0.0218	P	1.6
3	☐	5.000	4.838	87543.98	0.0402	P	1.9
4	☐	10.000	9.839	150343.72	0.0717	P	2.7
5	☐	100.000	94.834	1248546.78	0.6071	M	1.4
6	☐	200.000	202.596	2423062.22	1.2859	A	8.3
7	☐	1.000					

y = 0.0063 * x + 0.0097

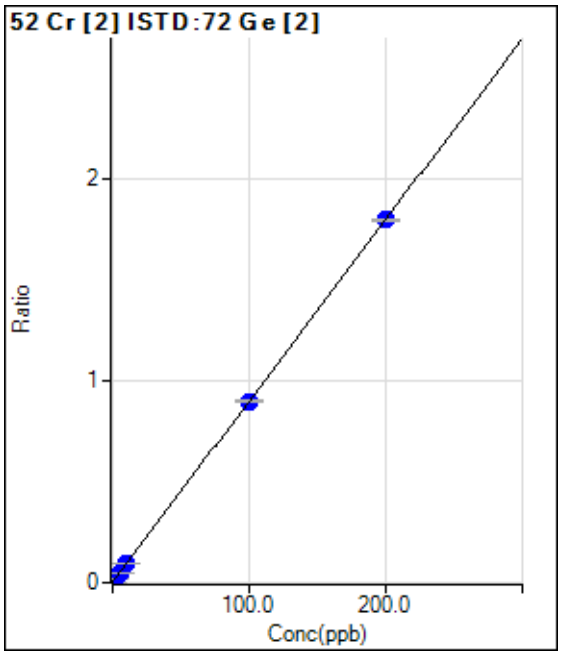
R = 0.9995

DL = 0.2687

BEC = 1.539

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	565.59	0.0020	P	9.4
2	☐	2.000	2.043	5425.53	0.0204	P	0.6
3	☐	5.000	5.186	13443.50	0.0486	P	1.6
4	☐	10.000	10.767	25873.62	0.0987	P	1.6
5	☐	100.000	99.915	232918.48	0.8995	P	0.7
6	☐	200.000	199.999	459857.89	1.7985	P	0.4
7	☐	1.000					

y = 0.0090 * x + 0.0020

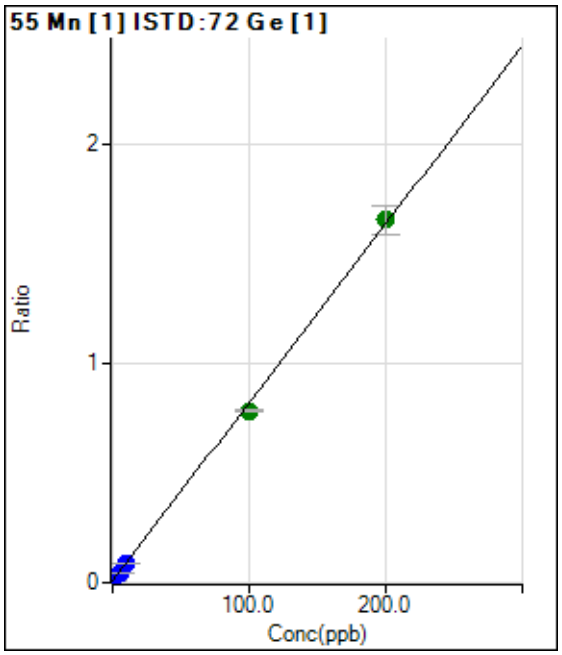
R = 1.0000

DL = 0.06285

BEC = 0.2226

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17808.85	0.0080	P	9.5
2	☐	2.000	1.949	50691.22	0.0239	P	2.4
3	☐	5.000	4.867	103633.66	0.0475	P	1.4
4	☐	10.000	9.827	184237.12	0.0878	P	1.0
5	☐	100.000	95.195	1606016.82	0.7809	A	1.2
6	☐	200.000	202.415	3112482.00	1.6514	A	7.8
7	☐	1.000					

y = 0.0081 * x + 0.0080

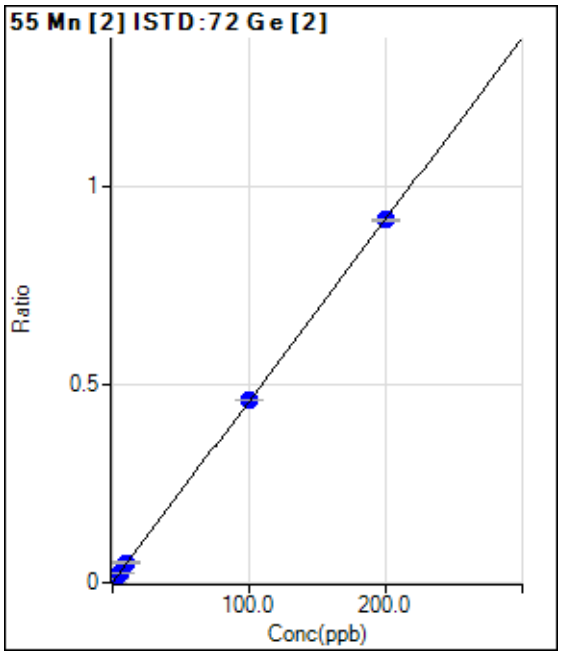
R = 0.9996

DL = 0.2822

BEC = 0.9898

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	157.79	0.0006	P	20.9
2	☐	2.000	2.150	2779.24	0.0104	P	6.0
3	☐	5.000	5.265	6841.66	0.0247	P	1.9
4	☐	10.000	10.904	13264.58	0.0506	P	2.5
5	☐	100.000	100.459	119544.67	0.4617	P	0.8
6	☐	200.000	199.717	234530.53	0.9173	P	0.6
7	☐	1.000					

y = 0.0046 * x + 5.5797E-004

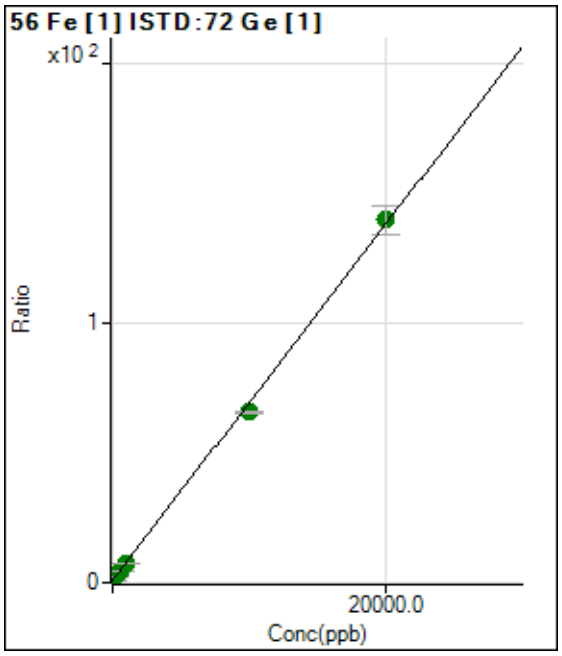
R = 1.0000

DL = 0.0762

BEC = 0.1216

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1962215.73	0.8859	A	3.0
2	☐	200.000	197.353	4757307.85	2.2405	A	2.2
3	☐	500.000	491.533	9282484.03	4.2598	A	2.3
4	☐	1000.000	990.762	16124367.12	7.6865	A	2.0
5	☐	10000.00	9469.967	135504199.0	65.8879	A	1.5
6	☐	20000.00	20265.71	263828011.6	139.990	A	8.0
7	☐	100.000					

y = 0.0069 * x + 0.8859

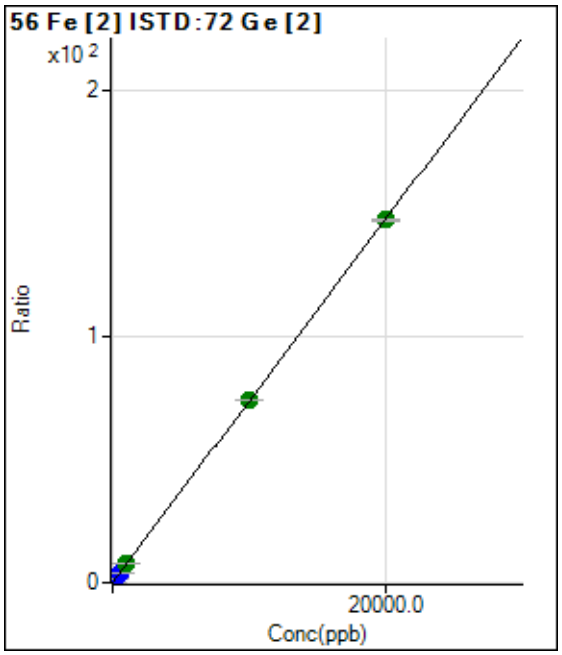
R = 0.9995

DL = 11.7

BEC = 129.1

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8167.88	0.0289	P	2.7
2	☐	200.000	207.102	415795.70	1.5597	P	0.4
3	☐	500.000	517.800	1067114.13	3.8563	P	1.0
4	☐	1000.000	1082.395	2104617.70	8.0297	A	0.2
5	☐	10000.00	10059.23	19261268.32	74.3844	A	0.3
6	☐	20000.00	19965.74	37742152.49	147.611	A	0.3
7	☐	100.000					

y = 0.0074 * x + 0.0289

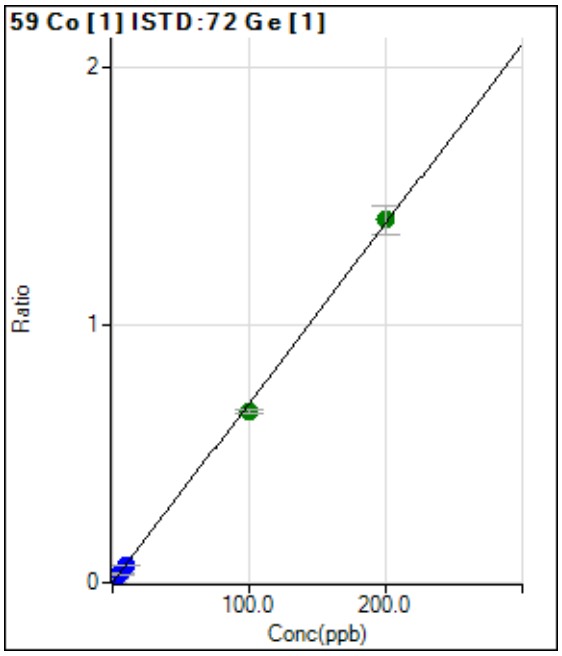
R = 1.0000

DL = 0.3184

BEC = 3.907

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	388.91	0.0002	P	13.3
2	☐	2.000	1.957	29261.50	0.0138	P	3.7
3	☐	5.000	4.815	73346.16	0.0337	P	3.0
4	☐	10.000	9.775	142953.99	0.0682	P	3.2
5	☐	100.000	95.679	1368770.24	0.6656	A	2.6
6	☐	200.000	202.177	2650240.95	1.4063	A	8.1
7	☐	1.000					

y = 0.0070 * x + 1.7548E-004

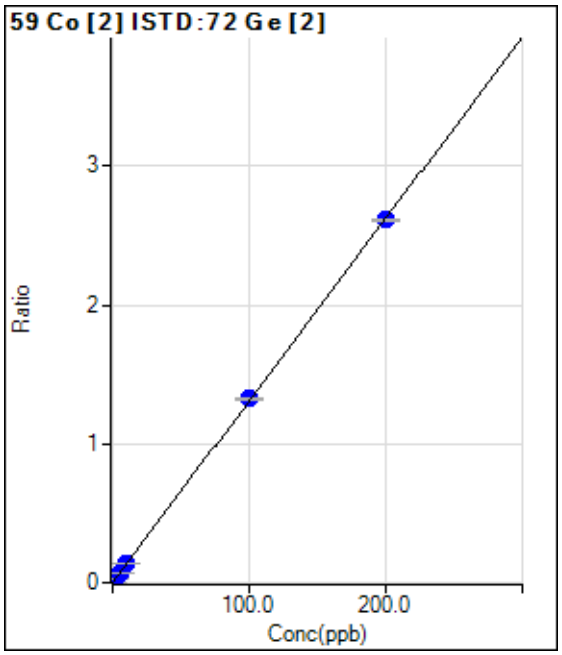
R = 0.9997

DL = 0.01004

BEC = 0.02523

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	61.11	0.0002	P	15.8
2	☐	2.000	2.105	7408.61	0.0278	P	3.8
3	☐	5.000	5.256	19112.49	0.0691	P	0.3
4	☐	10.000	10.780	37072.08	0.1414	P	1.1
5	☐	100.000	101.025	342763.28	1.3237	P	0.2
6	☐	200.000	199.441	668100.98	2.6130	P	0.7
7	☐	1.000					

y = 0.0131 * x + 2.1611E-004

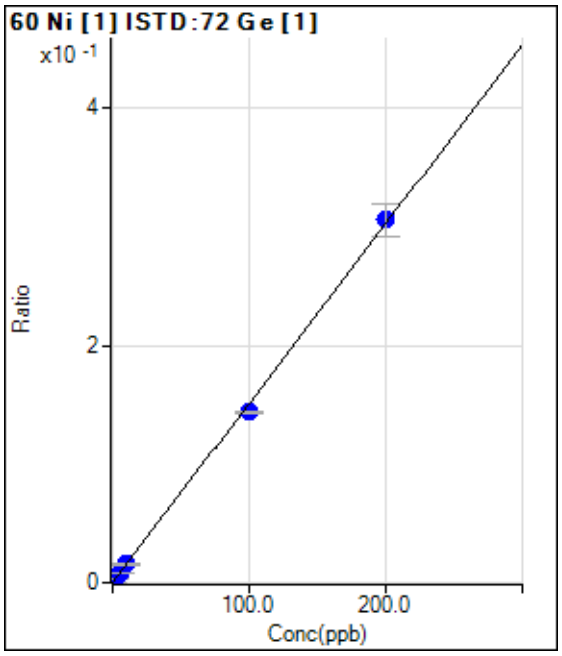
R = 1.0000

DL = 0.007823

BEC = 0.0165

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	260.02	0.0001	P	34.0
2	☐	2.000	1.982	6611.56	0.0031	P	4.7
3	☐	5.000	5.101	17062.47	0.0078	P	3.6
4	☐	10.000	10.248	32751.17	0.0156	P	3.0
5	☐	100.000	95.241	296441.83	0.1441	P	1.2
6	☐	200.000	202.365	576719.78	0.3061	P	8.7
7	☐	1.000					

y = 0.0015 * x + 1.1729E-004

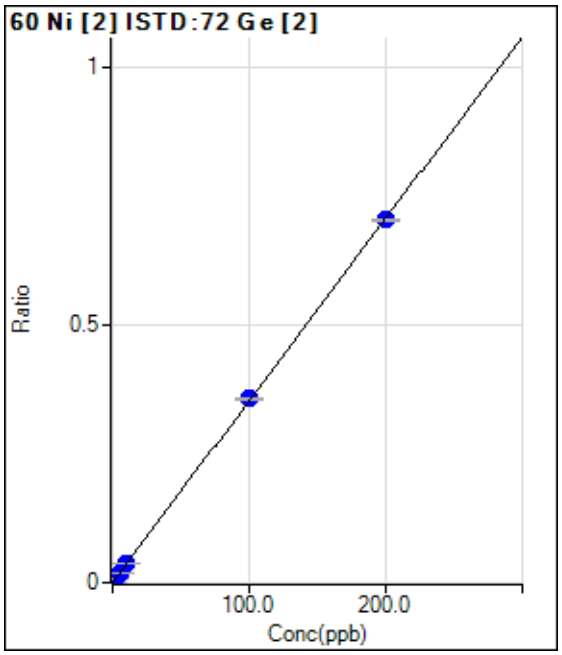
R = 0.9996

DL = 0.0791

BEC = 0.07756

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	55.56	0.0002	P	40.8
2	☐	2.000	2.176	2098.01	0.0079	P	1.1
3	☐	5.000	5.345	5271.07	0.0190	P	1.9
4	☐	10.000	10.680	9923.31	0.0379	P	3.3
5	☐	100.000	101.128	92401.87	0.3568	P	1.0
6	☐	200.000	199.391	179848.09	0.7034	P	0.6
7	☐	1.000					

y = 0.0035 * x + 1.9647E-004

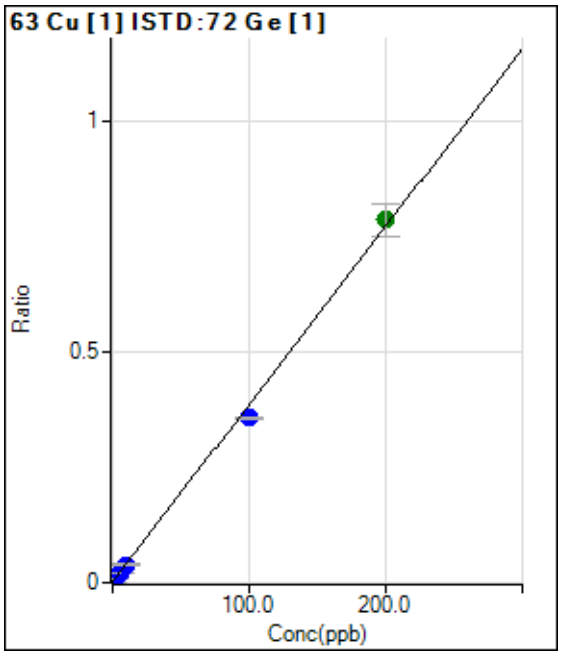
R = 1.0000

DL = 0.06826

BEC = 0.05571

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3456.06	0.0016	P	7.1
2	☐	2.000	1.894	18772.15	0.0088	P	2.3
3	☐	5.000	4.882	44285.16	0.0203	P	4.1
4	☐	10.000	9.697	81455.31	0.0388	P	3.8
5	☐	100.000	92.379	733612.65	0.3567	P	1.6
6	☐	200.000	203.829	1479240.01	0.7852	A	8.7
7	☐	1.000					

y = 0.0038 * x + 0.0016

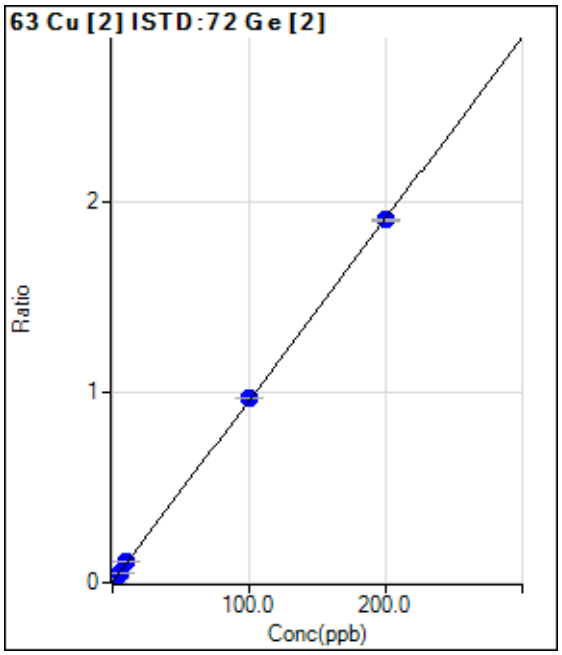
R = 0.9990

DL = 0.08636

BEC = 0.4058

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	930.07	0.0033	P	3.8
2	☐	2.000	2.131	6302.58	0.0236	P	3.5
3	☐	5.000	5.160	14550.11	0.0526	P	3.4
4	☐	10.000	10.858	28047.32	0.1070	P	1.0
5	☐	100.000	101.193	251161.50	0.9700	P	0.6
6	☐	200.000	199.355	487770.66	1.9077	P	0.2
7	☐	1.000					

y = 0.0096 * x + 0.0033

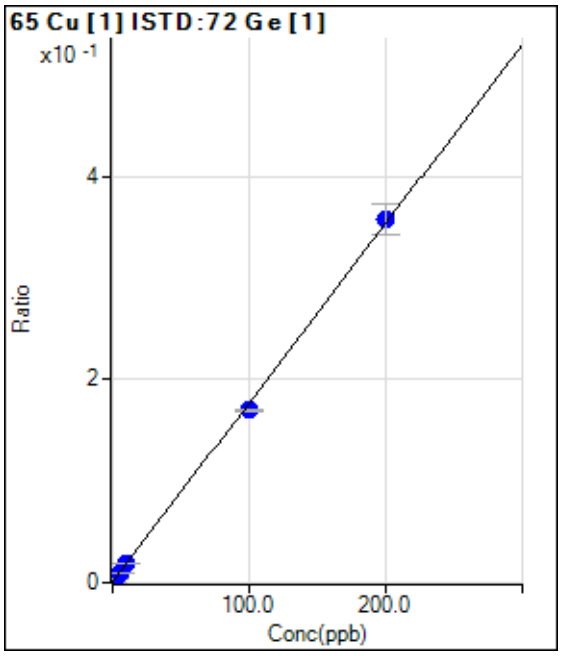
R = 1.0000

DL = 0.03898

BEC = 0.3443

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1746.84	0.0008	P	3.2
2	☐	2.000	1.953	8995.00	0.0042	P	1.7
3	☐	5.000	4.992	20913.56	0.0096	P	3.3
4	☐	10.000	10.133	39161.62	0.0187	P	2.7
5	☐	100.000	95.680	348881.54	0.1696	P	1.5
6	☐	200.000	202.154	673717.70	0.3575	P	8.3
7	☐	1.000					

y = 0.0018 * x + 7.8842E-004

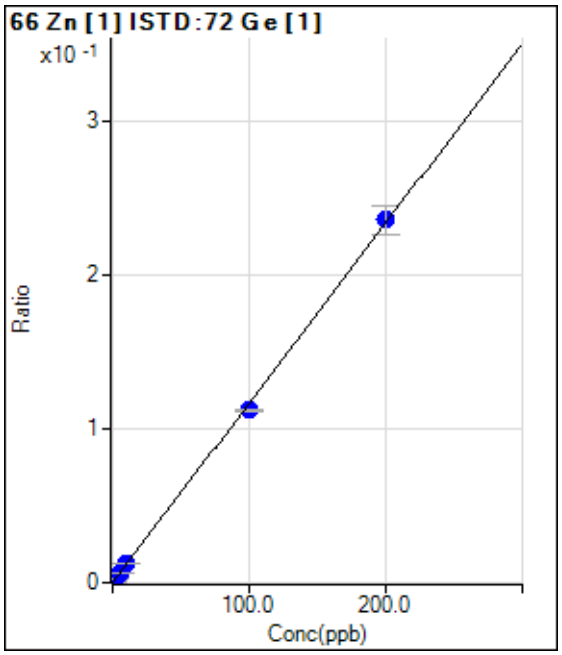
R = 0.9997

DL = 0.04344

BEC = 0.4468

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.548	1349.00	0.0006	P	13.0
2	☐	2.000	2.495	6124.68	0.0029	P	2.4
3	☐	5.000	5.537	14039.68	0.0064	P	1.3
4	☐	10.000	10.470	25612.26	0.0122	P	2.0
5	☐	100.000	95.985	230747.76	0.1122	P	1.5
6	☐	200.000	201.965	444941.96	0.2361	P	8.2
7	☐	1.000					

y = 0.0012 * x - 3.2424E-005

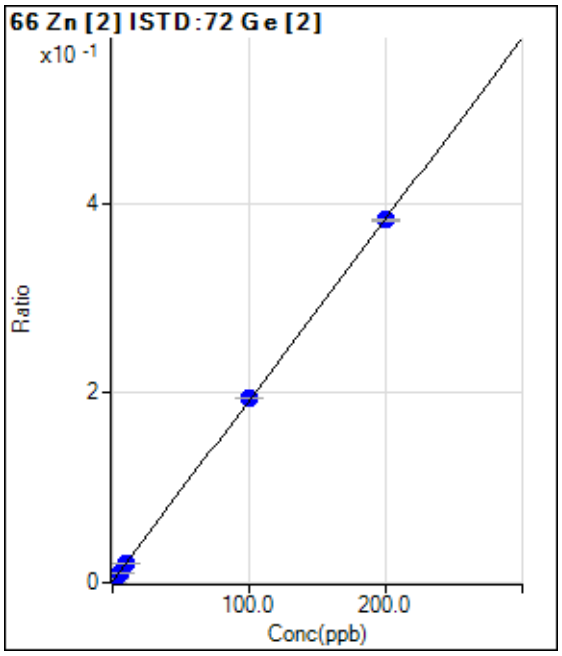
R = 0.9997

DL = 0.2026

BEC = -0.02773

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.353	195.57	0.0007	P	11.2
2	☐	2.000	1.850	1306.78	0.0049	P	2.4
3	☐	5.000	4.941	2991.51	0.0108	P	5.2
4	☐	10.000	10.176	5456.68	0.0208	P	4.5
5	☐	100.000	100.785	50247.17	0.1940	P	0.1
6	☐	200.000	199.602	97918.95	0.3830	P	0.5
7	☐	1.000					

y = 0.0019 * x + 0.0014

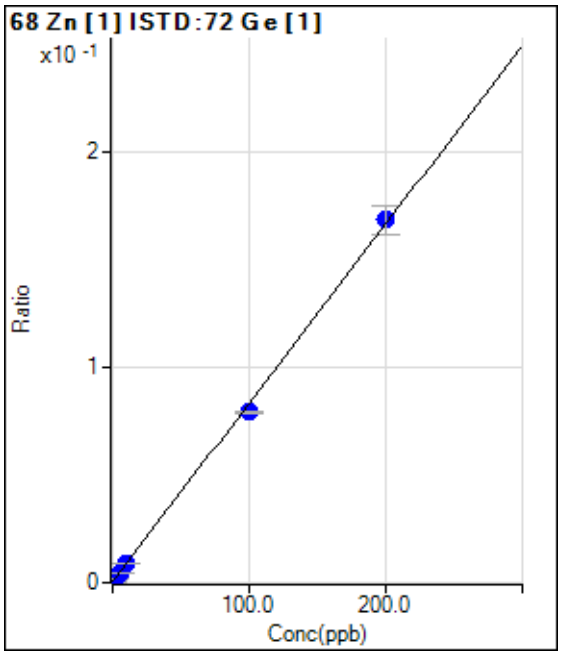
R = 1.0000

DL = 0.122

BEC = 0.7145

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1025.64	0.0005	P	17.0
2	☐	2.000	1.978	4474.13	0.0021	P	1.6
3	☐	5.000	5.077	10205.72	0.0047	P	3.6
4	☐	10.000	10.049	18490.75	0.0088	P	3.1
5	☐	100.000	94.983	163328.72	0.0794	P	1.3
6	☐	200.000	202.504	318094.79	0.1688	P	8.1
7	☐	1.000					

y = 8.3124E-004 * x + 4.6281E-004

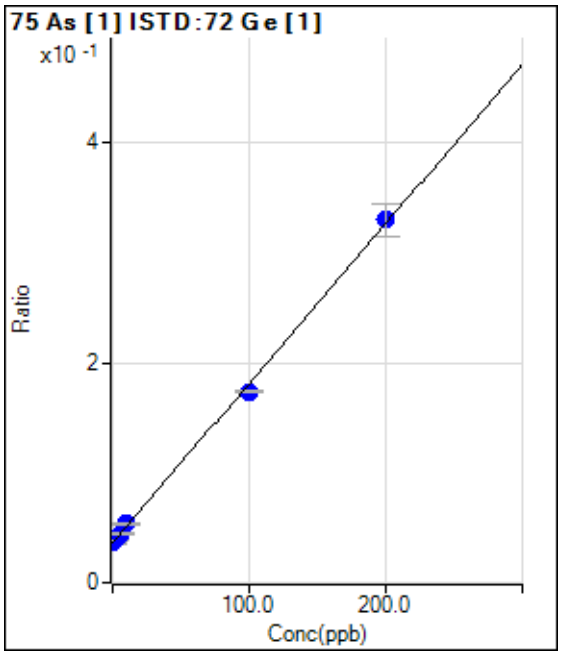
R = 0.9996

DL = 0.2848

BEC = 0.5568

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	80204.25	0.0362	P	6.2
2	☐	2.000	1.862	82681.43	0.0389	P	3.4
3	☐	5.000	5.525	96393.85	0.0442	P	2.1
4	☐	10.000	12.207	113110.07	0.0539	P	2.3
5	☐	100.000	94.758	356872.10	0.1735	P	1.3
6	☐	200.000	202.499	620883.08	0.3296	P	9.0
7	☐	1.000					

y = 0.0014 * x + 0.0362

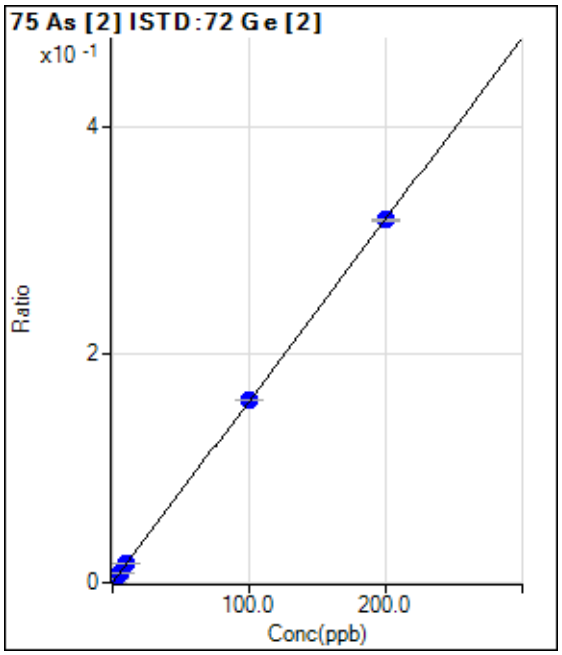
R = 0.9994

DL = 4.62

BEC = 24.98

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37.41	0.0001	P	24.9
2	☐	2.000	2.061	910.41	0.0034	P	1.9
3	☐	5.000	5.333	2386.87	0.0086	P	3.4
4	☐	10.000	10.679	4492.14	0.0171	P	2.3
5	☐	100.000	100.511	41482.37	0.1602	P	0.6
6	☐	200.000	199.702	81350.62	0.3182	P	0.6
7	☐	1.000					

y = 0.0016 * x + 1.3230E-004

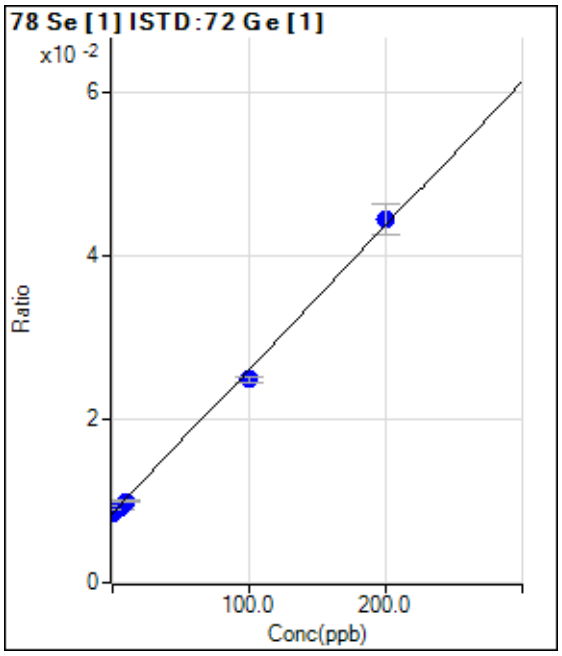
R = 1.0000

DL = 0.06195

BEC = 0.08308

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18834.31	0.0085	P	1.8
2	☐	2.000	1.531	18625.94	0.0088	P	3.2
3	☐	5.000	4.122	20107.62	0.0092	P	4.2
4	☐	10.000	8.359	20926.39	0.0100	P	2.6
5	☐	100.000	92.738	51078.34	0.0248	P	2.3
6	☐	200.000	203.740	83641.92	0.0444	P	8.4
7	☐	1.000					

y = 1.7613E-004 * x + 0.0085

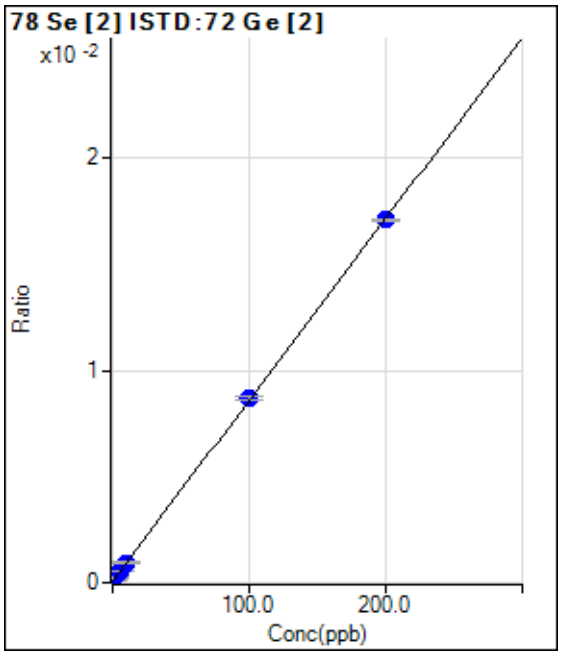
R = 0.9991

DL = 2.628

BEC = 48.28

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17.41	0.0001	P	32.1
2	☐	2.000	2.046	62.96	0.0002	P	19.9
3	☐	5.000	5.617	149.63	0.0005	P	7.1
4	☐	10.000	10.092	241.86	0.0009	P	10.0
5	☐	100.000	100.967	2246.85	0.0087	P	2.3
6	☐	200.000	199.496	4368.04	0.0171	P	0.9
7	☐	1.000					

y = 8.5327E-005 * x + 6.1538E-005

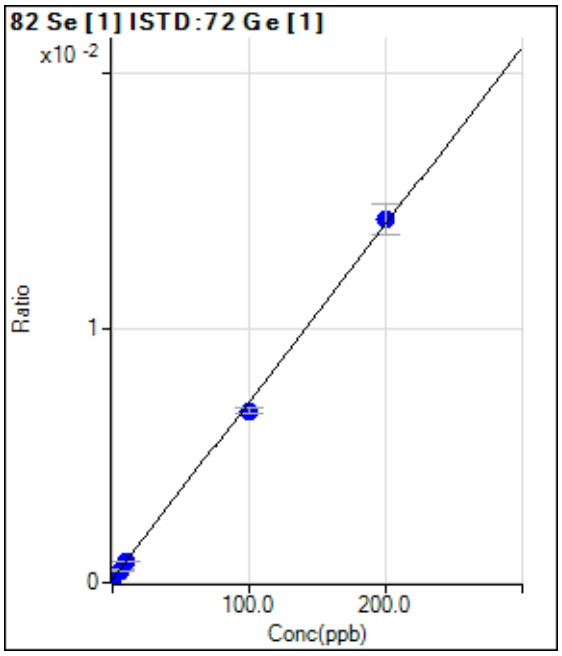
R = 1.0000

DL = 0.6935

BEC = 0.7212

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	318.52	0.0001	P	8.7
2	☐	2.000	2.105	615.95	0.0003	P	5.6
3	☐	5.000	4.863	1050.42	0.0005	P	6.4
4	☐	10.000	9.635	1708.26	0.0008	P	4.2
5	☐	100.000	94.875	13878.44	0.0067	P	3.4
6	☐	200.000	202.583	26845.90	0.0142	P	8.5
7	☐	1.000					

y = 6.9625E-005 * x + 1.4371E-004

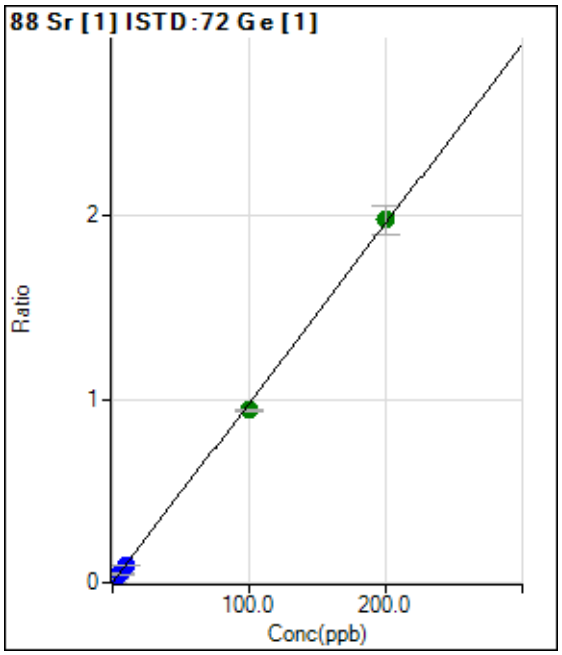
R = 0.9995

DL = 0.5389

BEC = 2.064

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1765.75	0.0008	P	48.7
2	☐	2.000	1.942	42043.82	0.0198	P	1.3
3	☐	5.000	4.765	103316.85	0.0474	P	2.3
4	☐	10.000	9.651	199742.75	0.0952	P	1.8
5	☐	100.000	95.854	1930226.95	0.9385	A	1.1
6	☐	200.000	202.097	3727869.15	1.9779	A	7.9
7	☐	1.000					

y = 0.0098 * x + 7.9566E-004

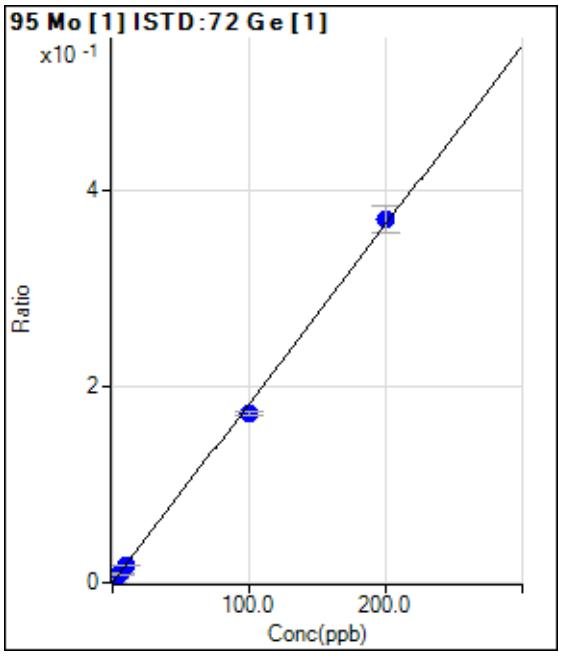
R = 0.9997

DL = 0.1188

BEC = 0.08133

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	406.69	0.0002	P	22.3
2	☐	2.000	1.867	7635.44	0.0036	P	4.0
3	☐	5.000	4.799	19511.01	0.0090	P	4.8
4	☐	10.000	9.587	37156.92	0.0177	P	1.3
5	☐	100.000	94.635	356182.31	0.1732	P	2.3
6	☐	200.000	202.710	699008.50	0.3708	P	7.5
7	☐	1.000					

y = 0.0018 * x + 1.8337E-004

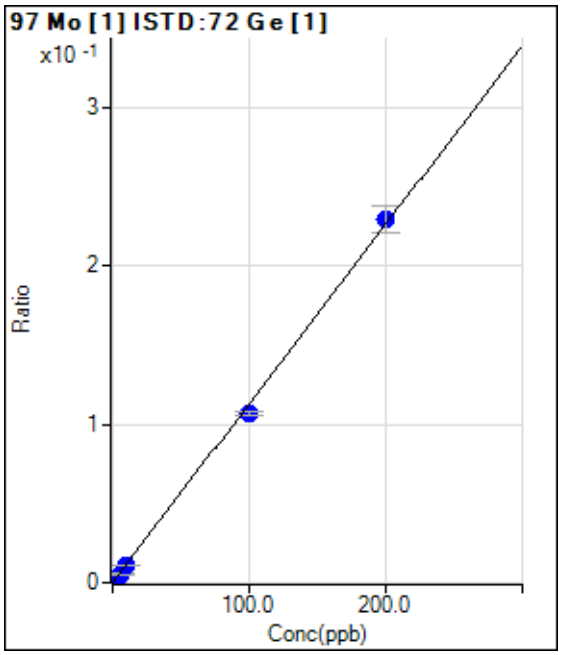
R = 0.9995

DL = 0.06718

BEC = 0.1003

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	260.02	0.0001	P	7.9
2	☐	2.000	1.905	4825.37	0.0023	P	2.3
3	☐	5.000	4.664	11743.54	0.0054	P	4.4
4	☐	10.000	9.767	23410.53	0.0112	P	2.6
5	☐	100.000	94.594	220201.50	0.1071	P	1.9
6	☐	200.000	202.724	432392.65	0.2293	P	7.3
7	☐	1.000					

y = 0.0011 * x + 1.1739E-004

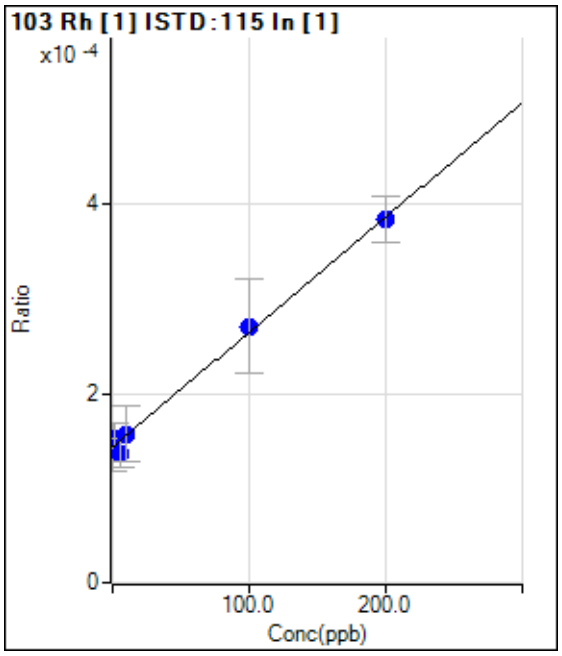
R = 0.9995

DL = 0.0246

BEC = 0.1038

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	330.02	0.0001	P	35.1
2	☐	2.000	7.130	335.58	0.0002	P	21.7
3	☐	5.000	-5.611	310.02	0.0001	P	22.9
4	☐	10.000	10.891	340.02	0.0002	P	37.5
5	☐	100.000	104.919	572.26	0.0003	P	36.7
6	☐	200.000	197.710	756.72	0.0004	P	12.8
7	☐	1.000					

y = 1.2140E-006 * x + 1.4369E-004

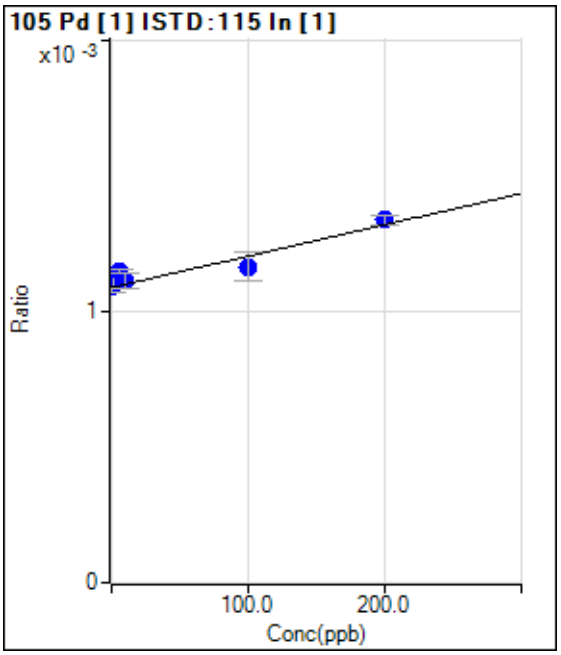
R = 0.9975

DL = 124.5

BEC = 118.4

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2503.65	0.0011	P	2.7
2	☐	2.000	25.069	2466.97	0.0011	P	5.5
3	☐	5.000	50.723	2608.12	0.0011	P	1.4
4	☐	10.000	22.038	2434.74	0.0011	P	4.8
5	☐	100.000	65.670	2475.86	0.0012	P	8.8
6	☐	200.000	215.190	2624.78	0.0013	P	2.9
7	☐	1.000					

y = 1.1582E-006 * x + 0.0011

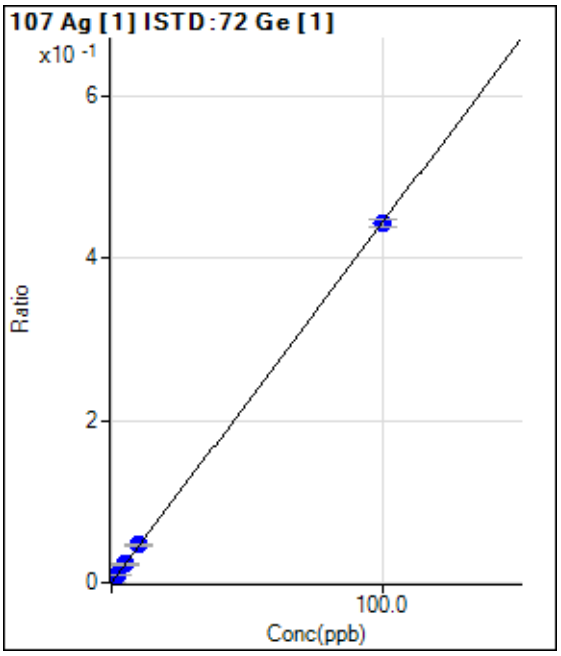
R = 0.9455

DL = 77.15

BEC = 941

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	125.56	0.0001	P	32.2
2	☐	2.000	2.043	19355.31	0.0091	P	4.7
3	☐	5.000	5.157	49966.32	0.0229	P	4.0
4	☐	10.000	10.423	97124.67	0.0463	P	2.0
5	☐	100.000	99.949	912078.94	0.4435	P	2.0
6	☐			1845282.21	0.9790	A	7.7
7	☐	1.000					

y = 0.0044 * x + 5.6687E-005

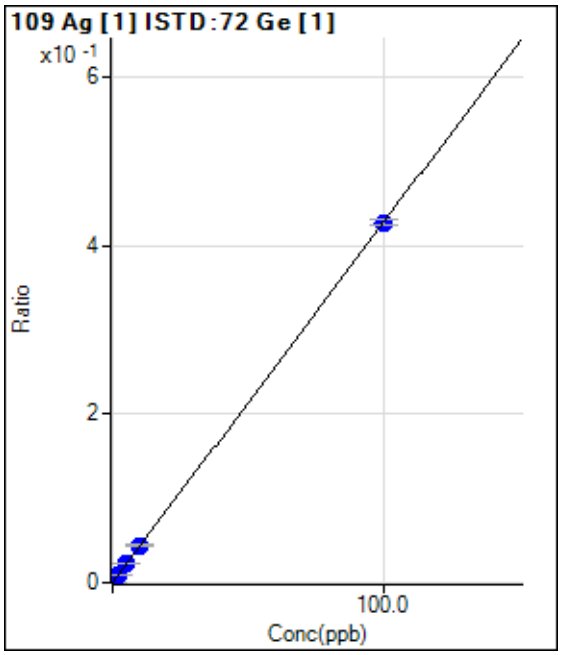
R = 1.0000

DL = 0.01235

BEC = 0.01278

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	138.90	0.0001	P	10.5
2	☐	2.000	2.046	18725.86	0.0088	P	2.4
3	☐	5.000	5.193	48553.63	0.0223	P	3.6
4	☐	10.000	10.397	93465.10	0.0446	P	2.0
5	☐	100.000	99.950	879731.57	0.4278	P	1.7
6	☐			1793334.61	0.9512	A	7.4
7	☐	1.000					

y = 0.0043 * x + 6.2746E-005

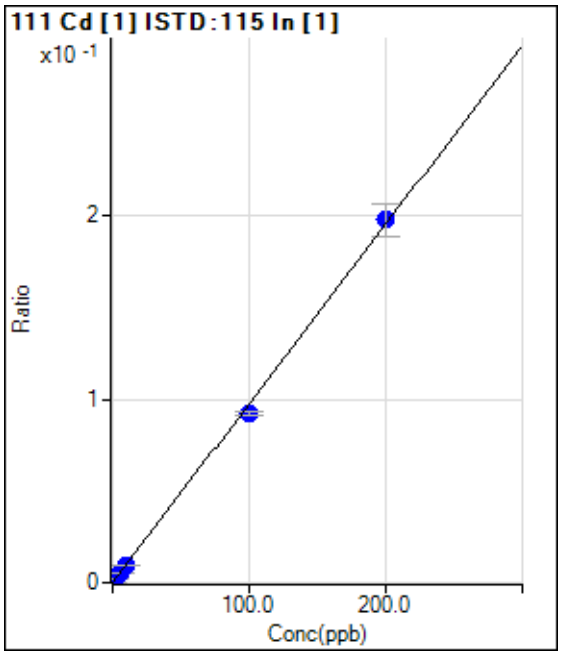
R = 1.0000

DL = 0.004633

BEC = 0.01466

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18.89	0.0000	P	129.
2	☐	2.000	1.896	4098.48	0.0019	P	6.0
3	☐	5.000	4.910	10907.39	0.0048	P	2.3
4	☐	10.000	9.809	20909.61	0.0096	P	2.0
5	☐	100.000	94.793	196394.92	0.0926	P	2.5
6	☐	200.000	202.616	385286.56	0.1979	P	9.1
7	☐	1.000					

y = 9.7685E-004 * x + 8.2411E-006

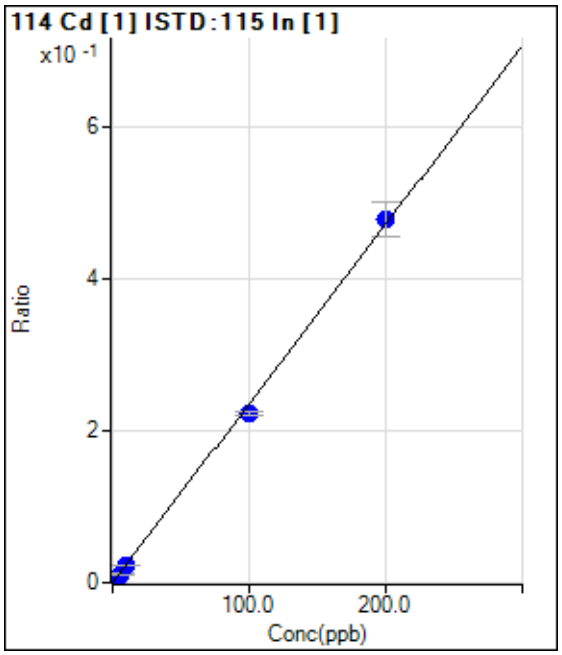
R = 0.9995

DL = 0.03289

BEC = 0.008436

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	50.00	0.0000	P	34.0
2	☐	2.000	1.945	10154.66	0.0046	P	0.6
3	☐	5.000	4.821	25854.48	0.0114	P	3.2
4	☐	10.000	9.894	50888.77	0.0234	P	4.3
5	☐	100.000	94.670	473485.19	0.2233	P	2.1
6	☐	200.000	202.676	930045.54	0.4779	P	9.6
7	☐	1.000					

y = 0.0024 * x + 2.1738E-005

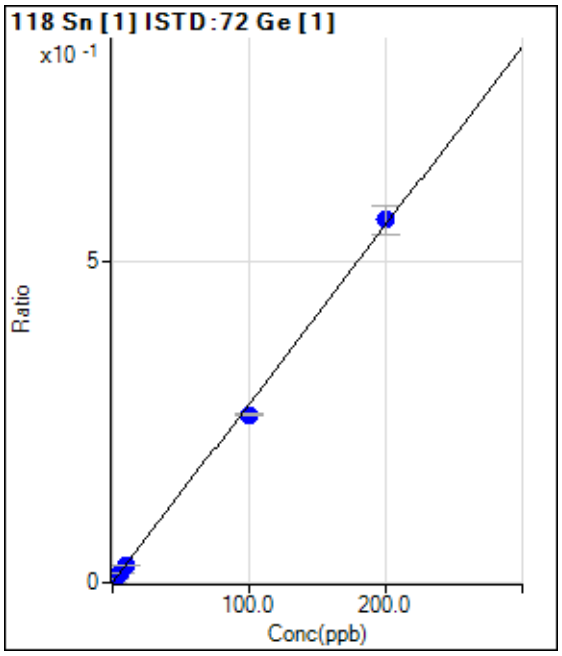
R = 0.9995

DL = 0.009394

BEC = 0.009219

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1101.20	0.0005	P	14.1
2	☐	2.000	1.861	12006.02	0.0057	P	8.4
3	☐	5.000	4.778	29971.77	0.0138	P	4.0
4	☐	10.000	9.659	57268.99	0.0273	P	3.9
5	☐	100.000	94.016	537713.91	0.2615	P	1.2
6	☐	200.000	203.016	1062800.61	0.5640	P	8.3
7	☐	1.000					

y = 0.0028 * x + 4.9660E-004

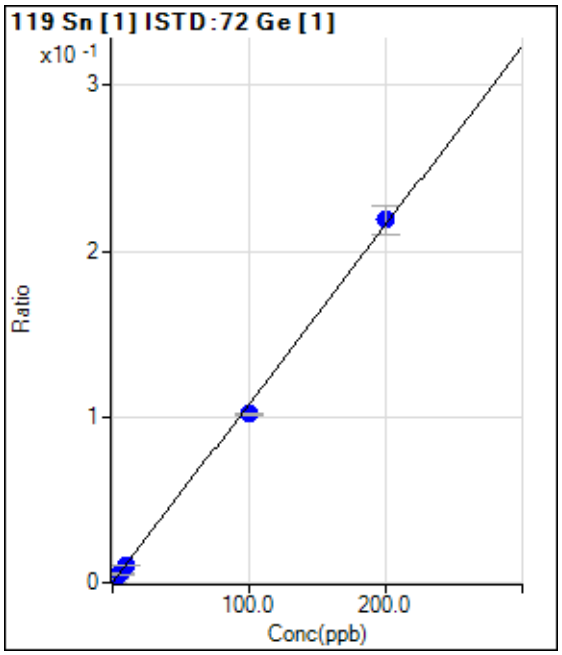
R = 0.9994

DL = 0.07594

BEC = 0.1789

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	347.80	0.0002	P	17.8
2	☐	2.000	1.830	4516.41	0.0021	P	7.0
3	☐	5.000	4.706	11396.71	0.0052	P	3.0
4	☐	10.000	9.759	22394.00	0.0107	P	3.6
5	☐	100.000	94.167	209059.35	0.1017	P	1.8
6	☐	200.000	202.938	412473.46	0.2189	P	8.3
7	☐	1.000					

y = 0.0011 * x + 1.5684E-004

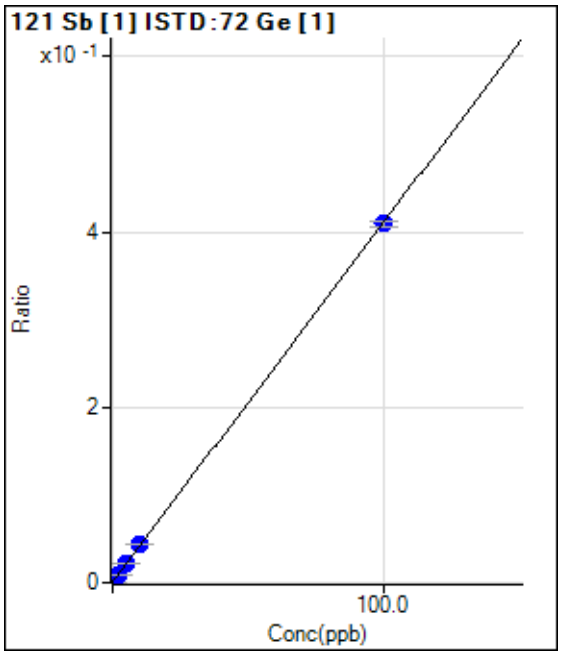
R = 0.9994

DL = 0.07771

BEC = 0.1455

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1274.89	0.0006	P	14.2
2	☐	2.000	2.066	19155.05	0.0090	P	2.7
3	☐	5.000	5.229	47840.24	0.0220	P	2.3
4	☐	10.000	10.548	91665.57	0.0437	P	3.0
5	☐	100.000	99.932	841460.60	0.4092	P	2.0
6	☐			1749171.82	0.9280	A	7.9
7	☐	1.000					

y = 0.0041 * x + 5.7520E-004

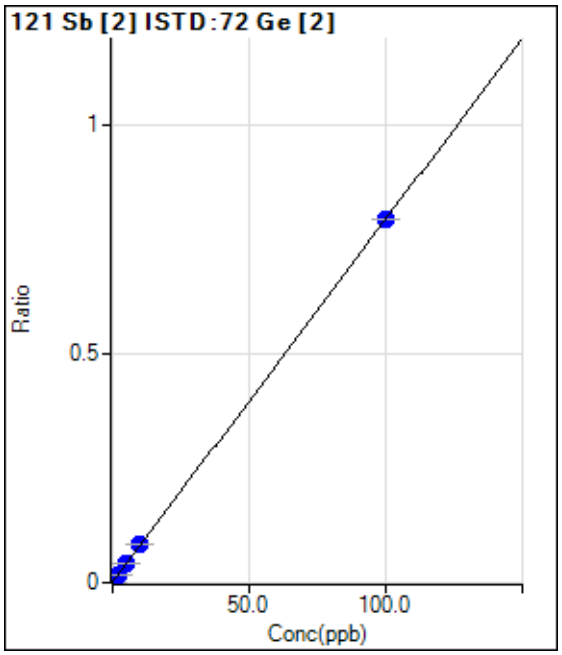
R = 1.0000

DL = 0.06001

BEC = 0.1407

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	284.08	0.0010	P	6.0
2	☐	2.000	2.021	4528.47	0.0170	P	2.4
3	☐	5.000	5.157	11562.36	0.0418	P	0.7
4	☐	10.000	10.546	22121.36	0.0844	P	1.5
5	☐	100.000	99.937	204888.07	0.7912	P	0.0
6	☐			410099.92	1.6039	P	0.6
7	☐	1.000					

y = 0.0079 * x + 0.0010

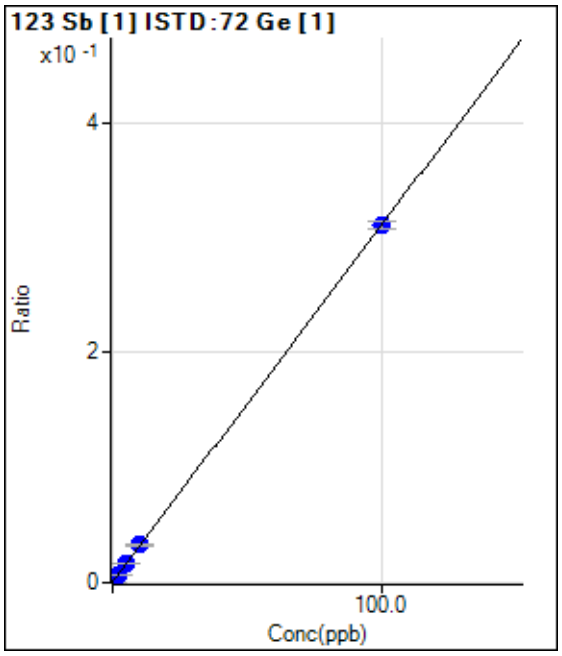
R = 1.0000

DL = 0.02269

BEC = 0.127

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	956.34	0.0004	P	12.6
2	☐	2.000	2.060	14517.68	0.0068	P	1.5
3	☐	5.000	5.236	36417.54	0.0167	P	2.1
4	☐	10.000	10.493	69341.18	0.0331	P	2.6
5	☐	100.000	99.938	639900.32	0.3112	P	2.3
6	☐			1290320.36	0.6848	P	8.4
7	☐	1.000					

y = 0.0031 * x + 4.3150E-004

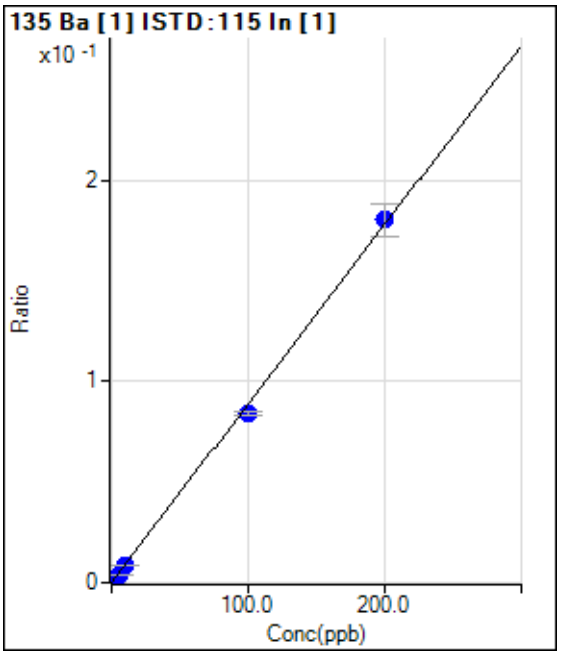
R = 1.0000

DL = 0.05229

BEC = 0.1388

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	214.46	0.0001	P	25.2
2	☐	2.000	1.887	3900.64	0.0018	P	4.6
3	☐	5.000	4.637	9565.45	0.0042	P	0.6
4	☐	10.000	9.811	19200.99	0.0088	P	2.6
5	☐	100.000	94.486	178185.17	0.0840	P	2.2
6	☐	200.000	202.777	350772.77	0.1802	P	9.1
7	☐	1.000					

y = 8.8821E-004 * x + 9.3350E-005

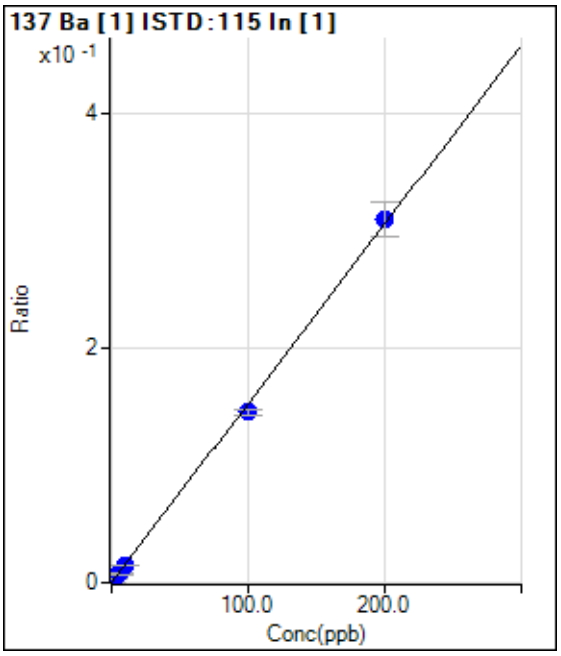
R = 0.9995

DL = 0.07961

BEC = 0.1051

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	381.14	0.0002	P	29.7
2	☐	2.000	1.970	7007.39	0.0032	P	2.8
3	☐	5.000	4.755	16889.58	0.0074	P	1.8
4	☐	10.000	9.698	32695.22	0.0150	P	2.9
5	☐	100.000	95.030	308587.00	0.1455	P	2.7
6	☐	200.000	202.506	603089.95	0.3099	P	9.5
7	☐	1.000					

y = 0.0015 * x + 1.6589E-004

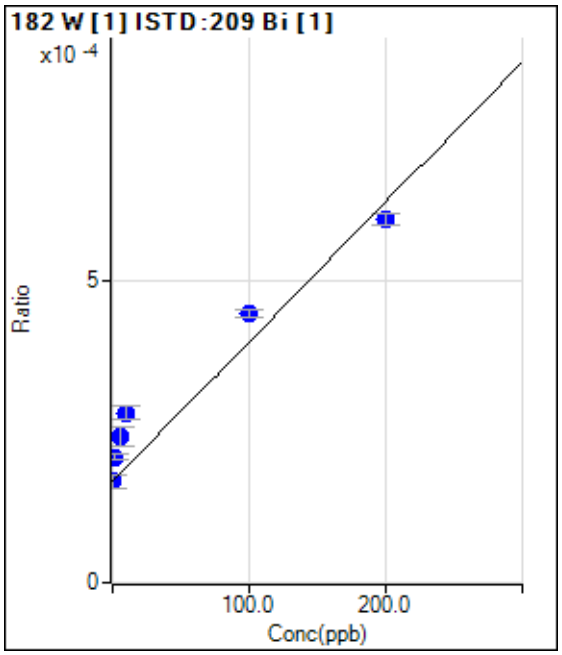
R = 0.9996

DL = 0.09655

BEC = 0.1085

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	372.25	0.0002	P	13.6
2	☐	2.000	17.619	443.36	0.0002	P	4.1
3	☐	5.000	32.551	526.70	0.0002	P	13.3
4	☐	10.000	48.959	586.70	0.0003	P	8.3
5	☐	100.000	120.393	912.29	0.0004	P	3.0
6	☐	200.000	187.011	1123.43	0.0006	P	3.1
7	☐	1.000					

y = 2.3158E-006 * x + 1.6768E-004

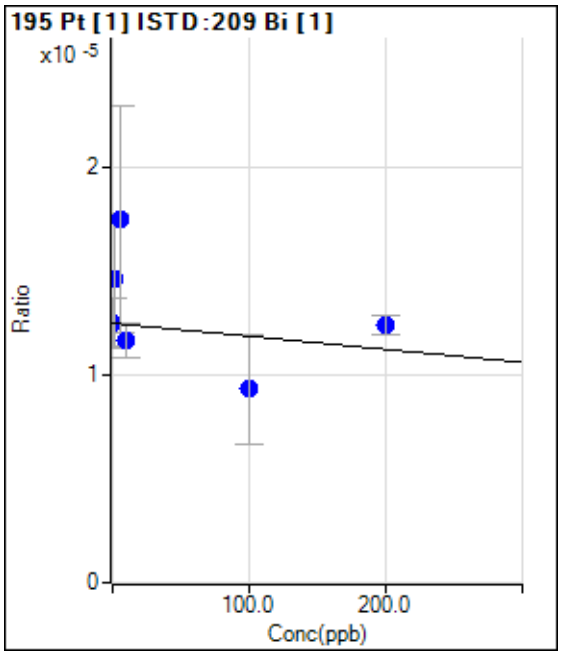
R = 0.9784

DL = 29.59

BEC = 72.41

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27.78	0.0000	P	18.8
2	☐	2.000	-335.756	31.12	0.0000	P	43.7
3	☐	5.000	-790.222	37.78	0.0000	P	62.4
4	☐	10.000	131.954	24.45	0.0000	P	14.6
5	☐	100.000	505.930	18.89	0.0000	P	56.0
6	☐	200.000	14.195	23.33	0.0000	P	7.3
7	☐	1.000					

y = -6.3070E-009 * x + 1.2520E-005

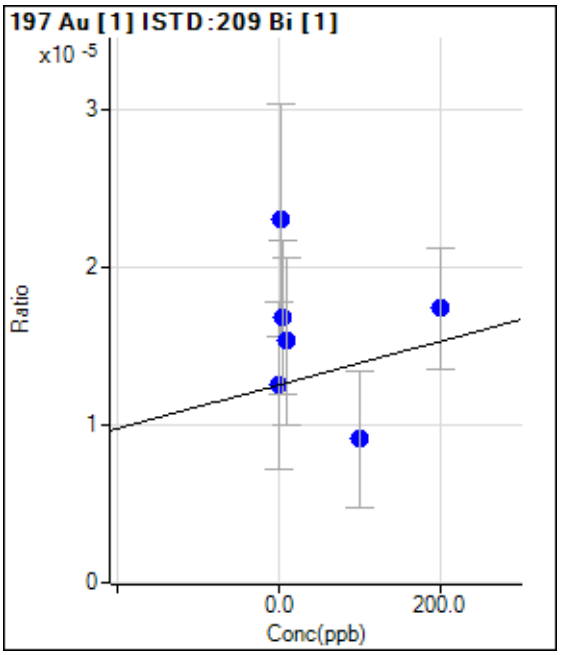
R = -0.4170

DL = -1122

BEC = -1985

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27.78	0.0000	P	84.5
2	☐	2.000	755.650	48.89	0.0000	P	64.2
3	☐	5.000	306.271	36.67	0.0000	P	58.1
4	☐	10.000	200.020	32.23	0.0000	P	68.7
5	☐	100.000	-248.095	18.89	0.0000	P	95.6
6	☐	200.000	349.478	33.34	0.0000	P	44.2
7	☐	1.000					

y = 1.3859E-008 * x + 1.2568E-005

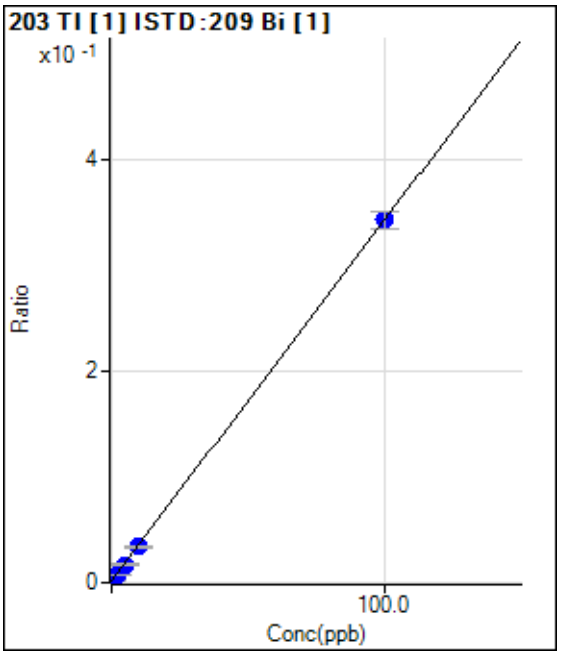
R = -0.1576

DL = 2299

BEC = 906.8

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4235.83	0.0019	P	11.9
2	☐	2.000	1.734	16591.31	0.0078	P	8.3
3	☐	5.000	4.486	37256.13	0.0172	P	6.2
4	☐	10.000	9.405	70823.53	0.0339	P	6.6
5	☐	100.000	100.091	699757.66	0.3427	P	4.9
6	☐			1365118.36	0.7322	P	7.2
7	☐	1.000					

y = 0.0034 * x + 0.0019

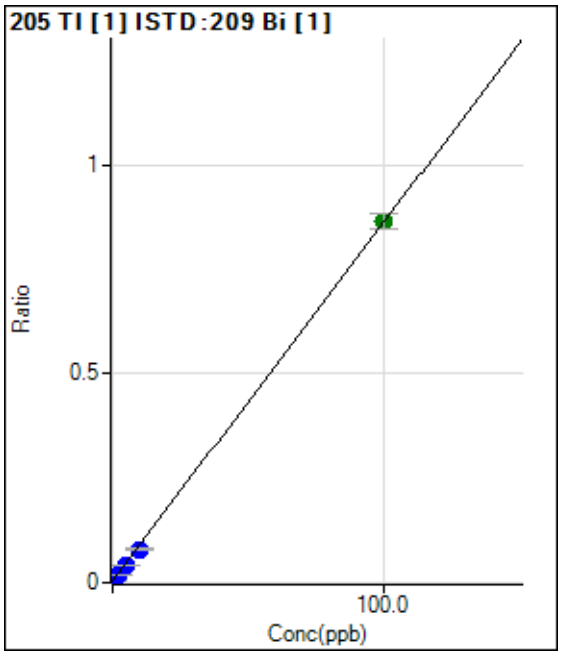
R = 1.0000

DL = 0.2009

BEC = 0.5608

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10120.89	0.0046	P	13.3
2	☐	2.000	1.621	39224.47	0.0185	P	7.8
3	☐	5.000	4.244	88849.62	0.0410	P	7.2
4	☐	10.000	8.822	167518.95	0.0803	P	6.4
5	☐	100.000	100.163	1764428.73	0.8640	A	4.3
6	☐			3425146.95	1.8371	A	7.3
7	☐	1.000					

y = 0.0086 * x + 0.0046

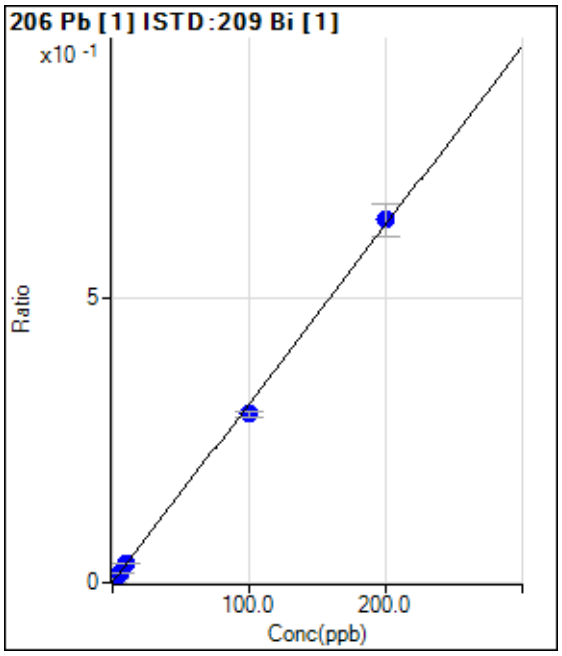
R = 0.9999

DL = 0.2121

BEC = 0.5317

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1457.94	0.0007	P	52.9
2	☐	2.000	1.963	14474.09	0.0068	P	4.0
3	☐	5.000	4.892	34693.56	0.0160	P	0.9
4	☐	10.000	10.135	67716.77	0.0324	P	2.2
5	☐	100.000	94.298	605130.10	0.2962	P	3.0
6	☐	200.000	202.847	1185524.34	0.6365	P	8.9
7	☐	1.000					

y = 0.0031 * x + 6.5477E-004

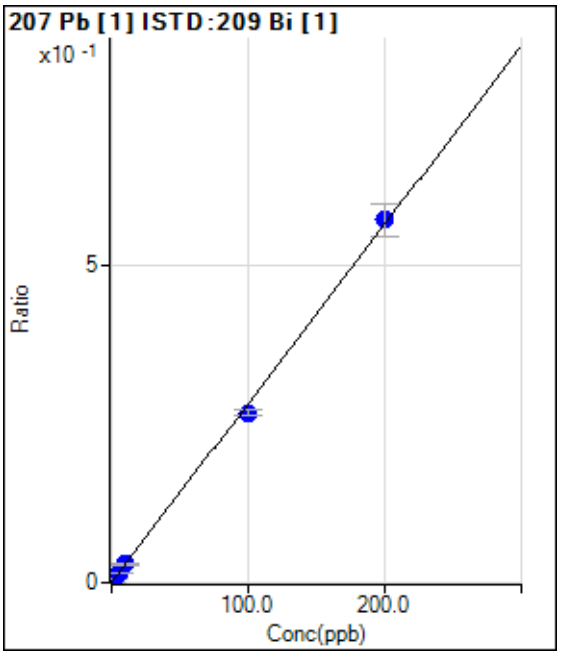
R = 0.9994

DL = 0.3317

BEC = 0.2089

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1212.35	0.0005	P	51.4
2	☐	2.000	1.946	12855.95	0.0060	P	5.4
3	☐	5.000	4.914	31318.46	0.0144	P	0.7
4	☐	10.000	10.031	60362.89	0.0289	P	0.3
5	☐	100.000	94.661	547609.24	0.2681	P	3.0
6	☐	200.000	202.670	1067924.59	0.5733	P	8.8
7	☐	1.000					

y = 0.0028 * x + 5.4451E-004

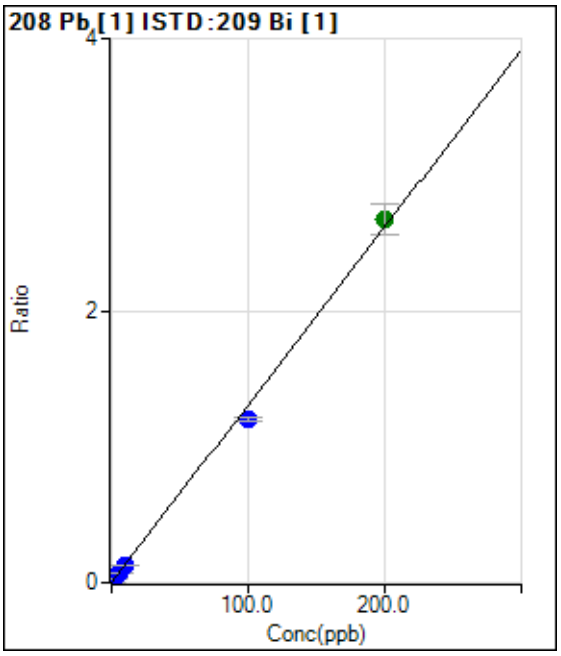
R = 0.9995

DL = 0.2973

BEC = 0.1927

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5641.92	0.0025	P	56.2
2	☐	2.000	1.902	58229.03	0.0274	P	4.3
3	☐	5.000	4.769	140641.14	0.0648	P	0.9
4	☐	10.000	9.786	272304.84	0.1304	P	1.6
5	☐	100.000	91.639	2450450.91	1.1995	P	2.9
6	☐	200.000	204.198	4974658.41	2.6698	A	8.3
7	☐	1.000					

y = 0.0131 * x + 0.0025

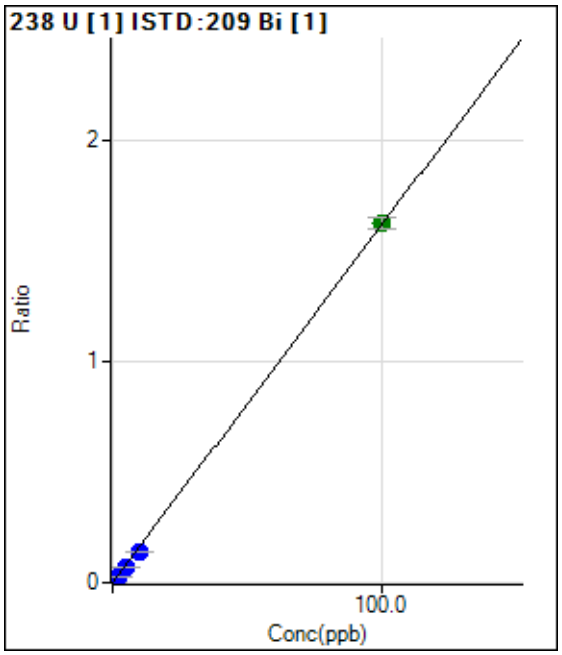
R = 0.9988

DL = 0.3271

BEC = 0.1939

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	185.57	0.0001	P	67.9
2	☐	2.000	1.647	56956.94	0.0268	P	2.2
3	☐	5.000	4.197	147858.97	0.0682	P	1.6
4	☐	10.000	8.518	288747.42	0.1383	P	2.3
5	☐	100.000	100.195	3320013.81	1.6253	A	3.2
6	☐			6486489.49	3.4818	A	8.7
7	☐	1.000					

y = 0.0162 * x + 8.3280E-005

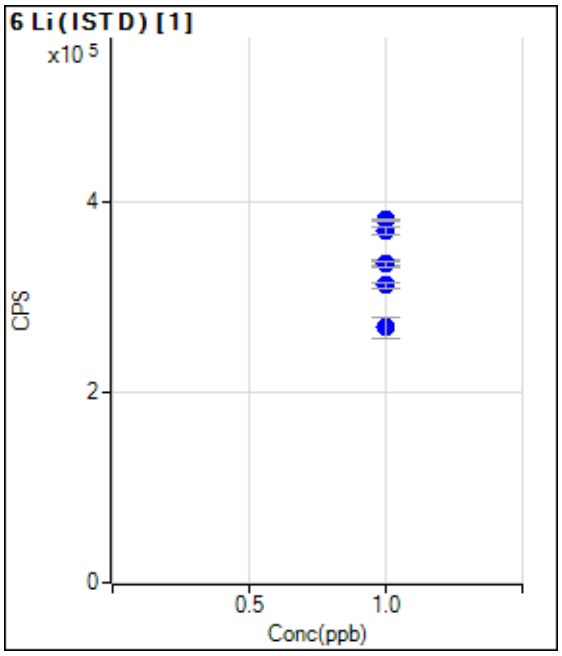
R = 0.9999

DL = 0.01046

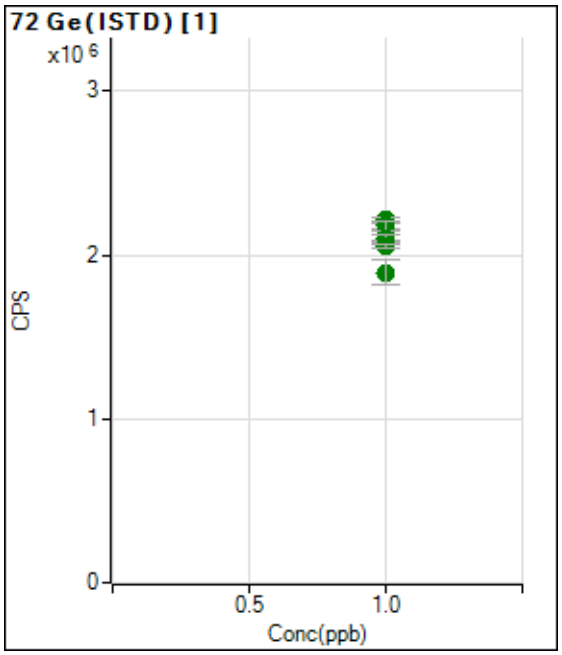
BEC = 0.005134

Weight: None

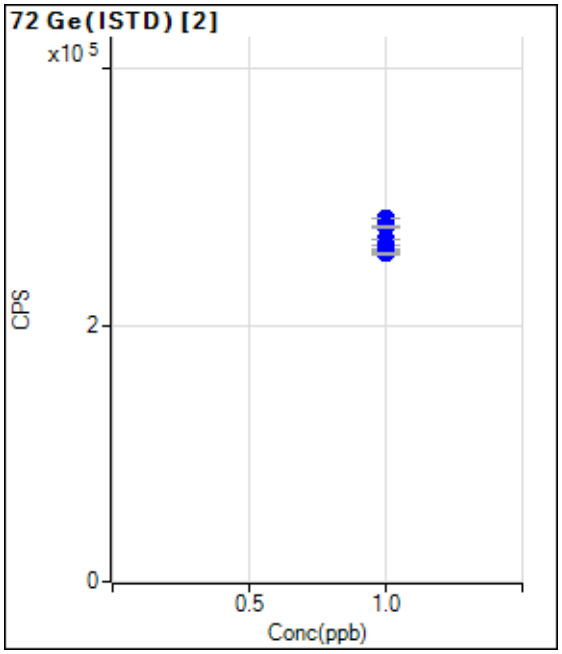
Min Conc: <None>



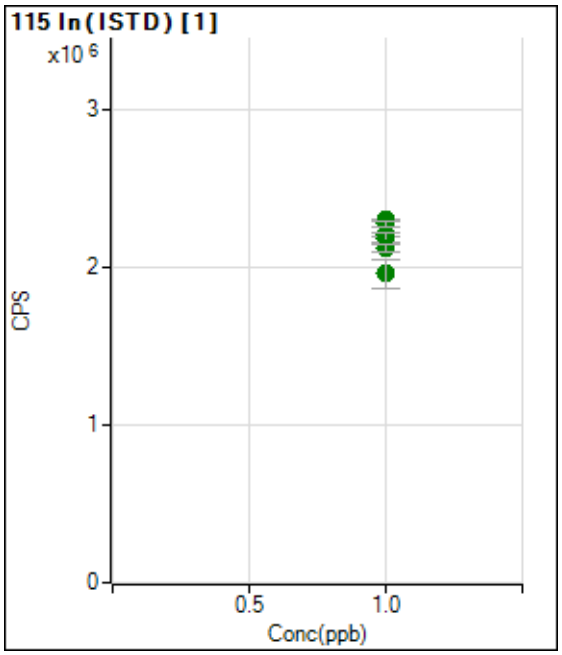
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		380768.39		P	0.7
2	☐	1.000		335736.70		P	1.6
3	☐	1.000		369904.65		P	2.1
4	☐	1.000		334290.29		P	1.9
5	☐	1.000		312163.99		P	1.9
6	☐	1.000		268045.91		P	8.5
7	☐	1.000					



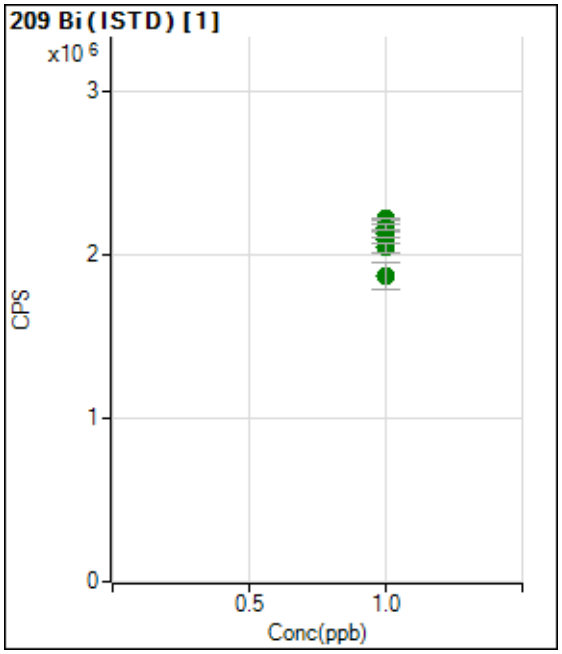
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2215060.84		A	1.3
2	☐	1.000		2124264.96		A	3.1
3	☐	1.000		2179897.83		A	2.4
4	☐	1.000		2098321.46		A	2.1
5	☐	1.000		2056849.62		A	1.3
6	☐	1.000		1892710.99		A	8.0
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		282811.17		P	0.1
2	☐	1.000		266580.72		P	0.3
3	☐	1.000		276725.72		P	0.5
4	☐	1.000		262104.36		P	0.1
5	☐	1.000		258942.99		P	0.3
6	☐	1.000		255688.10		P	0.5
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2296991.92		A	0.6
2	☐	1.000		2204032.48		A	1.2
3	☐	1.000		2270727.59		A	1.8
4	☐	1.000		2181005.16		A	2.7
5	☐	1.000		2121477.94		A	2.1
6	☐	1.000		1957386.73		A	9.1
7	☐	1.000					

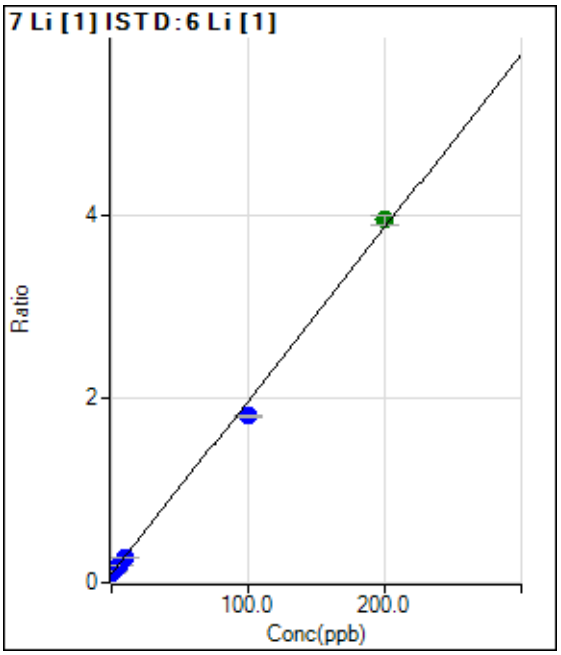


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2220153.43		A	0.8
2	☐	1.000		2125529.78		A	2.0
3	☐	1.000		2169902.39		A	1.7
4	☐	1.000		2089158.53		A	1.9
5	☐	1.000		2043943.44		A	2.8
6	☐	1.000		1872334.29		A	8.7
7	☐	1.000					

Calibration for 049SMPL.D

Batch Folder:	C:¥ICPMH¥1¥DATA¥17D25I00.B¥
Analysis File:	17D25I00.batch.xml
DA Date-Time:	4/25/2017 3:53:39 PM
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	
Tune Step:	#1 042517a5.u
	#2 042517he.u

Level	Standard Data File	Sample Name	Acq. Date-Time
1	043CALB.D	CAL BLK	4/25/2017 3:23:44 PM
2	044CALS.D	2/10/200	4/25/2017 3:28:18 PM
3	045CALS.D	5/25/500	4/25/2017 3:32:54 PM
4	046CALS.D	10/50/1000	4/25/2017 3:37:31 PM
5	047CALS.D	100/500/10K	4/25/2017 3:42:10 PM
6	048CALS.D	200/1000/20K	4/25/2017 3:46:35 PM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37068.59	0.0956	P	1.2
2	☐	2.000	1.864	48428.48	0.1307	P	0.6
3	☐	5.000	4.487	68410.26	0.1801	P	1.3
4	☐	10.000	9.170	101469.87	0.2684	P	1.0
5	☐	100.000	91.098	635140.91	1.8126	P	2.1
6	☐	200.000	204.506	1246868.66	3.9502	A	2.7
7	☐	1.000					

y = 0.0188 * x + 0.0956

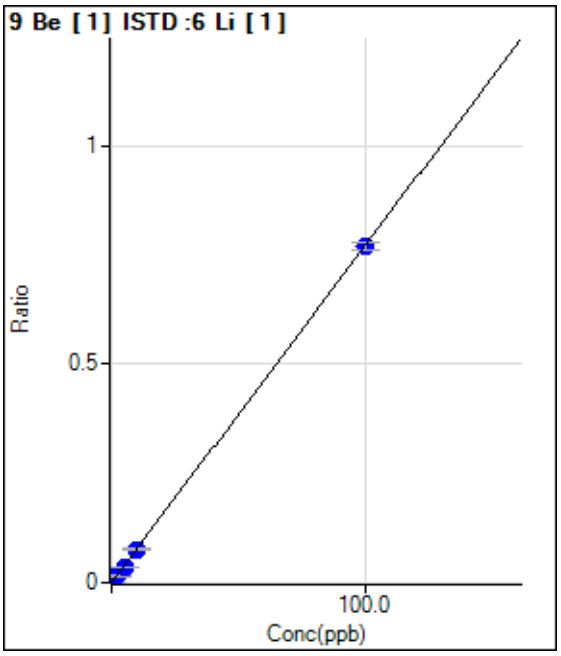
R = 0.9987

DL = 0.1776

BEC = 5.069

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	68.89	0.0002	P	39.5
2	☐	2.000	2.009	5776.74	0.0156	P	4.6
3	☐	5.000	4.767	13971.63	0.0368	P	1.4
4	☐	10.000	9.953	28953.30	0.0766	P	3.3
5	☐	100.000	100.016	269170.81	0.7682	P	2.2
6	☐			530295.03	1.6800	P	2.3
7	☐	1.000					

y = 0.0077 * x + 1.7656E-004

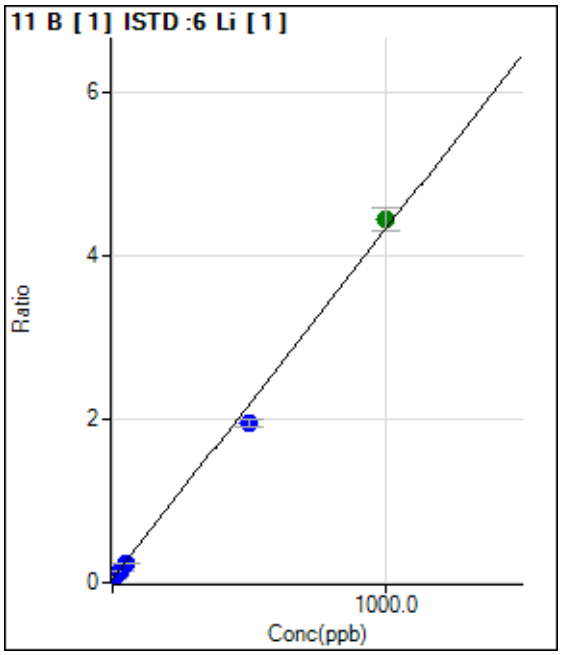
R = 1.0000

DL = 0.02727

BEC = 0.02299

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18372.37	0.0474	P	4.3
2	☐	10.000	8.061	30294.41	0.0818	P	2.7
3	☐	25.000	20.561	51315.79	0.1352	P	6.0
4	☐	50.000	42.940	87208.85	0.2308	P	5.1
5	☐	500.000	445.769	683543.88	1.9516	P	5.7
6	☐	1000.000	1027.599	1400021.51	4.4371	A	6.4
7	☐	5.000					

y = 0.0043 * x + 0.0474

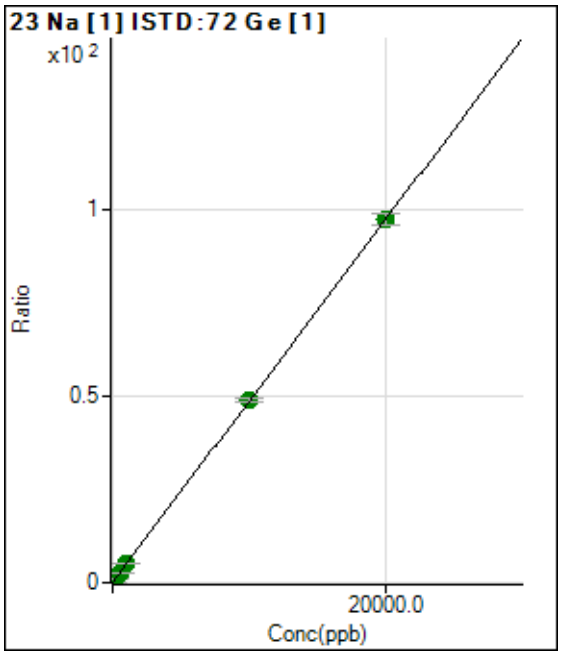
R = 0.9980

DL = 1.427

BEC = 11.09

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	145386.16	0.0667	P	5.1
2	☐	200.000	218.989	2339278.84	1.1290	A	6.6
3	☐	500.000	518.997	5518060.20	2.5845	A	2.1
4	☐	1000.000	1056.926	11030255.95	5.1941	A	3.1
5	☐	10000.00	10011.20	99980908.51	48.6339	A	2.1
6	☐	20000.00	19990.88	196630170.4	97.0482	A	3.1
7	☐	100.000					

y = 0.0049 * x + 0.0667

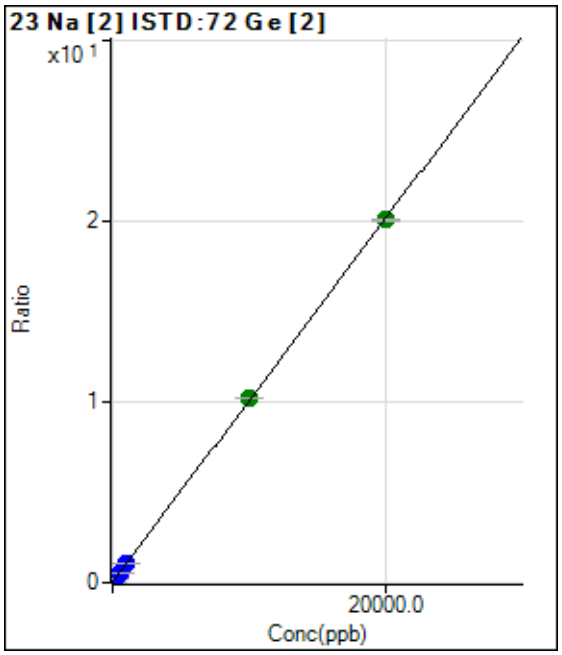
R = 1.0000

DL = 2.094

BEC = 13.74

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5734.53	0.0210	P	4.4
2	☐	200.000	204.998	62254.86	0.2270	P	0.6
3	☐	500.000	516.600	146531.25	0.5401	P	0.4
4	☐	1000.000	1052.314	290933.89	1.0784	P	1.1
5	☐	10000.00	10137.50	2683792.91	10.2069	A	0.8
6	☐	20000.00	19928.16	5232311.21	20.0443	A	0.3
7	☐	100.000					

y = 0.0010 * x + 0.0210

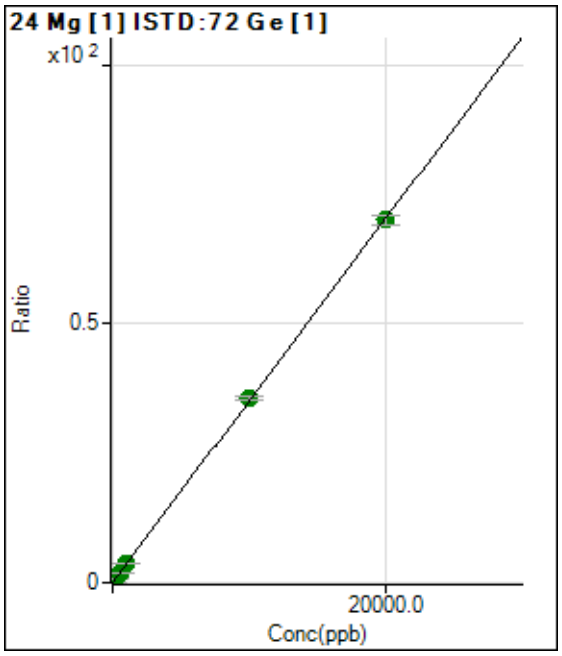
R = 1.0000

DL = 2.792

BEC = 20.94

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	29540.60	0.0135	P	32.7
2	☐	200.000	223.245	1653420.32	0.7982	A	7.1
3	☐	500.000	530.189	4007801.61	1.8771	A	2.2
4	☐	1000.000	1066.814	7992138.28	3.7633	A	2.6
5	☐	10000.00	10101.96	73025251.13	35.5219	A	2.1
6	☐	20000.00	19944.68	142070604.5	70.1190	A	3.0
7	☐	100.000					

y = 0.0035 * x + 0.0135

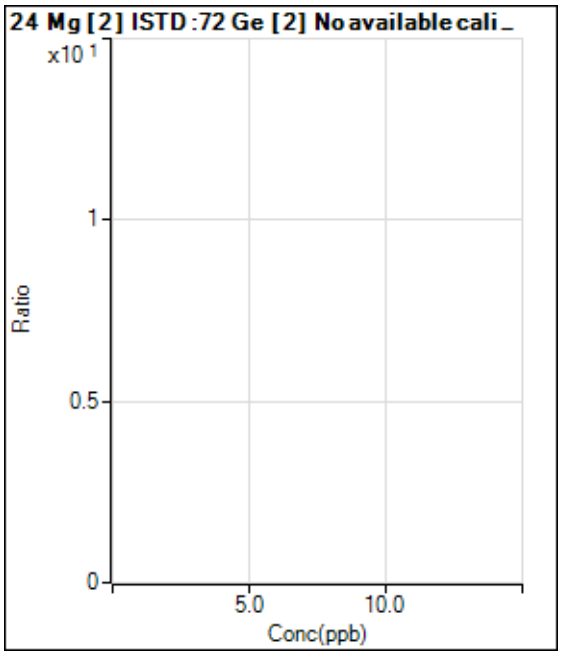
R = 1.0000

DL = 3.763

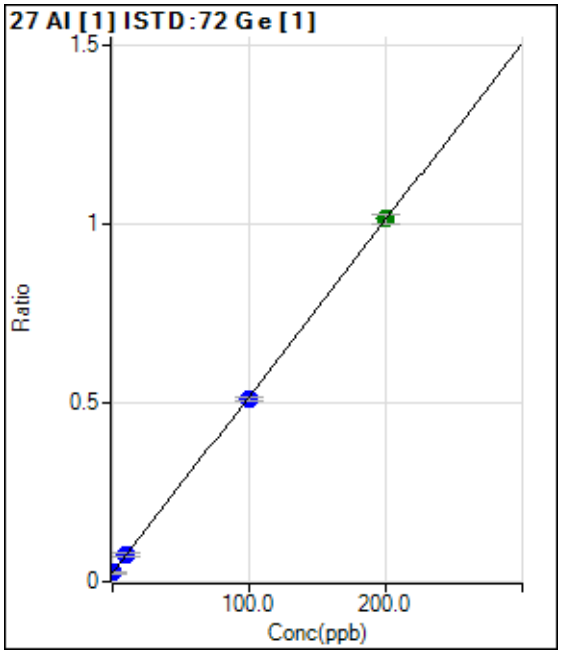
BEC = 3.833

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.00					
6	☐	20000.00					
7	☐	100.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.187	55598.17	0.0254	P	30.4
2	☐			96677.35	0.0471	P	31.0
3	☐			124680.85	0.0583	P	13.9
4	☐	10.000	10.405	161194.24	0.0758	P	9.9
5	☐	100.000	98.856	1052145.74	0.5118	P	1.9
6	☐	200.000	200.552	2052871.36	1.0131	A	2.5
7	☐	1.000					

y = 0.0049 * x + 0.0245

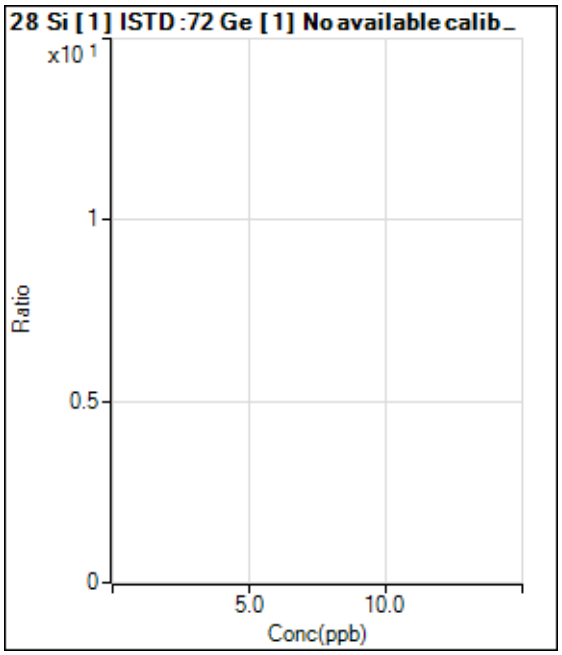
R = 1.0000

DL = 4.703

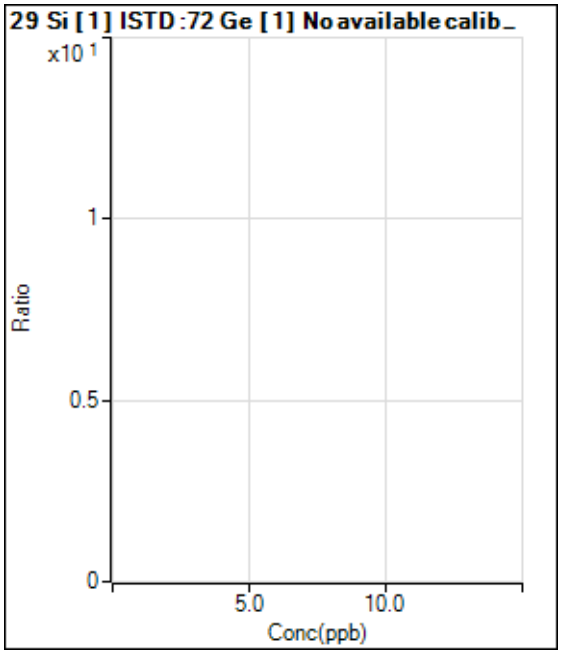
BEC = 4.962

Weight: None

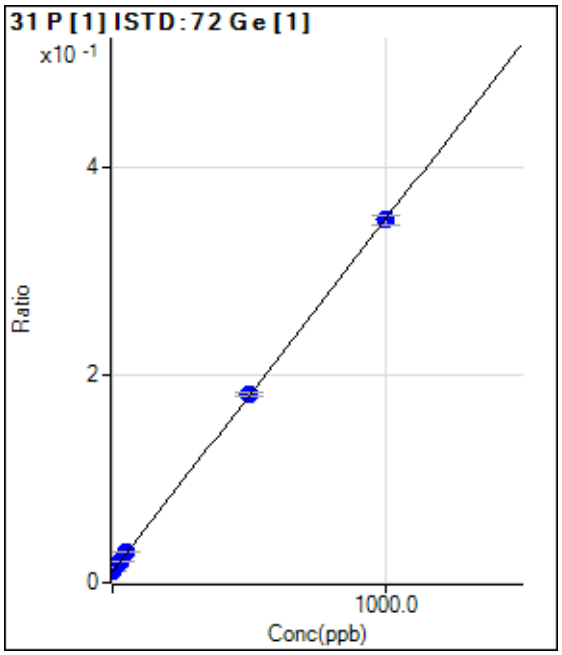
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23427.62	0.0107	P	3.6
2	☐	10.000	12.929	31309.90	0.0151	P	9.1
3	☐	25.000	26.825	42369.94	0.0198	P	1.9
4	☐	50.000	54.005	61706.89	0.0290	P	1.0
5	☐	500.000	502.080	371878.05	0.1809	P	1.8
6	☐	1000.000	998.685	707475.13	0.3492	P	3.0
7	☐	5.000					

y = 3.3888E−004 * x + 0.0107

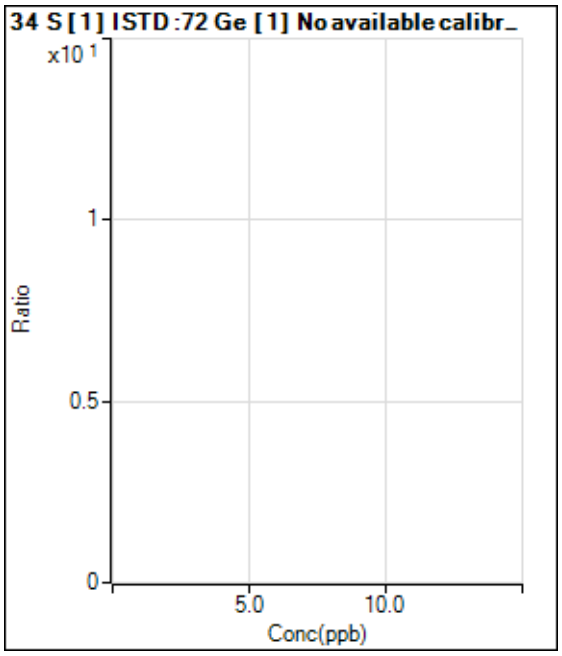
R = 1.0000

DL = 3.412

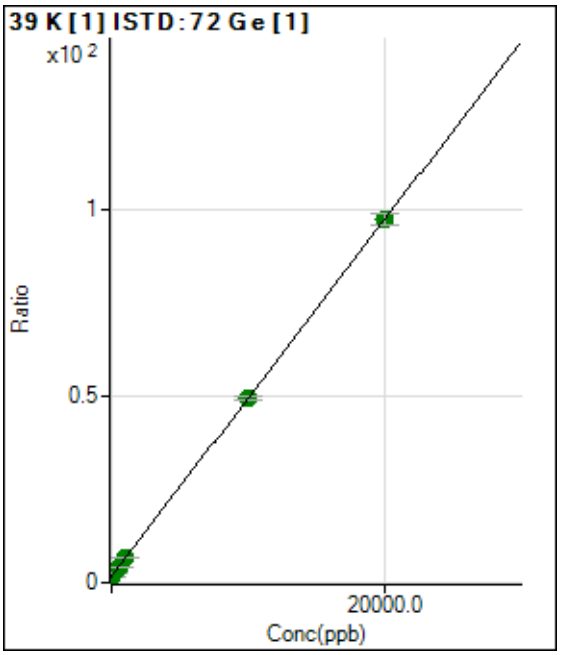
BEC = 31.71

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.00					
6	☐	40000.00					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3740600.53	1.7180	A	3.1
2	☐	200.000	227.241	5814231.65	2.8052	A	5.7
3	☐	500.000	521.323	8993444.59	4.2122	A	2.1
4	☐	1000.000	1051.434	14333205.48	6.7485	A	1.9
5	☐	10000.00	10009.31	101980626.2	49.6060	A	2.0
6	☐	20000.00	19991.96	197268308.1	97.3664	A	3.3
7	☐	100.000					

y = 0.0048 * x + 1.7180

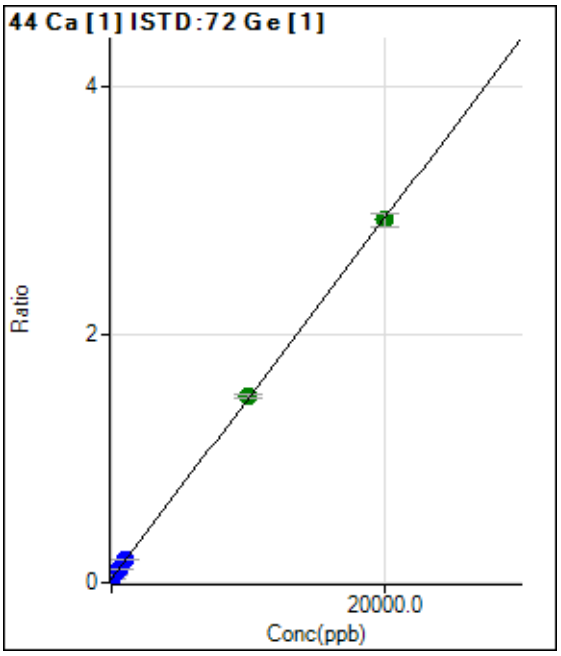
R = 1.0000

DL = 33.06

BEC = 359.1

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	67148.94	0.0308	P	4.4
2	☐	200.000	232.244	133439.69	0.0645	P	10.1
3	☐	500.000	528.169	229431.02	0.1074	P	0.5
4	☐	1000.000	1050.854	389260.80	0.1833	P	1.8
5	☐	10000.00	10147.73	3090284.68	1.5031	A	1.7
6	☐	20000.00	19922.56	5918465.05	2.9214	A	3.7
7	☐	100.000					

y = 1.4509E-004 * x + 0.0308

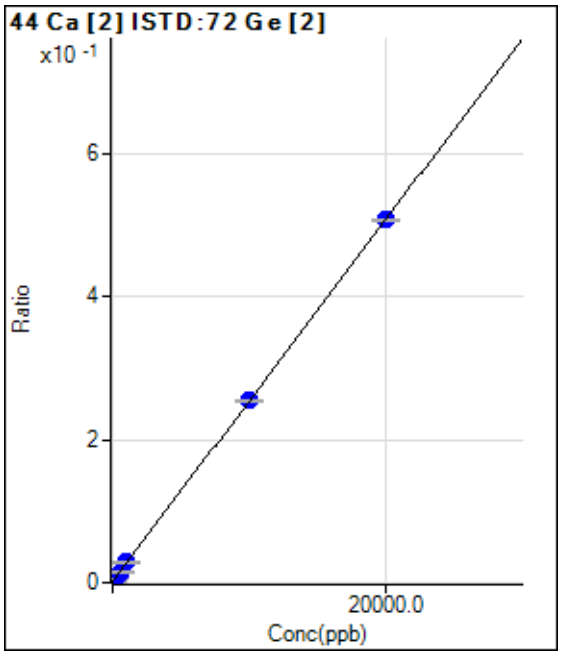
R = 1.0000

DL = 27.8

BEC = 212.3

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	357.80	0.0013	P	6.0
2	☐	200.000	212.044	1831.29	0.0067	P	4.9
3	☐	500.000	520.764	3930.64	0.0145	P	4.3
4	☐	1000.000	1068.739	7649.77	0.0284	P	3.2
5	☐	10000.00	9992.310	66823.82	0.2541	P	1.1
6	☐	20000.00	19999.76	132434.92	0.5073	P	0.8
7	☐	100.000					

y = 2.5302E-005 * x + 0.0013

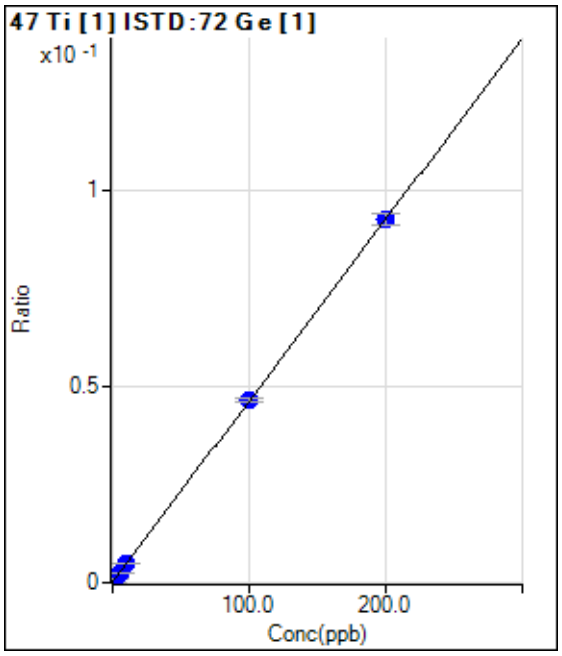
R = 1.0000

DL = 9.41

BEC = 51.89

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	198.90	0.0001	P	25.3
2	☐	2.000	2.097	2194.68	0.0011	P	7.6
3	☐	5.000	5.265	5386.63	0.0025	P	4.0
4	☐	10.000	10.382	10374.67	0.0049	P	5.6
5	☐	100.000	100.260	95401.87	0.0464	P	2.1
6	☐	200.000	199.843	187228.79	0.0924	P	3.1
7	☐	1.000					

y = 4.6195E-004 * x + 9.1010E-005

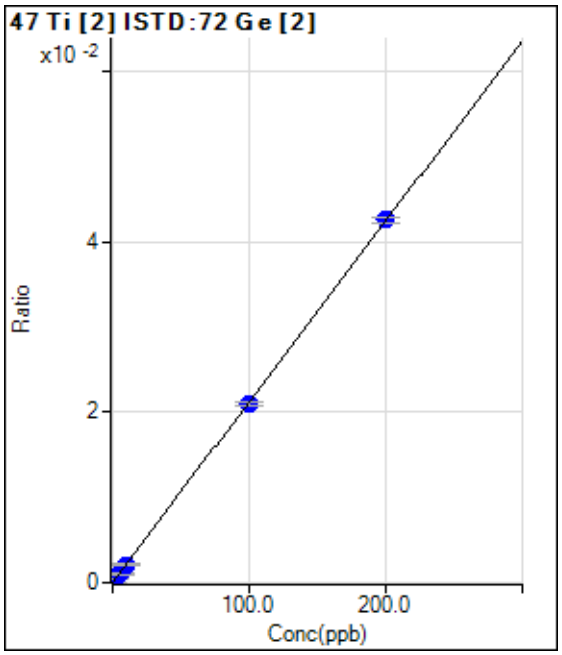
R = 1.0000

DL = 0.1495

BEC = 0.197

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6.67	0.0000	P	50.0
2	☐	2.000	2.047	125.56	0.0005	P	11.0
3	☐	5.000	4.684	275.57	0.0010	P	14.4
4	☐	10.000	9.887	571.15	0.0021	P	7.1
5	☐	100.000	98.422	5484.45	0.0209	P	2.2
6	☐	200.000	200.802	11101.79	0.0425	P	1.4
7	☐	1.000					

y = 2.1168E-004 * x + 2.4458E-005

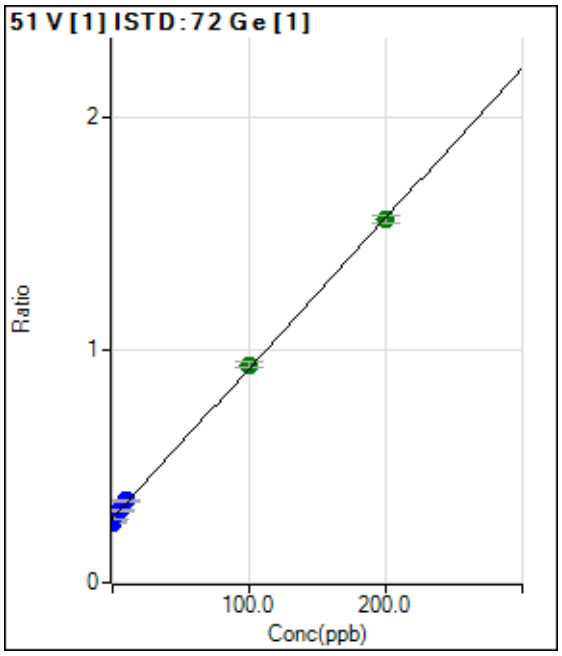
R = 1.0000

DL = 0.1733

BEC = 0.1155

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-2.775	563224.43	0.2585	P	1.9
2	☐	2.000	1.518	592082.83	0.2862	P	10.3
3	☐	5.000	5.374	664605.63	0.3111	P	1.9
4	☐	10.000	11.868	750258.62	0.3531	P	1.5
5	☐	100.000	102.227	1926173.61	0.9369	A	2.8
6	☐	200.000	198.789	3162754.04	1.5608	A	2.1
7	☐	1.000					

y = 0.0065 * x + 0.2764

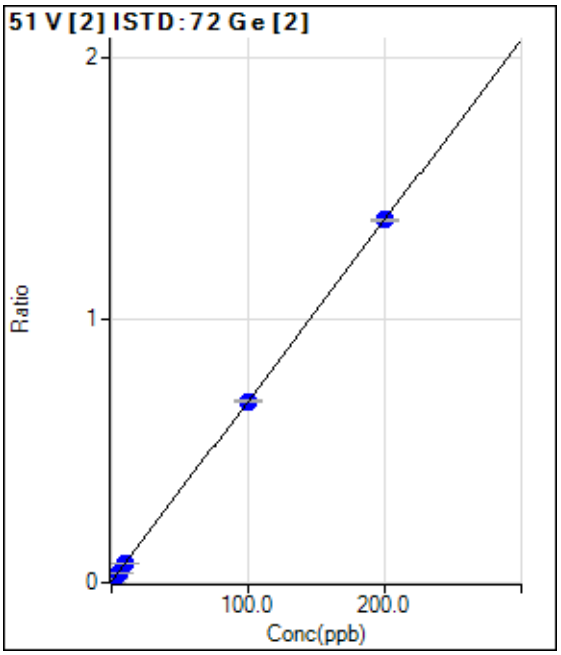
R = 0.9997

DL = 2.288

BEC = 42.78

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.138	933.40	0.0034	P	7.8
2	☐	2.000	1.929	4834.24	0.0176	P	2.8
3	☐	5.000	5.104	10700.43	0.0394	P	2.9
4	☐	10.000	10.327	20320.55	0.0753	P	3.3
5	☐	100.000	99.594	181062.06	0.6886	P	1.3
6	☐	200.000	200.185	360166.02	1.3797	P	0.4
7	☐	1.000					

y = 0.0069 * x + 0.0044

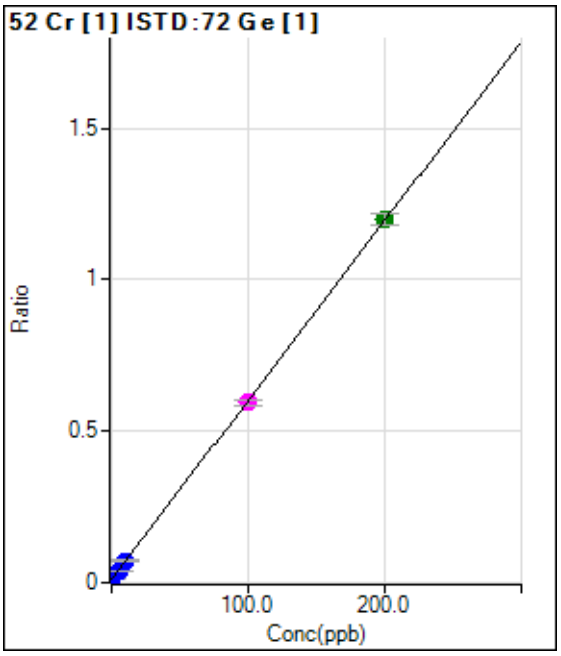
R = 1.0000

DL = 0.1163

BEC = 0.6368

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22663.59	0.0104	P	1.9
2	☐	2.000	2.165	48050.11	0.0232	P	8.5
3	☐	5.000	5.169	87527.53	0.0410	P	0.7
4	☐	10.000	10.469	153647.60	0.0723	P	2.1
5	☐	100.000	98.694	1221755.13	0.5944	M	3.3
6	☐	200.000	200.624	2426243.09	1.1975	A	3.2
7	☐	1.000					

y = 0.0059 * x + 0.0104

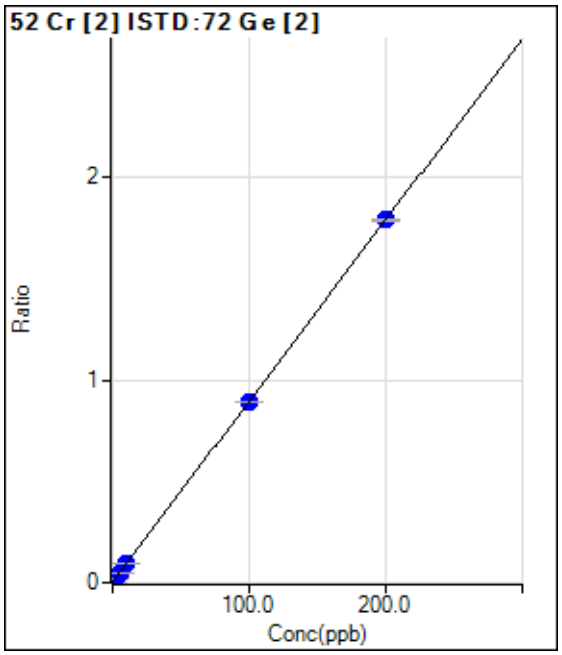
R = 1.0000

DL = 0.1025

BEC = 1.758

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	588.93	0.0022	P	11.0
2	☐	2.000	2.117	5775.68	0.0211	P	3.5
3	☐	5.000	5.169	13105.53	0.0483	P	2.4
4	☐	10.000	10.545	25979.41	0.0963	P	1.2
5	☐	100.000	99.672	234524.28	0.8919	P	0.5
6	☐	200.000	200.131	466916.53	1.7887	P	0.6
7	☐	1.000					

y = 0.0089 * x + 0.0022

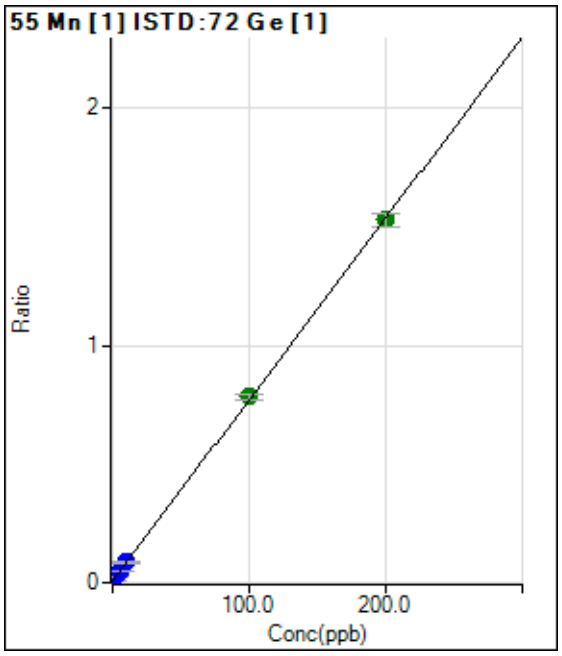
R = 1.0000

DL = 0.08003

BEC = 0.2421

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14963.84	0.0069	P	9.0
2	☐	2.000	2.206	49039.80	0.0237	P	10.2
3	☐	5.000	5.138	98457.30	0.0461	P	0.8
4	☐	10.000	10.303	181724.35	0.0856	P	2.2
5	☐	100.000	101.521	1608148.76	0.7823	A	2.2
6	☐	200.000	199.219	3096652.32	1.5285	A	3.5
7	☐	1.000					

y = 0.0076 * x + 0.0069

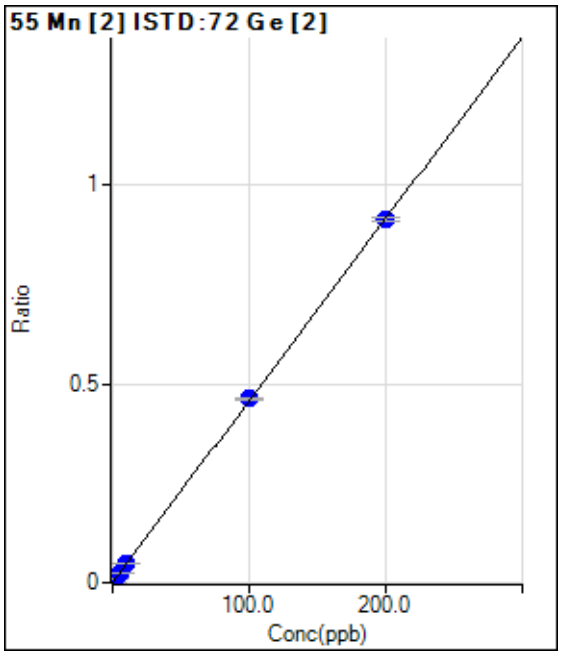
R = 1.0000

DL = 0.2411

BEC = 0.8977

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	154.45	0.0006	P	10.9
2	☐	2.000	2.049	2727.01	0.0099	P	7.0
3	☐	5.000	5.313	6750.49	0.0249	P	0.8
4	☐	10.000	10.670	13327.92	0.0494	P	0.4
5	☐	100.000	100.963	121651.34	0.4627	P	0.6
6	☐	200.000	199.477	238462.55	0.9135	P	1.0
7	☐	1.000					

y = 0.0046 * x + 5.6674E-004

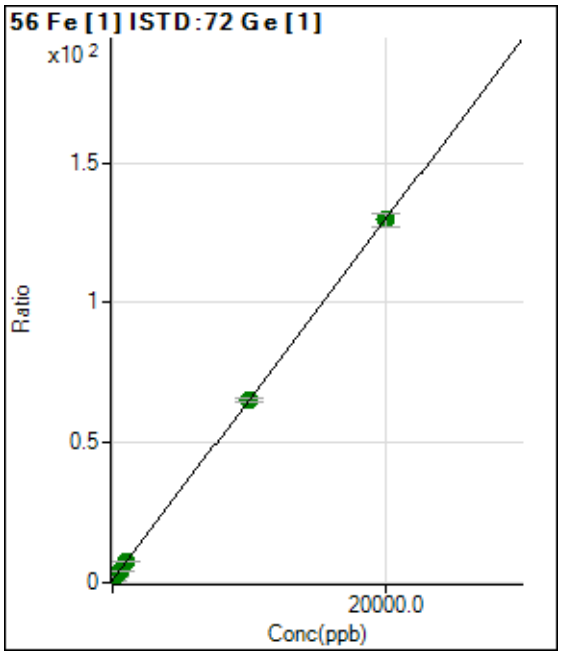
R = 1.0000

DL = 0.04044

BEC = 0.1238

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1813790.65	0.8327	A	1.2
2	☐	200.000	225.450	4736417.26	2.2861	A	6.6
3	☐	500.000	521.493	8956051.67	4.1946	A	1.8
4	☐	1000.000	1059.905	16280994.34	7.6655	A	1.9
5	☐	10000.00	10027.20	134607325.7	65.4744	A	1.7
6	☐	20000.00	19982.61	262667811.6	129.653	A	3.6
7	☐	100.000					

y = 0.0064 * x + 0.8327

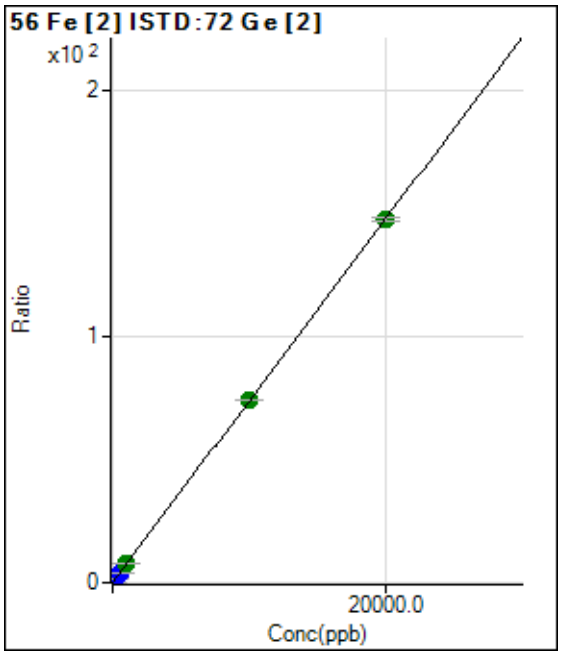
R = 1.0000

DL = 4.572

BEC = 129.2

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7436.39	0.0273	P	6.3
2	☐	200.000	207.074	426883.44	1.5567	P	0.7
3	☐	500.000	518.747	1046815.57	3.8585	P	0.3
4	☐	1000.000	1085.703	2170751.44	8.0459	A	0.4
5	☐	10000.00	10077.44	19577409.99	74.4553	A	0.4
6	☐	20000.00	19956.45	38481773.04	147.417	A	1.0
7	☐	100.000					

y = 0.0074 * x + 0.0273

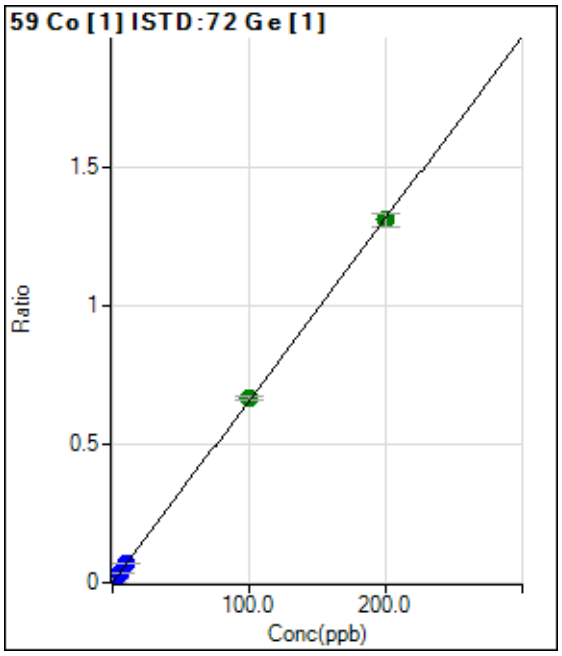
R = 1.0000

DL = 0.7013

BEC = 3.694

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	383.36	0.0002	P	20.7
2	☐	2.000	2.112	29202.42	0.0141	P	6.1
3	☐	5.000	5.097	72086.57	0.0338	P	1.8
4	☐	10.000	10.346	145147.07	0.0684	P	3.0
5	☐	100.000	101.555	1376138.92	0.6694	A	2.2
6	☐	200.000	199.202	2659808.05	1.3129	A	3.7
7	☐	1.000					

y = 0.0066 * x + 1.7516E-004

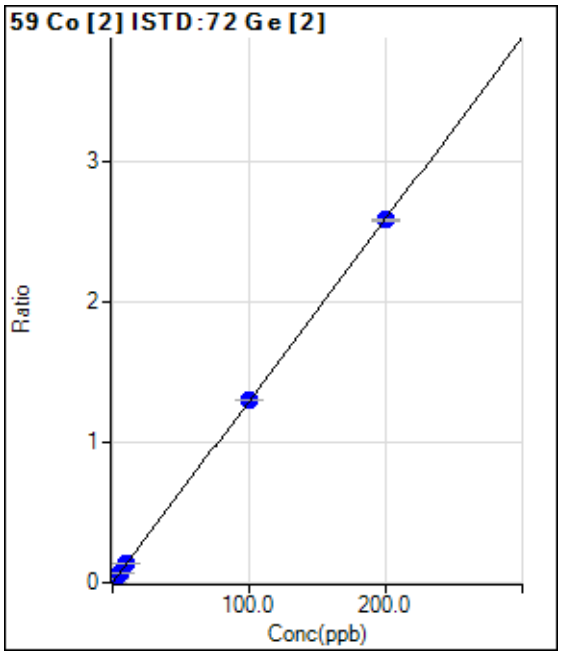
R = 1.0000

DL = 0.01648

BEC = 0.02658

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	45.56	0.0002	P	32.9
2	☐	2.000	2.155	7716.51	0.0281	P	1.9
3	☐	5.000	5.324	18792.09	0.0693	P	3.1
4	☐	10.000	10.713	37557.79	0.1392	P	0.9
5	☐	100.000	100.767	343936.56	1.3080	P	0.3
6	☐	200.000	199.571	676181.13	2.5904	P	0.3
7	☐	1.000					

y = 0.0130 * x + 1.6714E-004

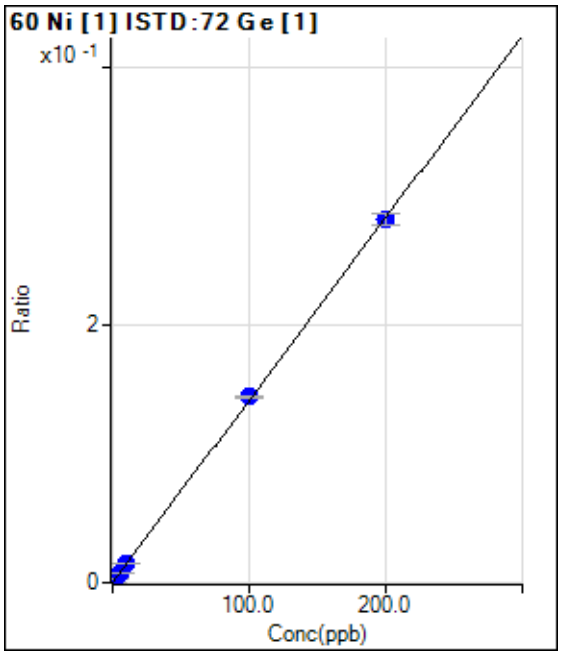
R = 1.0000

DL = 0.01272

BEC = 0.01288

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	154.45	0.0001	P	23.1
2	☐	2.000	2.204	6608.21	0.0032	P	3.6
3	☐	5.000	5.351	16292.79	0.0076	P	3.2
4	☐	10.000	10.768	32459.50	0.0153	P	2.9
5	☐	100.000	101.947	296288.09	0.1441	P	1.1
6	☐	200.000	198.977	569719.20	0.2812	P	3.3
7	☐	1.000					

y = 0.0014 * x + 7.0722E-005

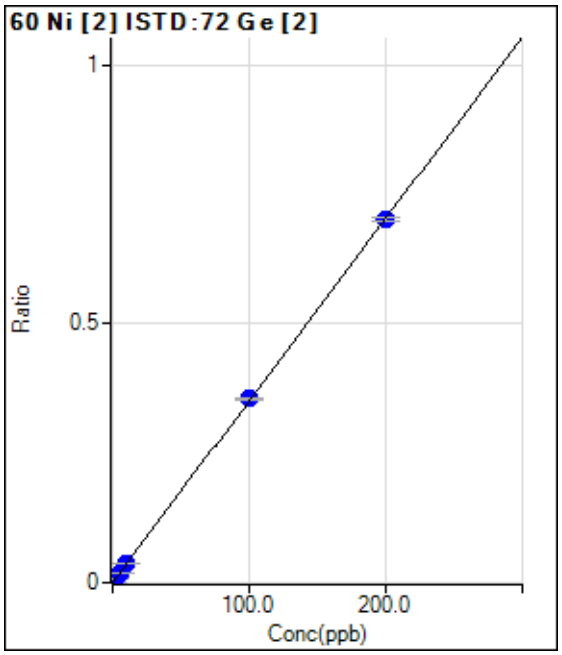
R = 0.9999

DL = 0.03468

BEC = 0.05006

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	68.89	0.0003	P	26.6
2	☐	2.000	2.081	2073.55	0.0076	P	6.7
3	☐	5.000	5.434	5246.60	0.0193	P	1.7
4	☐	10.000	10.742	10246.83	0.0380	P	0.7
5	☐	100.000	100.997	93338.50	0.3550	P	0.5
6	☐	200.000	199.453	182920.88	0.7008	P	1.0
7	☐	1.000					

y = 0.0035 * x + 2.5275E-004

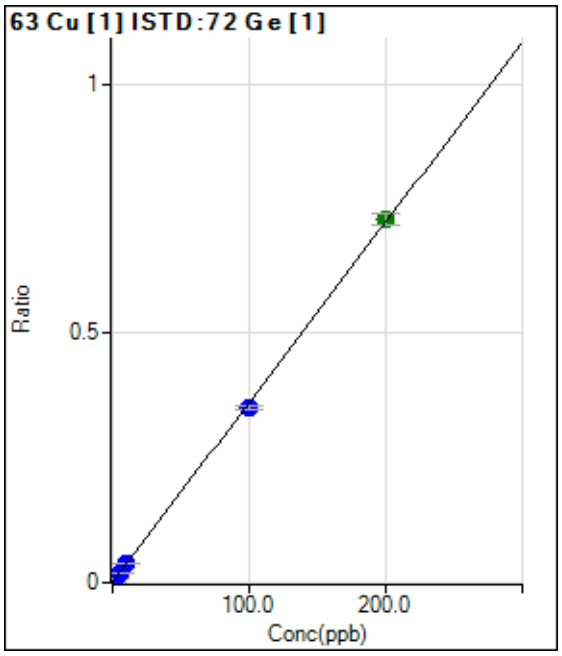
R = 1.0000

DL = 0.05741

BEC = 0.07196

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1569.04	0.0007	P	5.7
2	☐	2.000	2.135	17468.48	0.0084	P	8.0
3	☐	5.000	5.001	40121.23	0.0188	P	1.4
4	☐	10.000	10.428	81548.79	0.0384	P	1.8
5	☐	100.000	97.207	723495.96	0.3519	P	1.9
6	☐	200.000	201.374	1475550.93	0.7283	A	3.2
7	☐	1.000					

y = 0.0036 * x + 7.2004E-004

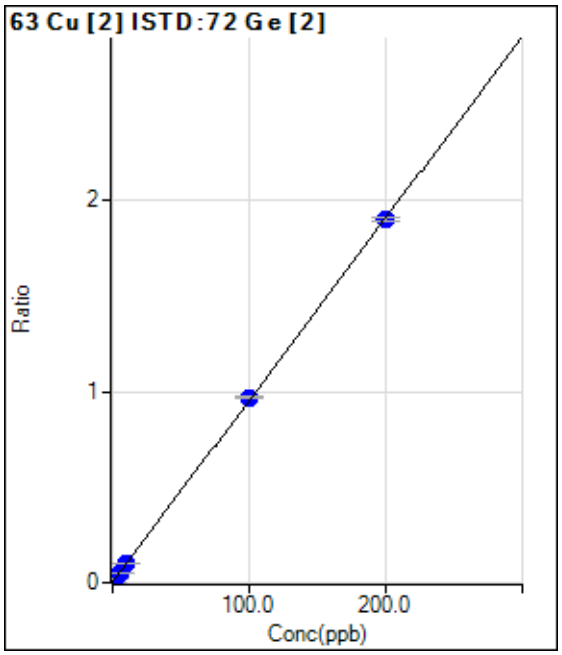
R = 0.9999

DL = 0.03395

BEC = 0.1993

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	514.48	0.0019	P	5.5
2	☐	2.000	2.122	6052.46	0.0221	P	2.0
3	☐	5.000	5.243	14039.69	0.0517	P	1.6
4	☐	10.000	10.725	28032.87	0.1039	P	1.5
5	☐	100.000	101.575	254520.95	0.9680	P	0.7
6	☐	200.000	199.169	494967.95	1.8962	P	0.9
7	☐	1.000					

y = 0.0095 * x + 0.0019

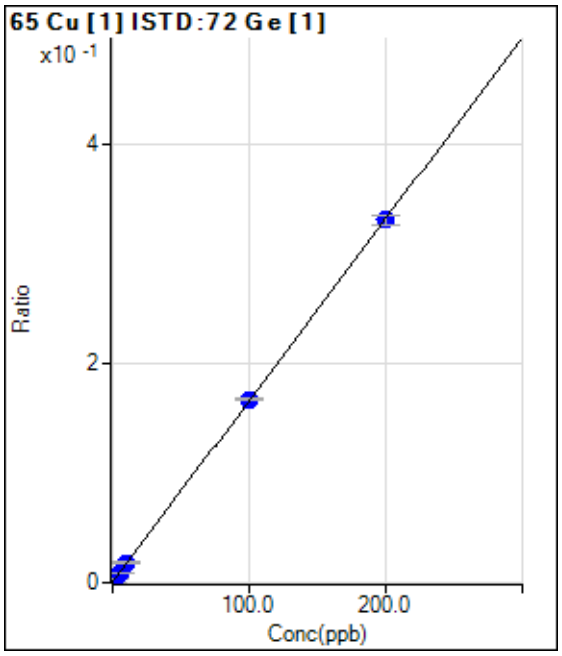
R = 1.0000

DL = 0.03247

BEC = 0.1985

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	826.72	0.0004	P	4.5
2	☐	2.000	2.182	8286.79	0.0040	P	6.0
3	☐	5.000	5.267	19462.92	0.0091	P	0.7
4	☐	10.000	10.835	38967.67	0.0183	P	2.2
5	☐	100.000	100.756	344294.01	0.1675	P	1.2
6	☐	200.000	199.572	671340.84	0.3313	P	2.6
7	☐	1.000					

y = 0.0017 * x + 3.7980E-004

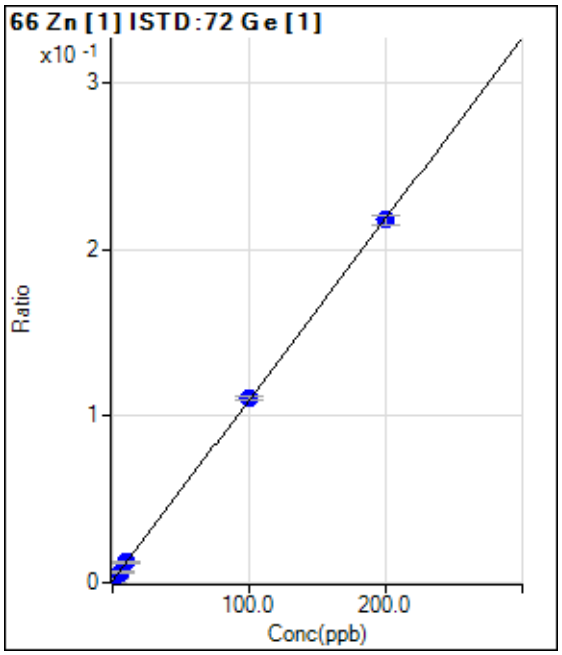
R = 1.0000

DL = 0.03094

BEC = 0.229

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.463	1107.86	0.0005	P	14.7
2	☐	2.000	1.759	6055.79	0.0029	P	7.2
3	☐	5.000	4.889	13514.82	0.0063	P	1.4
4	☐	10.000	10.232	25778.07	0.0121	P	4.1
5	☐	100.000	101.179	228349.07	0.1111	P	1.8
6	☐	200.000	199.404	441558.52	0.2179	P	2.5
7	☐	1.000					

y = 0.0011 * x + 0.0010

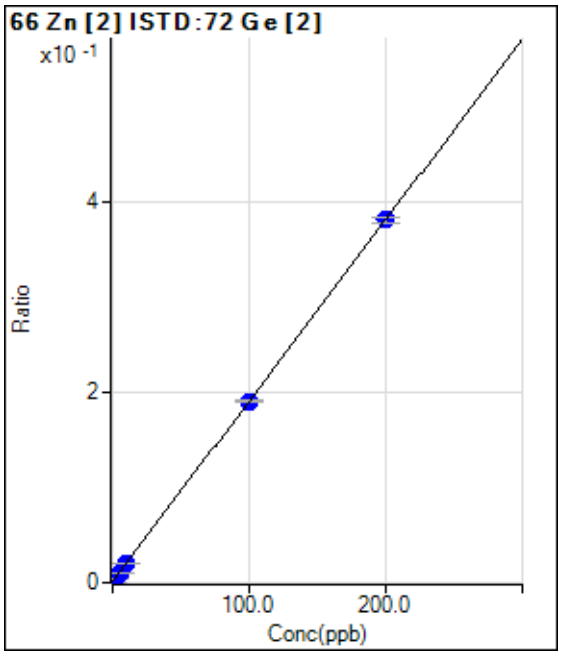
R = 1.0000

DL = 0.2049

BEC = 0.929

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.225	186.67	0.0007	P	20.6
2	☐	2.000	2.014	1354.57	0.0049	P	6.5
3	☐	5.000	4.966	2861.48	0.0105	P	2.9
4	☐	10.000	10.354	5607.84	0.0208	P	2.7
5	☐	100.000	99.816	50162.66	0.1908	P	0.5
6	☐	200.000	200.075	99522.44	0.3813	P	1.2
7	☐	1.000					

y = 0.0019 * x + 0.0011

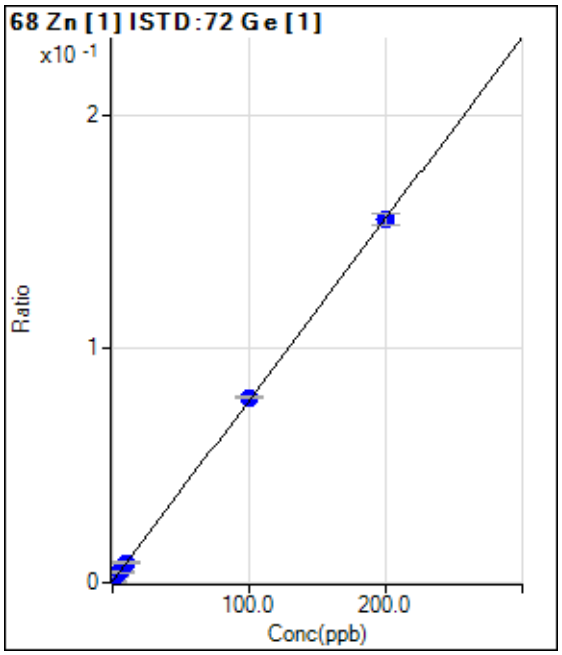
R = 1.0000

DL = 0.2222

BEC = 0.5853

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	921.18	0.0004	P	9.9
2	☐	2.000	2.215	4437.44	0.0021	P	6.9
3	☐	5.000	5.361	9794.33	0.0046	P	2.9
4	☐	10.000	10.543	18282.67	0.0086	P	3.0
5	☐	100.000	101.321	162597.53	0.0791	P	1.3
6	☐	200.000	199.301	314360.47	0.1552	P	3.0
7	☐	1.000					

y = 7.7637E−004 * x + 4.2206E−004

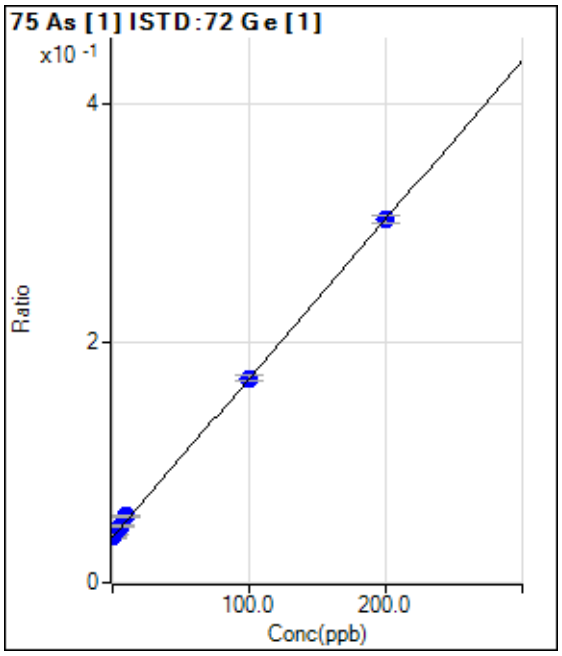
R = 1.0000

DL = 0.1612

BEC = 0.5436

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	82583.43	0.0379	P	3.1
2	☐	2.000	3.284	87401.68	0.0422	P	10.3
3	☐	5.000	6.887	100485.42	0.0470	P	2.8
4	☐	10.000	13.412	118354.20	0.0557	P	1.2
5	☐	100.000	100.250	351639.83	0.1710	P	2.2
6	☐	200.000	199.644	614073.17	0.3030	P	2.2
7	☐	1.000					

y = 0.0013 * x + 0.0379

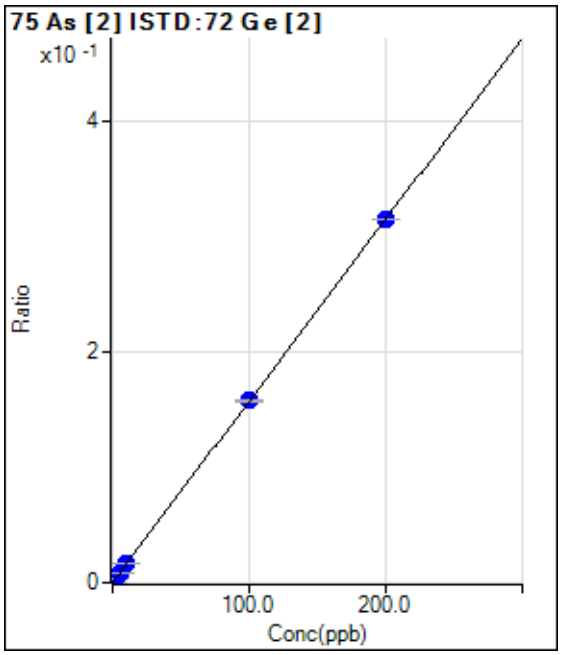
R = 0.9999

DL = 2.627

BEC = 28.53

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	45.56	0.0002	P	36.2
2	☐	2.000	2.147	973.75	0.0036	P	1.8
3	☐	5.000	5.207	2271.67	0.0084	P	1.1
4	☐	10.000	10.315	4430.64	0.0164	P	1.6
5	☐	100.000	100.282	41598.26	0.1582	P	0.7
6	☐	200.000	199.837	82250.04	0.3151	P	0.2
7	☐	1.000					

y = 0.0016 * x + 1.6719E-004

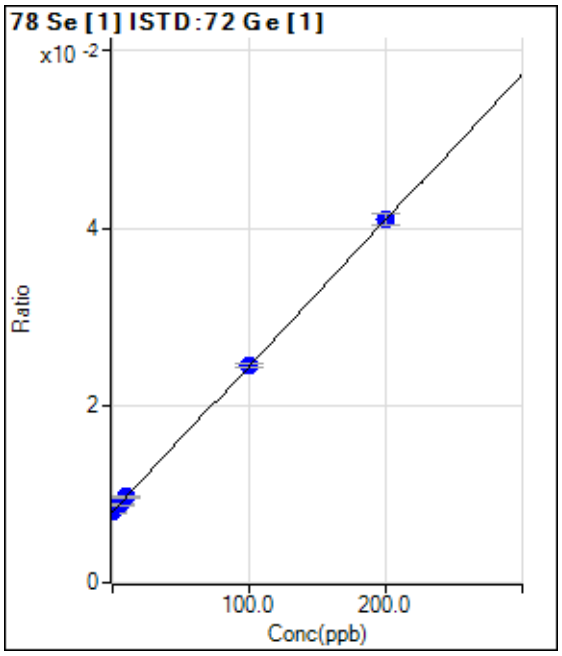
R = 1.0000

DL = 0.1151

BEC = 0.1061

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17431.32	0.0080	P	3.2
2	☐	2.000	3.710	17861.02	0.0086	P	5.6
3	☐	5.000	5.029	18862.12	0.0088	P	2.0
4	☐	10.000	10.244	20586.34	0.0097	P	2.0
5	☐	100.000	99.924	50276.69	0.0245	P	1.8
6	☐	200.000	200.008	82930.69	0.0409	P	3.1
7	☐	1.000					

y = 1.6462E-004 * x + 0.0080

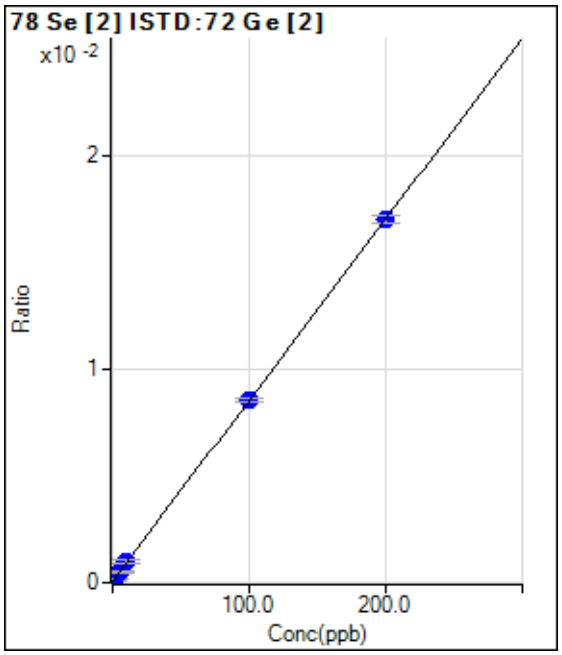
R = 1.0000

DL = 4.602

BEC = 48.64

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17.41	0.0001	P	57.5
2	☐	2.000	1.715	57.41	0.0002	P	4.1
3	☐	5.000	5.329	140.00	0.0005	P	10.3
4	☐	10.000	10.792	264.08	0.0010	P	19.4
5	☐	100.000	100.566	2260.56	0.0086	P	2.0
6	☐	200.000	199.672	4438.80	0.0170	P	2.0
7	☐	1.000					

y = 8.4846E-005 * x + 6.3887E-005

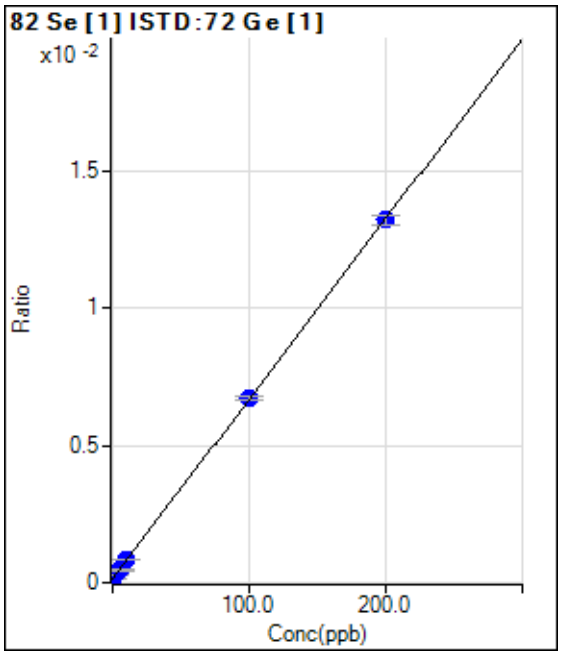
R = 1.0000

DL = 1.3

BEC = 0.753

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	293.34	0.0001	P	5.6
2	☐	2.000	2.250	584.83	0.0003	P	8.6
3	☐	5.000	5.127	1005.23	0.0005	P	8.7
4	☐	10.000	10.770	1787.90	0.0008	P	0.1
5	☐	100.000	100.822	13878.42	0.0068	P	2.0
6	☐	200.000	199.545	26804.71	0.0132	P	2.7
7	☐	1.000					

y = 6.5620E-005 * x + 1.3481E-004

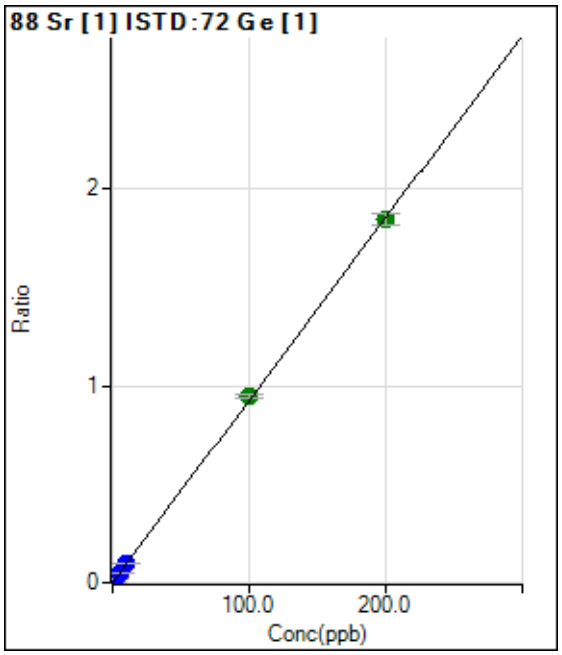
R = 1.0000

DL = 0.3459

BEC = 2.054

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1560.15	0.0007	P	30.1
2	☐	2.000	2.148	42659.69	0.0206	P	6.2
3	☐	5.000	5.038	101040.06	0.0473	P	2.5
4	☐	10.000	10.199	201955.26	0.0951	P	1.6
5	☐	100.000	102.045	1942608.98	0.9449	A	1.9
6	☐	200.000	198.965	3731334.60	1.8417	A	3.3
7	☐	1.000					

y = 0.0093 * x + 7.1216E-004

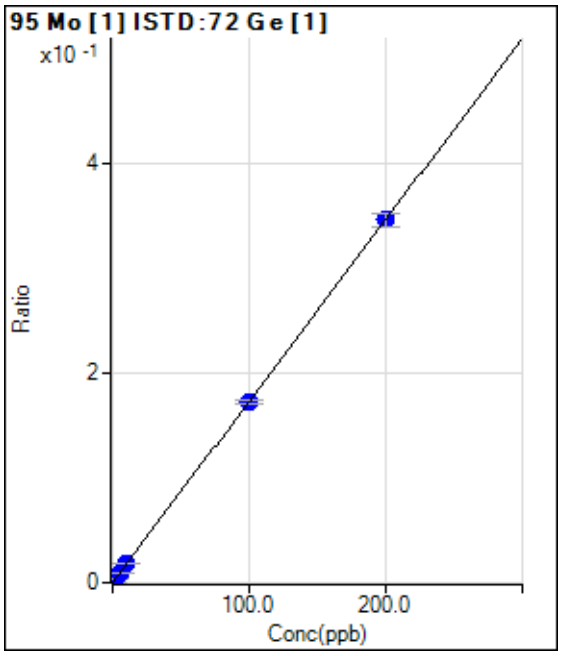
R = 0.9999

DL = 0.06952

BEC = 0.07697

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	220.01	0.0001	P	3.9
2	☐	2.000	2.079	7663.21	0.0037	P	3.0
3	☐	5.000	5.158	19249.66	0.0090	P	2.4
4	☐	10.000	10.318	38070.21	0.0179	P	3.7
5	☐	100.000	99.898	355082.52	0.1727	P	2.3
6	☐	200.000	200.031	700475.67	0.3457	P	3.5
7	☐	1.000					

y = 0.0017 * x + 1.0093E-004

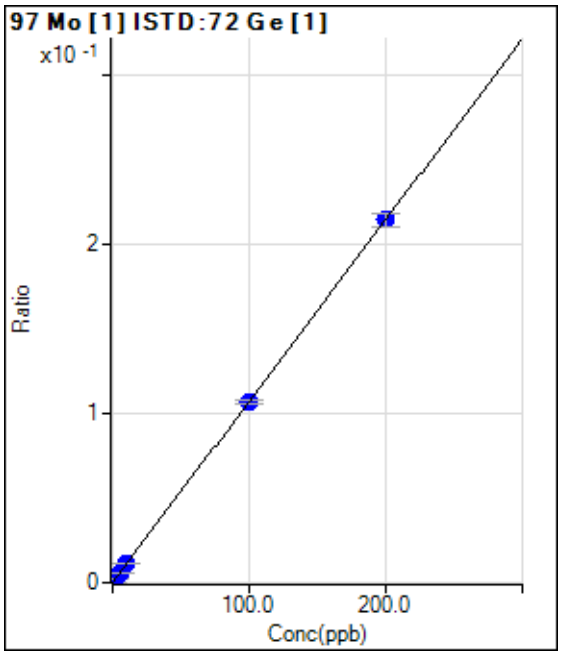
R = 1.0000

DL = 0.00689

BEC = 0.05841

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	203.34	0.0001	P	7.0
2	☐	2.000	2.121	4890.94	0.0024	P	8.0
3	☐	5.000	5.039	11705.69	0.0055	P	2.2
4	☐	10.000	10.310	23610.97	0.0111	P	3.6
5	☐	100.000	99.797	219591.06	0.1068	P	2.2
6	☐	200.000	200.084	433695.22	0.2141	P	3.4
7	☐	1.000					

y = 0.0011 * x + 9.3462E-005

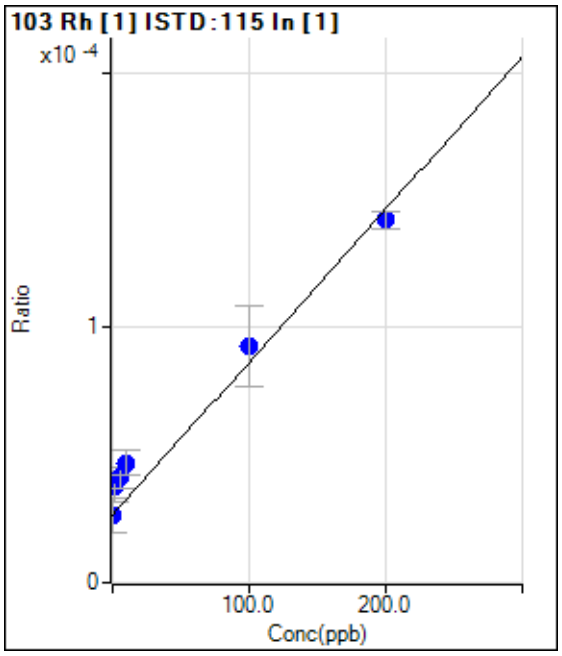
R = 1.0000

DL = 0.01833

BEC = 0.0874

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	61.11	0.0000	P	51.7
2	☐	2.000	18.256	82.23	0.0000	P	32.5
3	☐	5.000	24.512	92.23	0.0000	P	19.7
4	☐	10.000	34.108	105.56	0.0000	P	20.6
5	☐	100.000	110.116	203.34	0.0001	P	33.9
6	☐	200.000	193.086	302.24	0.0001	P	4.7
7	☐	1.000					

y = 5.9940E-007 * x + 2.6603E-005

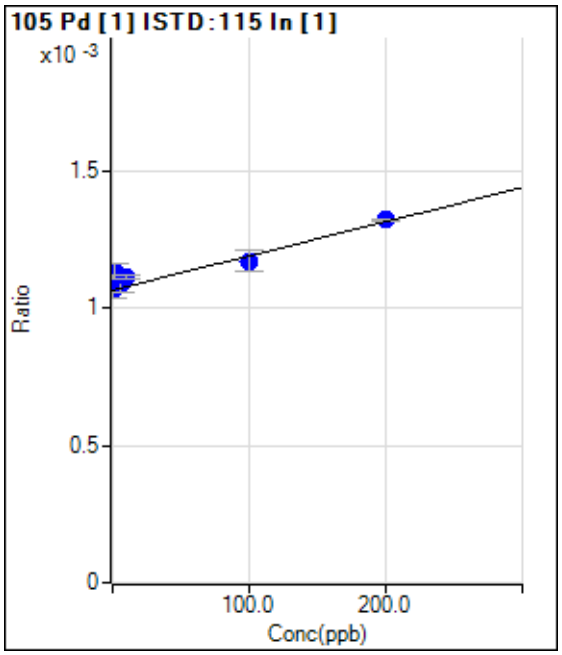
R = 0.9930

DL = 68.87

BEC = 44.38

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2466.98	0.0011	P	5.6
2	☐	2.000	56.722	2492.54	0.0011	P	4.1
3	☐	5.000	16.722	2424.73	0.0011	P	5.7
4	☐	10.000	36.431	2500.33	0.0011	P	1.5
5	☐	100.000	85.884	2571.43	0.0012	P	6.1
6	☐	200.000	204.896	2807.04	0.0013	P	0.4
7	☐	1.000					

y = 1.2479E-006 * x + 0.0011

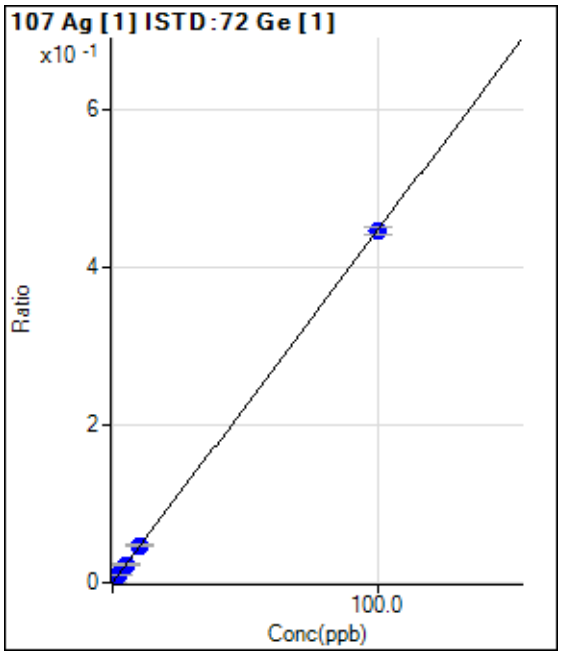
R = 0.9571

DL = 143.4

BEC = 854.7

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	208.90	0.0001	P	9.6
2	☐	2.000	2.109	19719.29	0.0095	P	5.6
3	☐	5.000	5.116	48966.96	0.0229	P	2.3
4	☐	10.000	10.449	99253.72	0.0467	P	3.5
5	☐	100.000	99.947	917454.28	0.4463	P	2.5
6	☐			1882175.11	0.9290	A	3.2
7	☐	1.000					

y = 0.0045 * x + 9.6036E-005

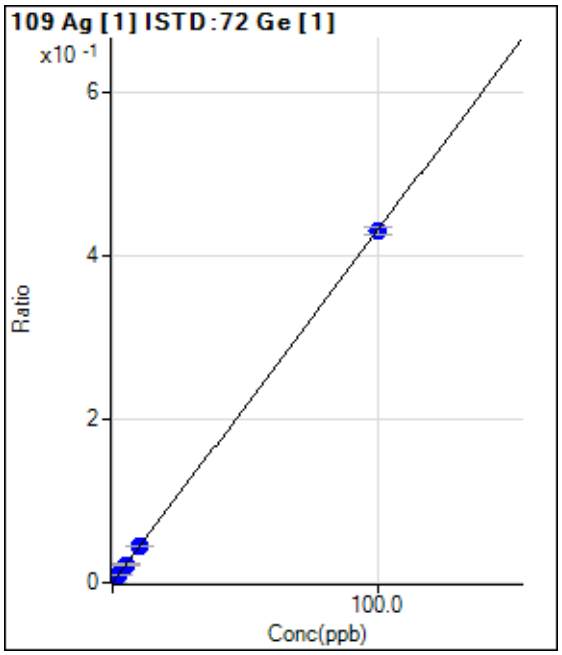
R = 1.0000

DL = 0.006165

BEC = 0.02151

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	148.90	0.0001	P	14.9
2	☐	2.000	2.157	19352.14	0.0093	P	5.7
3	☐	5.000	5.143	47314.58	0.0222	P	3.3
4	☐	10.000	10.372	94757.75	0.0446	P	3.3
5	☐	100.000	99.952	882854.69	0.4294	P	2.2
6	☐			1834607.51	0.9055	A	3.2
7	☐	1.000					

y = 0.0043 * x + 6.8115E-005

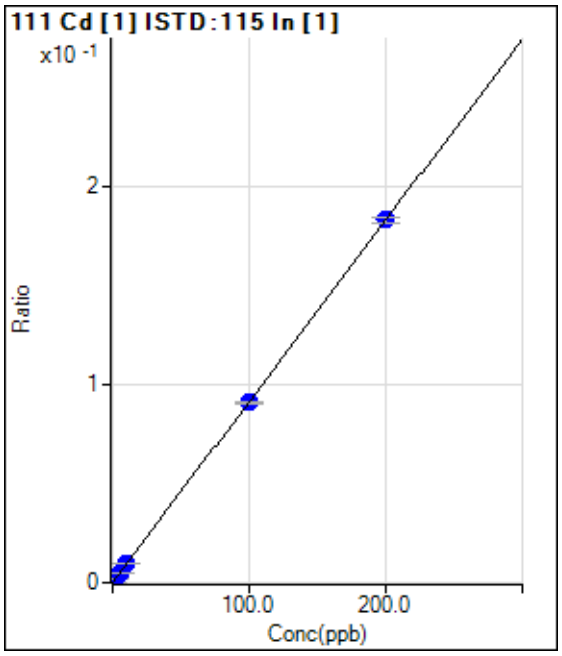
R = 1.0000

DL = 0.007108

BEC = 0.01586

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26.67	0.0000	P	23.2
2	☐	2.000	2.161	4359.66	0.0020	P	1.5
3	☐	5.000	5.224	10668.39	0.0048	P	4.8
4	☐	10.000	10.290	21182.20	0.0094	P	2.8
5	☐	100.000	99.300	198983.56	0.0908	P	1.8
6	☐	200.000	200.328	388961.26	0.1832	P	1.7
7	☐	1.000					

y = 9.1466E-004 * x + 1.1498E-005

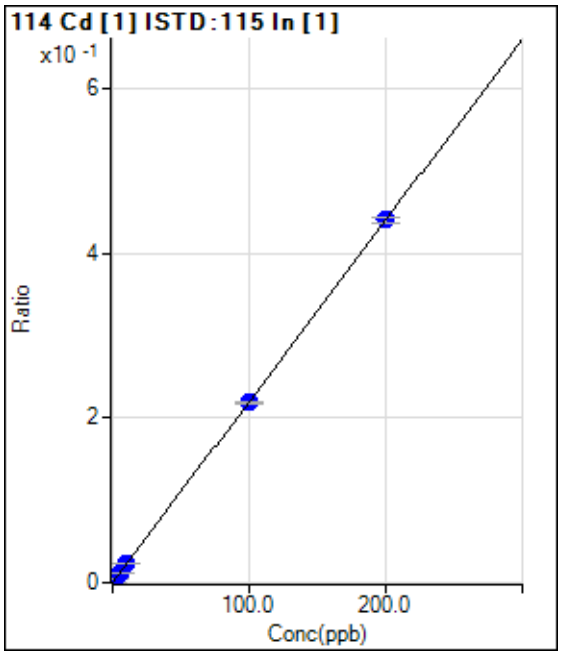
R = 1.0000

DL = 0.008757

BEC = 0.01257

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	46.67	0.0000	P	16.5
2	☐	2.000	2.114	10246.96	0.0047	P	3.7
3	☐	5.000	5.228	25698.61	0.0115	P	1.6
4	☐	10.000	10.446	51757.92	0.0230	P	2.7
5	☐	100.000	99.286	479008.48	0.2187	P	1.2
6	☐	200.000	200.328	936443.34	0.4412	P	1.7
7	☐	1.000					

y = 0.0022 * x + 2.0124E-005

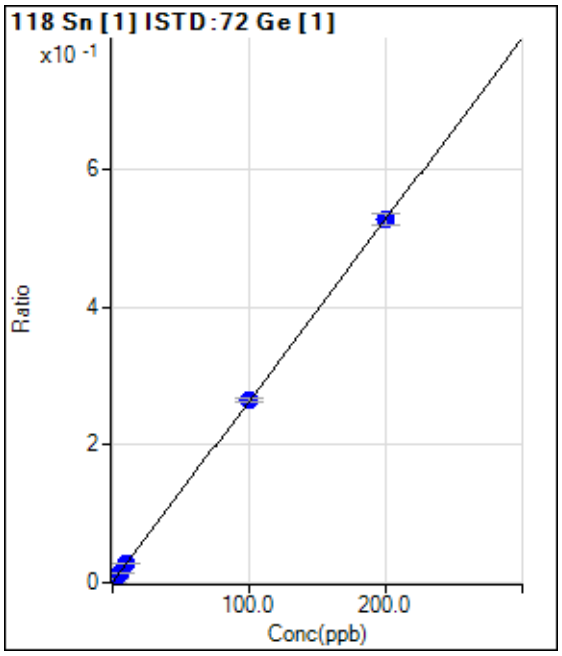
R = 1.0000

DL = 0.004531

BEC = 0.009138

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	827.84	0.0004	P	11.4
2	☐	2.000	2.062	12060.46	0.0058	P	4.8
3	☐	5.000	5.050	29232.59	0.0137	P	2.4
4	☐	10.000	10.314	58540.00	0.0276	P	3.0
5	☐	100.000	100.385	544778.10	0.2650	P	1.8
6	☐	200.000	199.790	1067791.13	0.5270	P	3.0
7	☐	1.000					

y = 0.0026 * x + 3.7937E-004

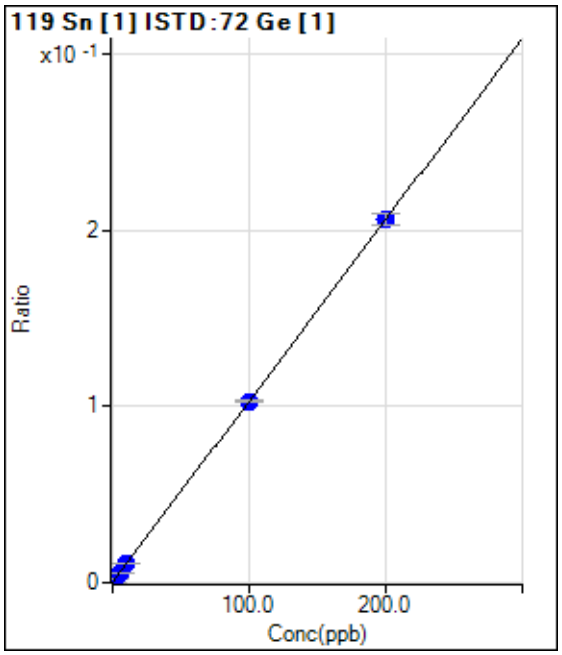
R = 1.0000

DL = 0.0492

BEC = 0.1439

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	331.13	0.0002	P	7.2
2	☐	2.000	2.021	4619.77	0.0022	P	6.6
3	☐	5.000	5.068	11455.58	0.0054	P	2.6
4	☐	10.000	10.282	22774.53	0.0107	P	1.2
5	☐	100.000	99.986	211632.26	0.1029	P	1.4
6	☐	200.000	199.991	416850.74	0.2057	P	3.1
7	☐	1.000					

y = 0.0010 * x + 1.5196E-004

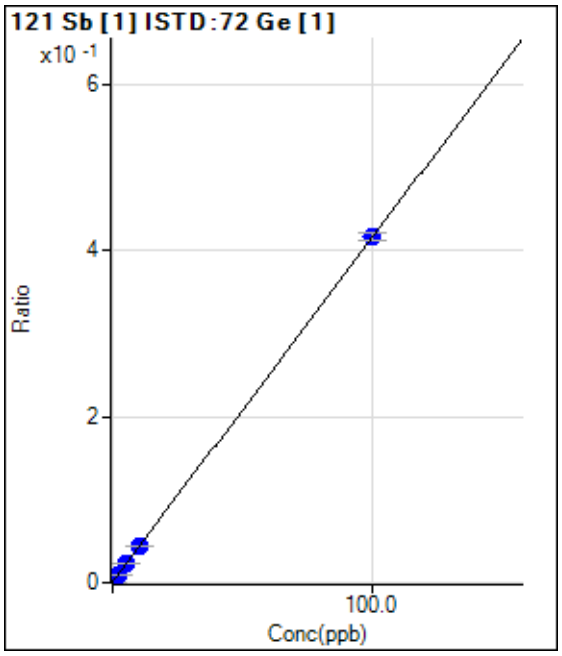
R = 1.0000

DL = 0.03213

BEC = 0.1478

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1817.17	0.0008	P	12.2
2	☐	2.000	2.157	20315.67	0.0098	P	7.0
3	☐	5.000	5.156	47588.72	0.0223	P	1.4
4	☐	10.000	10.489	94454.33	0.0445	P	3.0
5	☐	100.000	99.940	856647.36	0.4167	P	1.8
6	☐			1795054.06	0.8860	A	3.5
7	☐	1.000					

y = 0.0042 * x + 8.3245E-004

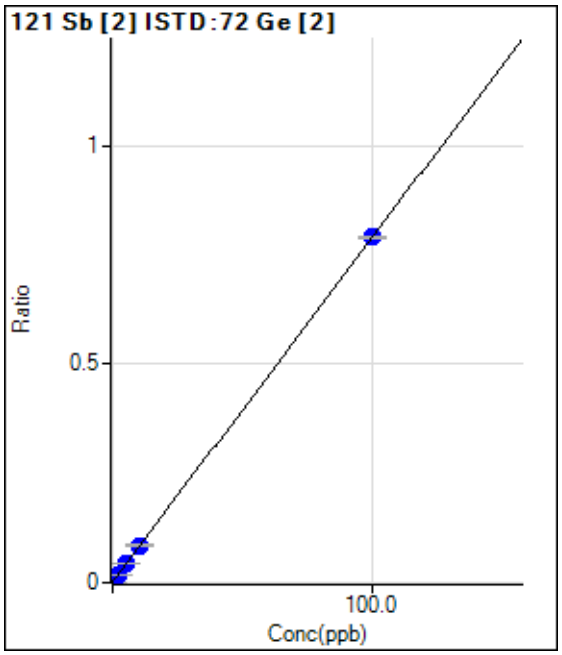
R = 1.0000

DL = 0.07308

BEC = 0.2001

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	404.09	0.0015	P	7.9
2	☐	2.000	2.078	4910.06	0.0179	P	1.2
3	☐	5.000	5.218	11589.04	0.0427	P	0.2
4	☐	10.000	10.592	22979.19	0.0852	P	2.2
5	☐	100.000	99.928	208006.58	0.7911	P	0.8
6	☐			415967.50	1.5936	P	0.9
7	☐	1.000					

y = 0.0079 * x + 0.0015

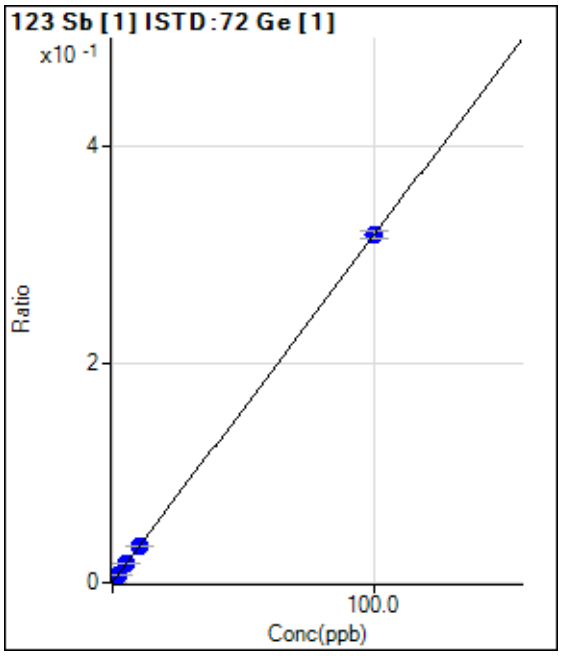
R = 1.0000

DL = 0.04441

BEC = 0.1876

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1311.56	0.0006	P	13.3
2	☐	2.000	2.141	15362.88	0.0074	P	6.6
3	☐	5.000	5.114	36041.85	0.0169	P	1.7
4	☐	10.000	10.446	71895.54	0.0338	P	1.8
5	☐	100.000	99.947	655240.51	0.3187	P	1.9
6	☐			1303863.10	0.6435	P	3.2
7	☐	1.000					

y = 0.0032 * x + 6.0115E-004

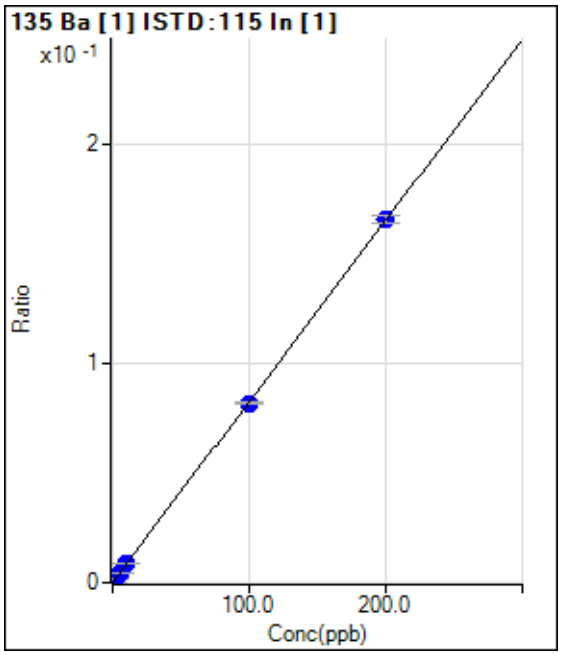
R = 1.0000

DL = 0.0754

BEC = 0.1889

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	171.12	0.0001	P	22.1
2	☐	2.000	2.237	4195.18	0.0019	P	10.7
3	☐	5.000	5.120	9565.48	0.0043	P	3.8
4	☐	10.000	10.405	19448.03	0.0086	P	0.8
5	☐	100.000	99.178	179222.24	0.0818	P	1.2
6	☐	200.000	200.385	350694.85	0.1652	P	2.1
7	☐	1.000					

y = 8.2416E-004 * x + 7.4170E-005

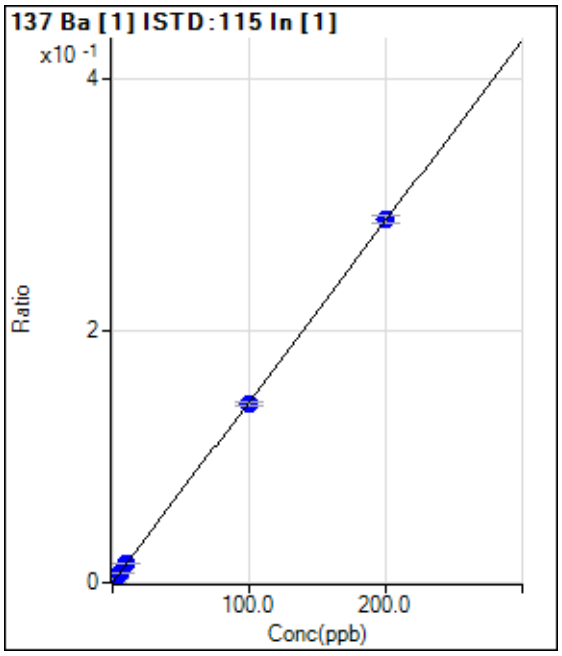
R = 1.0000

DL = 0.05964

BEC = 0.08999

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	306.69	0.0001	P	21.1
2	☐	2.000	2.116	6931.80	0.0032	P	6.6
3	☐	5.000	5.024	16336.71	0.0073	P	2.6
4	☐	10.000	10.223	33238.72	0.0148	P	1.8
5	☐	100.000	98.777	310404.60	0.1417	P	1.8
6	☐	200.000	200.599	610527.33	0.2876	P	2.1
7	☐	1.000					

y = 0.0014 * x + 1.3216E-004

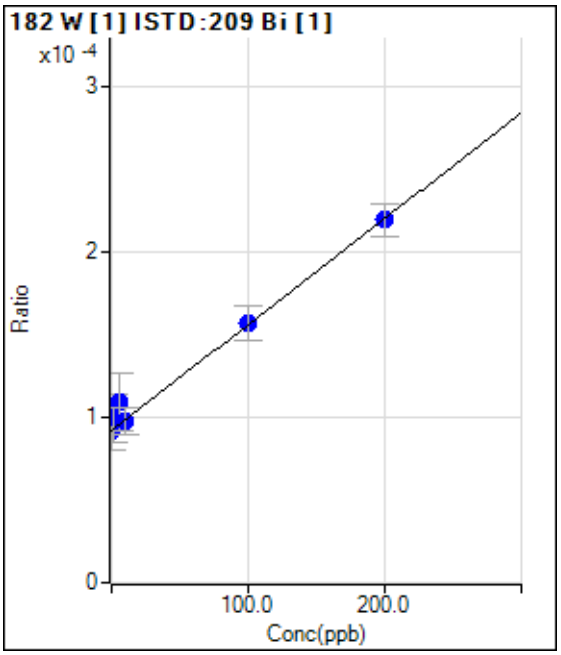
R = 1.0000

DL = 0.05851

BEC = 0.09221

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	203.34	0.0001	P	26.5
2	☐	2.000	11.462	210.01	0.0001	P	29.2
3	☐	5.000	26.900	234.46	0.0001	P	31.2
4	☐	10.000	8.986	210.01	0.0001	P	17.4
5	☐	100.000	101.330	323.35	0.0002	P	13.9
6	☐	200.000	198.744	444.47	0.0002	P	9.2
7	☐	1.000					

y = 6.4107E-007 * x + 9.2225E-005

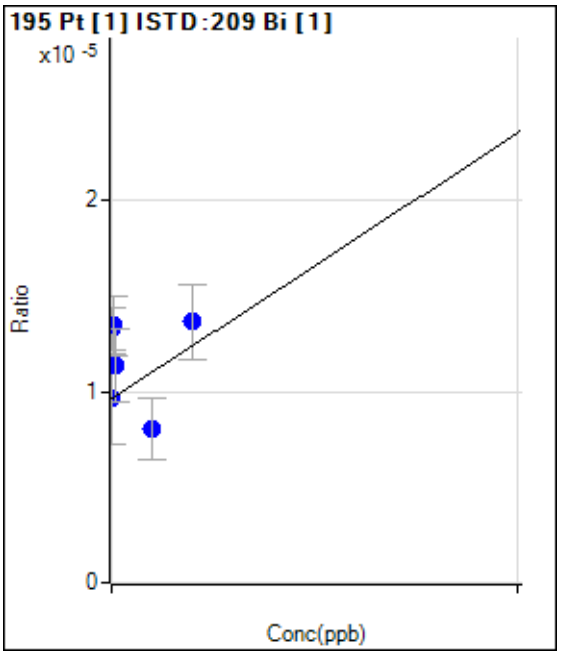
R = 0.9944

DL = 114.2

BEC = 143.9

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21.11	0.0000	P	49.8
2	☐	2.000	260.756	27.78	0.0000	P	16.8
3	☐	5.000	275.674	28.89	0.0000	P	23.1
4	☐	10.000	126.406	24.45	0.0000	P	33.7
5	☐	100.000	-111.424	16.67	0.0000	P	39.2
6	☐	200.000	290.537	27.78	0.0000	P	28.8
7	☐	1.000					

y = 1.3950E-008 * x + 9.6347E-006

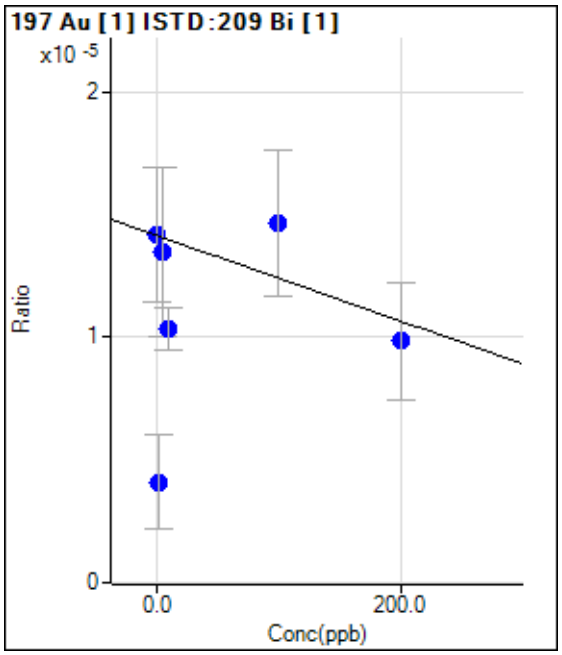
R = 0.0830

DL = 1032

BEC = 690.7

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	31.11	0.0000	P	38.9
2	☐	2.000	575.822	8.89	0.0000	P	94.6
3	☐	5.000	39.067	28.89	0.0000	P	51.4
4	☐	10.000	216.944	22.22	0.0000	P	16.7
5	☐	100.000	-28.694	30.00	0.0000	P	40.3
6	☐	200.000	247.410	20.00	0.0000	P	48.8
7	☐	1.000					

y = −1.7434E−008 * x + 1.4151E−005

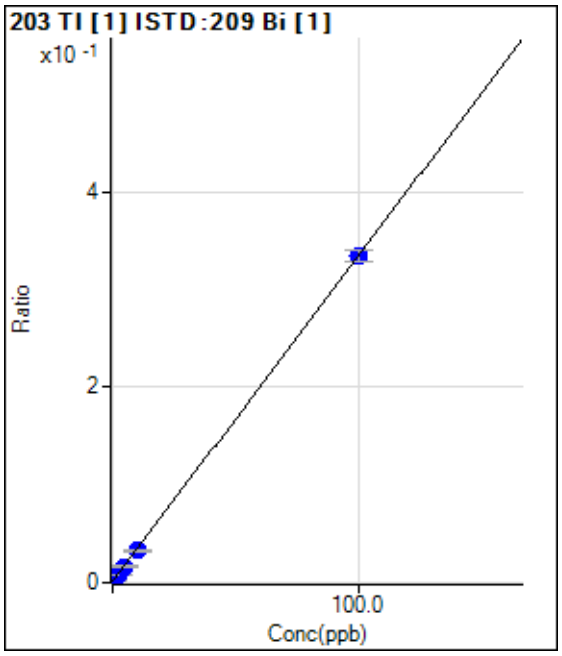
R = 0.0579

DL = −946.6

BEC = −811.7

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2440.60	0.0011	P	11.2
2	☐	2.000	1.835	15189.13	0.0072	P	2.7
3	☐	5.000	4.581	35069.16	0.0164	P	5.2
4	☐	10.000	9.511	70303.88	0.0328	P	5.2
5	☐	100.000	100.073	688543.78	0.3349	P	3.5
6	☐			1354416.60	0.6693	P	4.2
7	☐	1.000					

y = 0.0033 * x + 0.0011

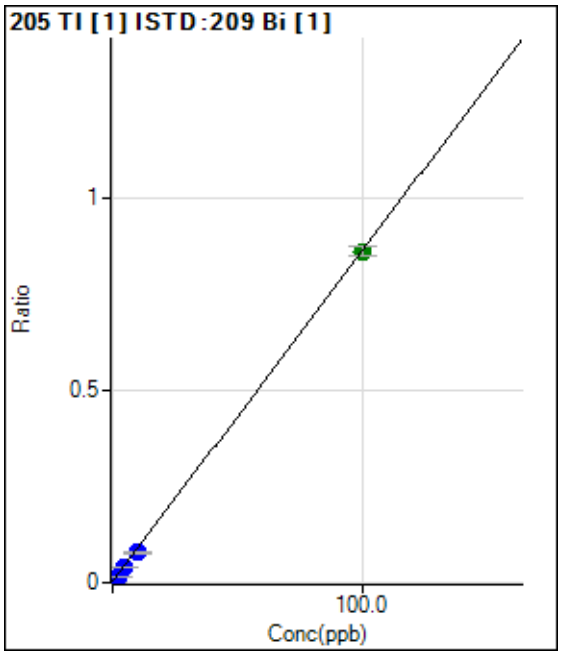
R = 1.0000

DL = 0.111

BEC = 0.3319

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5627.04	0.0026	P	11.5
2	☐	2.000	1.715	36343.65	0.0173	P	2.4
3	☐	5.000	4.220	83081.15	0.0388	P	5.6
4	☐	10.000	8.806	167563.95	0.0783	P	5.5
5	☐	100.000	100.164	1775418.26	0.8636	A	3.1
6	☐			3445022.60	1.7025	A	4.5
7	☐	1.000					

y = 0.0086 * x + 0.0026

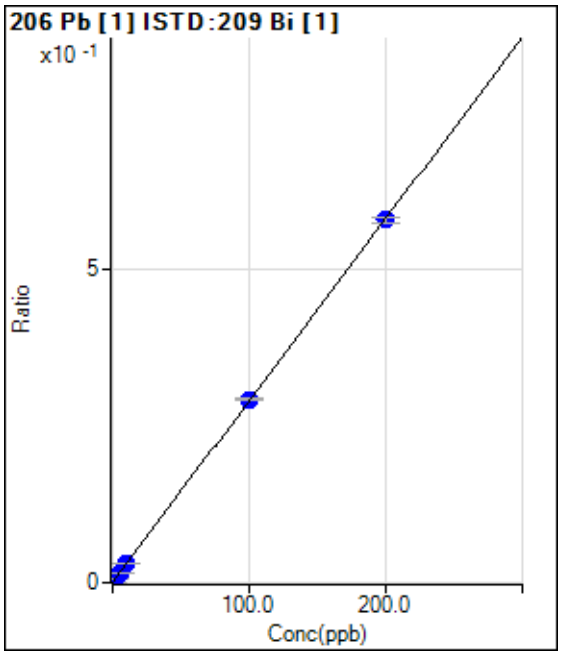
R = 0.9999

DL = 0.1021

BEC = 0.2969

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1047.87	0.0005	P	43.3
2	☐	2.000	2.203	14412.95	0.0069	P	6.2
3	☐	5.000	5.280	33849.57	0.0158	P	1.6
4	☐	10.000	10.801	68229.96	0.0319	P	1.0
5	☐	100.000	100.865	603651.11	0.2936	P	1.4
6	☐	200.000	199.518	1174414.41	0.5802	P	1.9
7	☐	1.000					

y = 0.0029 * x + 4.7125E-004

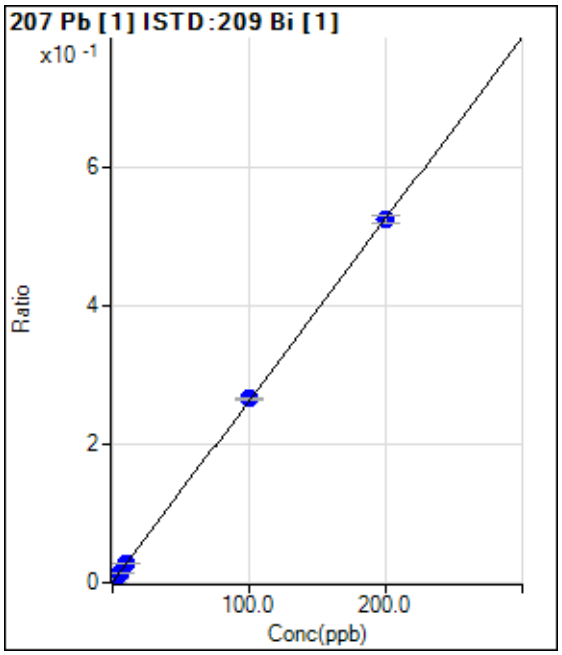
R = 1.0000

DL = 0.2106

BEC = 0.1622

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	836.73	0.0004	P	34.6
2	☐	2.000	2.228	13046.09	0.0062	P	6.0
3	☐	5.000	5.211	30069.31	0.0140	P	0.6
4	☐	10.000	10.739	61151.80	0.0286	P	1.5
5	☐	100.000	100.963	545450.02	0.2653	P	1.9
6	☐	200.000	199.474	1060039.90	0.5237	P	2.2
7	☐	1.000					

y = 0.0026 * x + 3.7676E-004

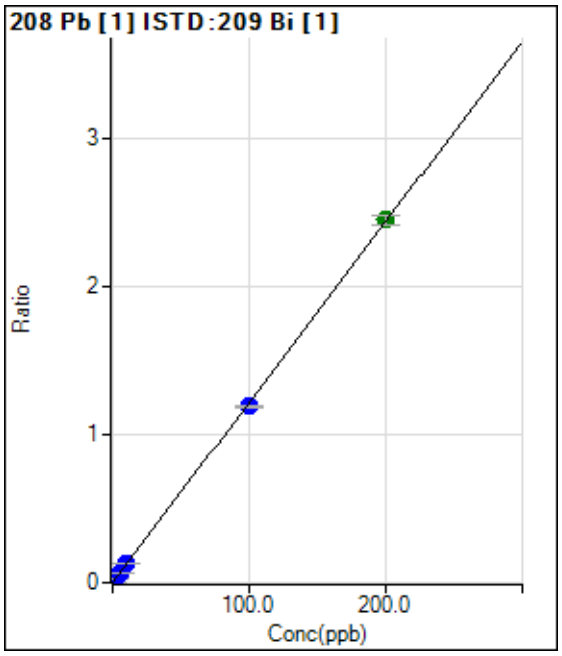
R = 1.0000

DL = 0.1492

BEC = 0.1436

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4054.90	0.0018	P	43.8
2	☐	2.000	2.136	58262.04	0.0278	P	6.6
3	☐	5.000	5.062	135643.78	0.0634	P	1.1
4	☐	10.000	10.413	275065.14	0.1284	P	0.9
5	☐	100.000	97.718	2446745.66	1.1899	P	1.5
6	☐	200.000	201.118	4952844.42	2.4471	A	2.3
7	☐	1.000					

y = 0.0122 * x + 0.0018

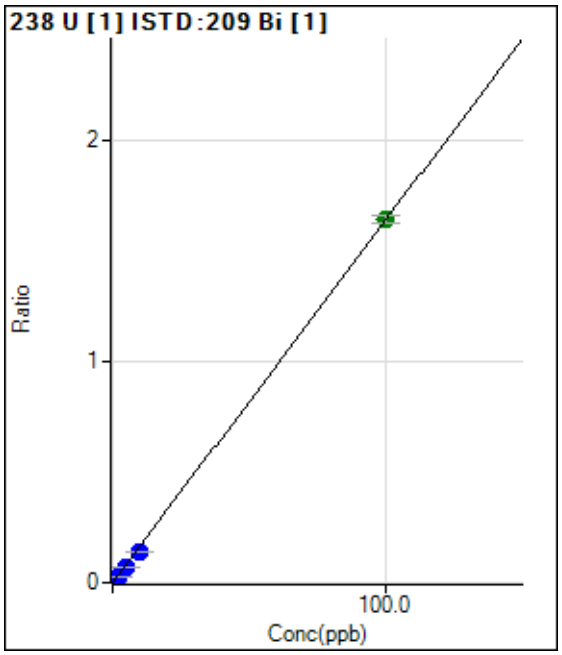
R = 0.9999

DL = 0.1972

BEC = 0.15

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	170.01	0.0001	P	39.3
2	☐	2.000	1.694	58311.97	0.0278	P	4.8
3	☐	5.000	4.137	145091.88	0.0678	P	2.4
4	☐	10.000	8.358	293151.17	0.1369	P	1.8
5	☐	100.000	100.213	3372737.59	1.6404	A	2.2
6	☐			6533740.95	3.2283	A	2.5
7	☐	1.000					

y = 0.0164 * x + 7.6502E-005

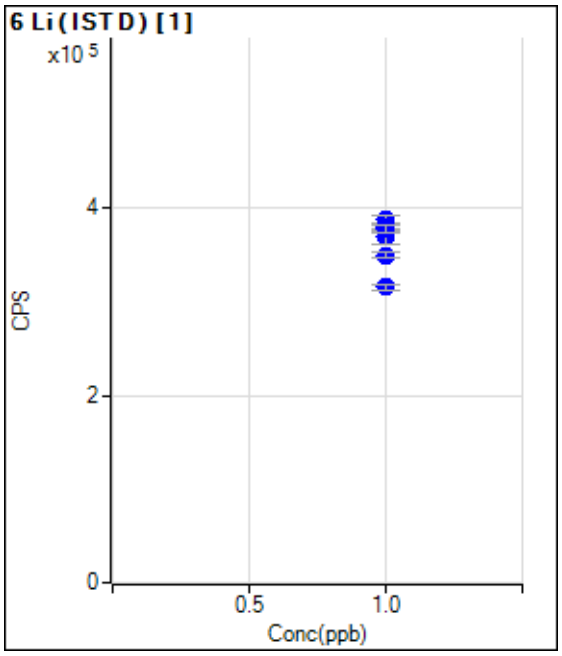
R = 0.9999

DL = 0.00551

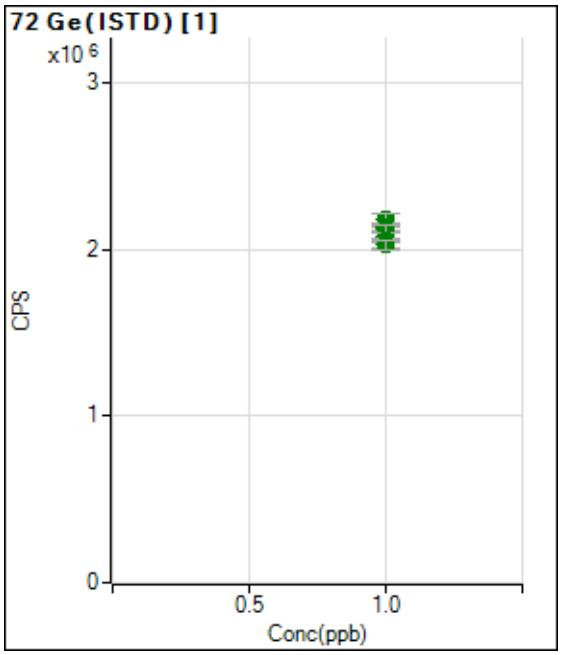
BEC = 0.004674

Weight: None

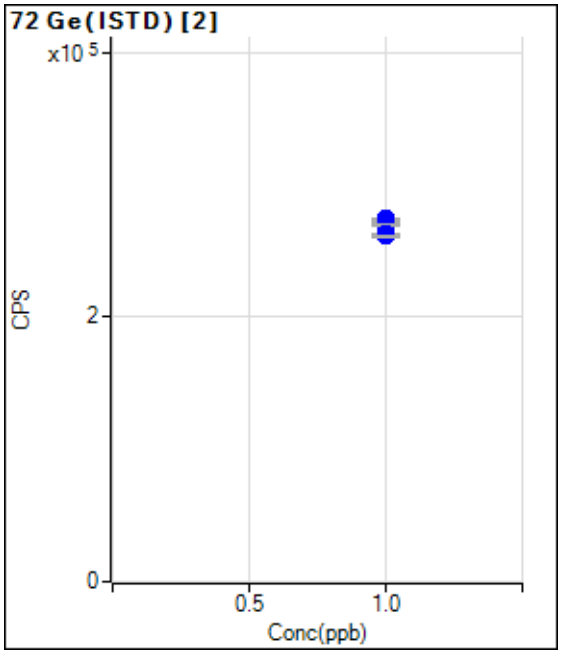
Min Conc: <None>



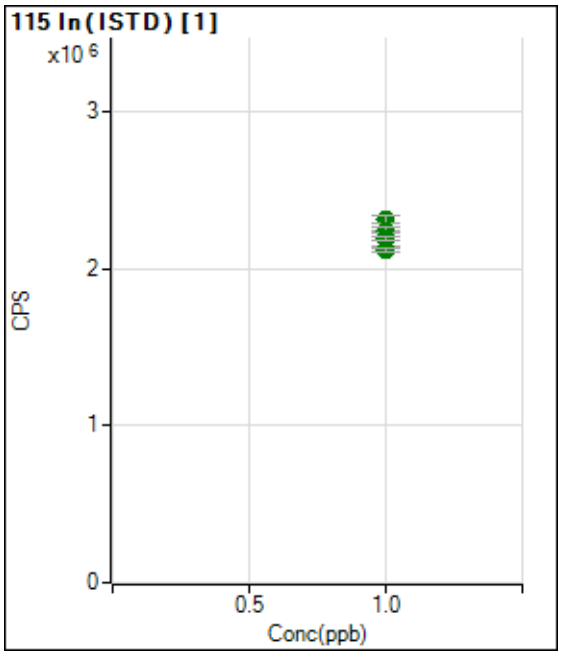
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		387998.94		P	2.2
2	☐	1.000		370654.81		P	4.2
3	☐	1.000		379842.04		P	1.8
4	☐	1.000		378099.84		P	1.8
5	☐	1.000		350486.43		P	1.9
6	☐	1.000		315731.20		P	1.5
7	☐	1.000					



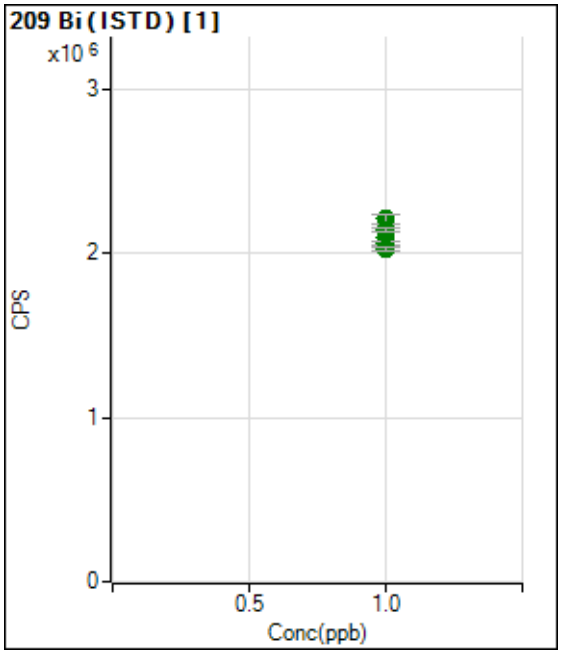
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2178733.94		A	3.3
2	☐	1.000		2077421.91		A	6.1
3	☐	1.000		2135665.42		A	2.0
4	☐	1.000		2124567.70		A	2.4
5	☐	1.000		2056214.36		A	1.5
6	☐	1.000		2027092.58		A	2.4
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		272529.91		P	0.1
2	☐	1.000		274230.33		P	0.1
3	☐	1.000		271299.38		P	0.3
4	☐	1.000		269801.76		P	0.7
5	☐	1.000		262945.38		P	0.5
6	☐	1.000		261039.73		P	0.5
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2313478.25		A	2.2
2	☐	1.000		2193403.15		A	3.9
3	☐	1.000		2228565.84		A	1.7
4	☐	1.000		2248631.62		A	1.7
5	☐	1.000		2190858.39		A	1.3
6	☐	1.000		2122973.32		A	1.5
7	☐	1.000					

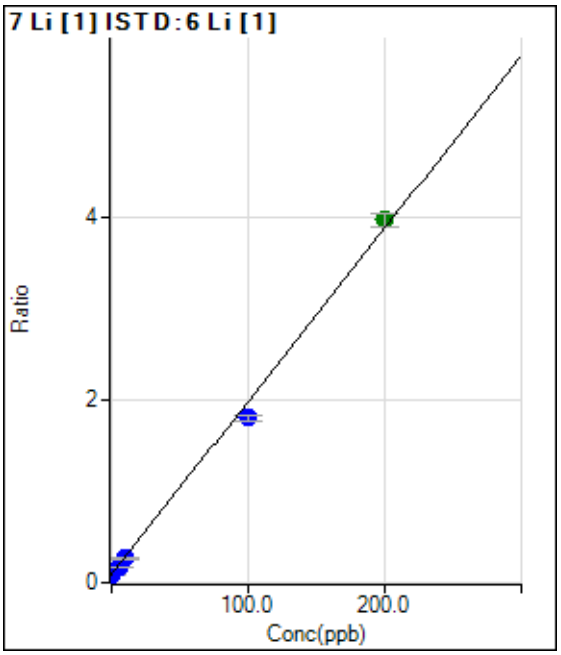


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2208561.60		A	2.4
2	☐	1.000		2101198.85		A	5.2
3	☐	1.000		2140396.05		A	0.8
4	☐	1.000		2141766.63		A	0.6
5	☐	1.000		2056554.80		A	1.7
6	☐	1.000		2024363.46		A	1.4
7	☐	1.000					

Calibration for 114SMPL.D

Batch Folder:	C:¥ICPMH¥1¥DATA¥17D25I00.B¥
Analysis File:	17D25I00.batch.xml
DA Date-Time:	4/25/2017 8:48:47 PM
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	
Tune Step:	#1 042517a5.u
	#2 042517he.u

Level	Standard Data File	Sample Name	Acq. Date-Time
1	108CALB.D	CAL BLK	4/25/2017 8:17:29 PM
2	109CALS.D	2/10/200	4/25/2017 8:22:10 PM
3	110CALS.D	5/25/500	4/25/2017 8:26:55 PM
4	111CALS.D	10/50/1000	4/25/2017 8:31:41 PM
5	112CALS.D	100/500/10K	4/25/2017 8:36:29 PM
6	113CALS.D	200/1000/20K	4/25/2017 8:41:09 PM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27559.02	0.0933	P	1.0
2	☐	2.000	1.803	38442.71	0.1275	P	2.1
3	☐	5.000	4.408	51658.07	0.1768	P	1.4
4	☐	10.000	8.987	76431.08	0.2636	P	1.5
5	☐	100.000	90.225	489109.46	1.8036	P	3.0
6	☐	200.000	204.955	963225.24	3.9785	A	3.6
7	☐	1.000					

y = 0.0190 * x + 0.0933

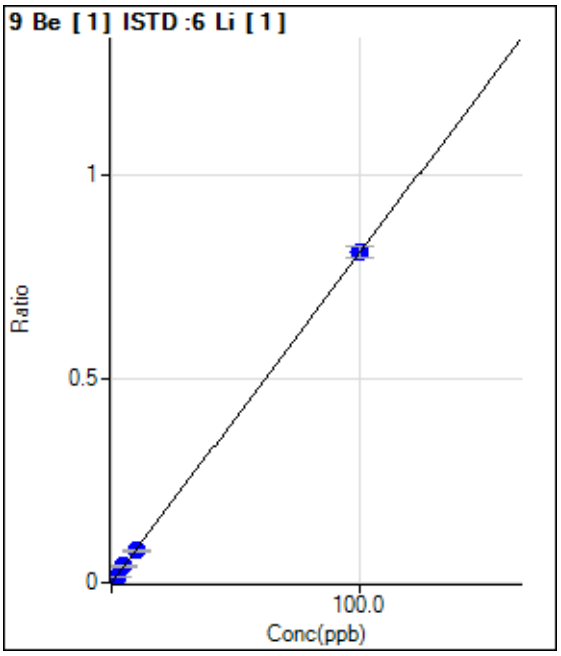
R = 0.9984

DL = 0.1454

BEC = 4.92

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	81.11	0.0003	P	21.7
2	☐	2.000	1.958	4860.86	0.0161	P	3.0
3	☐	5.000	4.945	11777.68	0.0403	P	1.8
4	☐	10.000	9.723	22895.52	0.0790	P	4.2
5	☐	100.000	100.031	219703.10	0.8102	P	3.6
6	☐			432272.77	1.7852	P	1.8
7	☐	1.000					

y = 0.0081 * x + 2.7478E-004

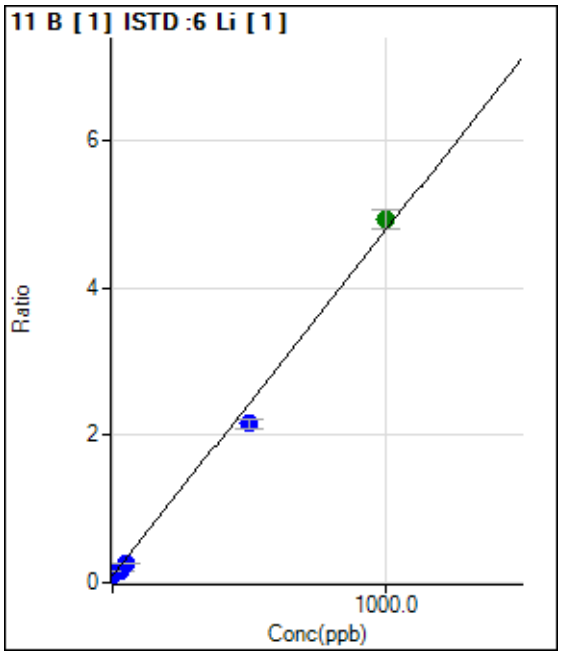
R = 1.0000

DL = 0.02212

BEC = 0.03394

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27296.28	0.0925	P	7.9
2	☐	10.000	5.450	35528.49	0.1180	P	3.5
3	☐	25.000	15.654	48443.64	0.1658	P	3.4
4	☐	50.000	36.728	76626.04	0.2645	P	6.3
5	☐	500.000	439.839	583418.26	2.1524	P	6.1
6	☐	1000.000	1031.023	1191313.58	4.9210	A	5.5
7	☐	5.000					

y = 0.0047 * x + 0.0925

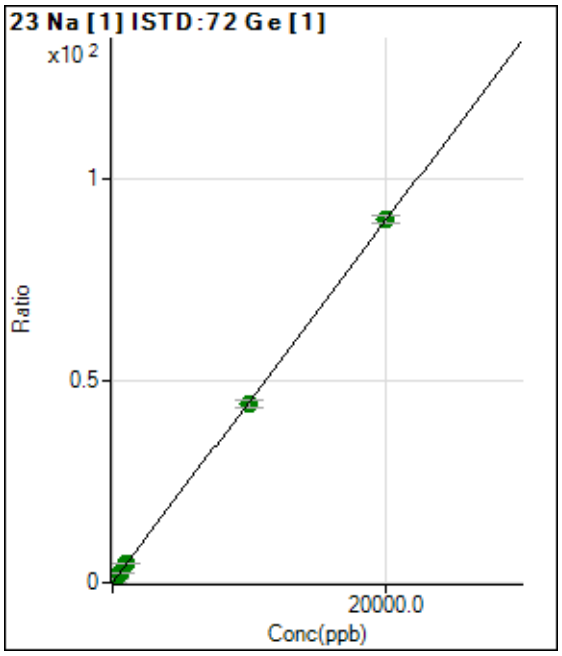
R = 0.9977

DL = 4.665

BEC = 19.75

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	114253.04	0.0562	P	7.2
2	☐	200.000	215.623	2115792.81	1.0216	A	1.5
3	☐	500.000	521.873	4841774.79	2.3928	A	1.1
4	☐	1000.000	1047.859	9835338.33	4.7478	A	2.8
5	☐	10000.00	9865.397	90934785.31	44.2264	A	3.7
6	☐	20000.00	20064.20	177422801.8	89.8895	A	1.9
7	☐	100.000					

y = 0.0045 * x + 0.0562

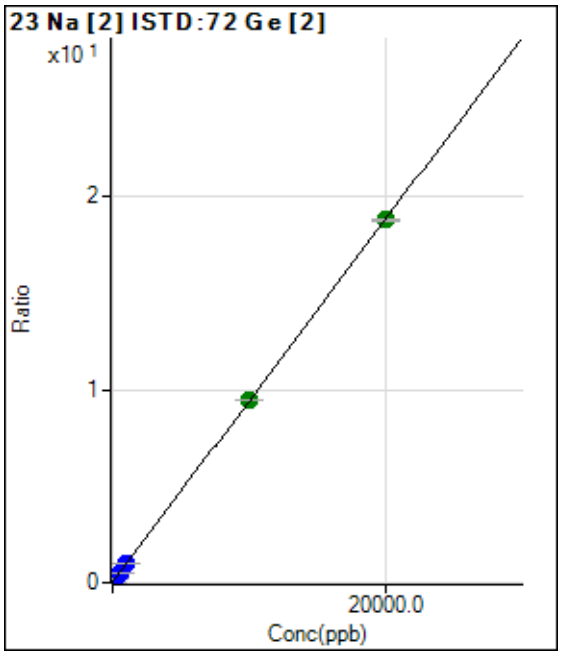
R = 1.0000

DL = 2.715

BEC = 12.55

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4086.23	0.0164	P	1.2
2	☐	200.000	205.218	51940.81	0.2095	P	1.6
3	☐	500.000	518.114	124570.47	0.5040	P	1.1
4	☐	1000.000	1047.673	246786.85	1.0023	P	0.4
5	☐	10000.00	10062.48	2326244.27	9.4858	A	0.7
6	☐	20000.00	19965.86	4530796.81	18.8056	A	0.6
7	☐	100.000					

y = 9.4107E−004 * x + 0.0164

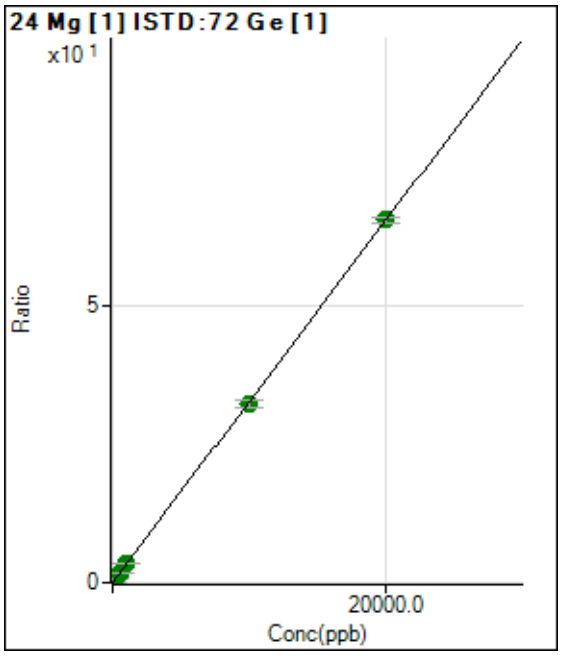
R = 1.0000

DL = 0.6101

BEC = 17.39

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40819.23	0.0200	P	25.0
2	☐	200.000	217.920	1519116.59	0.7336	A	0.9
3	☐	500.000	527.649	3536256.61	1.7477	A	1.7
4	☐	1000.000	1051.960	7177424.54	3.4644	A	2.2
5	☐	10000.00	9892.230	66637487.34	32.4096	A	3.7
6	☐	20000.00	20050.41	129615638.0	65.6700	A	1.8
7	☐	100.000					

y = 0.0033 * x + 0.0200

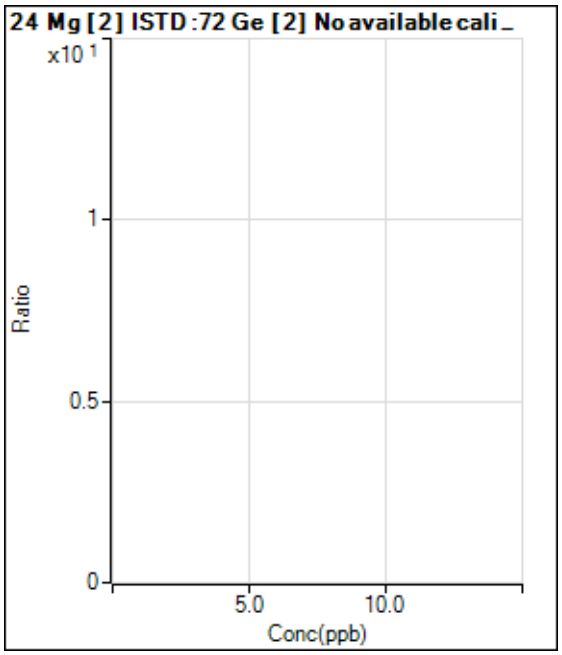
R = 1.0000

DL = 4.591

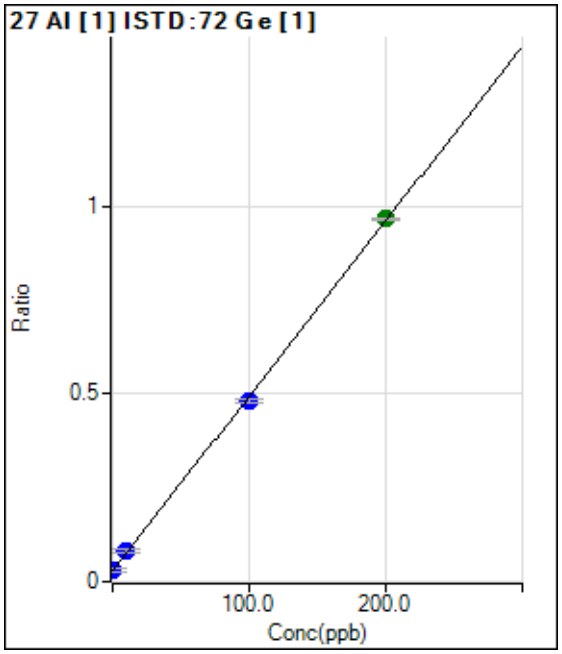
BEC = 6.117

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.00					
6	☐	20000.00					
7	☐	100.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.339	61079.05	0.0299	P	30.0
2	☐			103706.87	0.0499	P	22.8
3	☐			127803.96	0.0631	P	13.6
4	☐	10.000	11.112	166386.36	0.0801	P	11.0
5	☐	100.000	97.209	989749.63	0.4812	P	1.3
6	☐	200.000	201.340	1907184.87	0.9662	A	0.8
7	☐	1.000					

y = 0.0047 * x + 0.0284

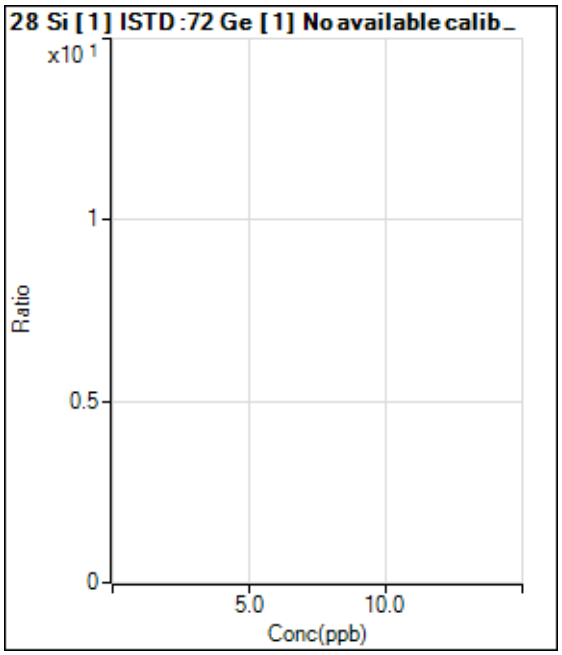
R = 0.9998

DL = 5.778

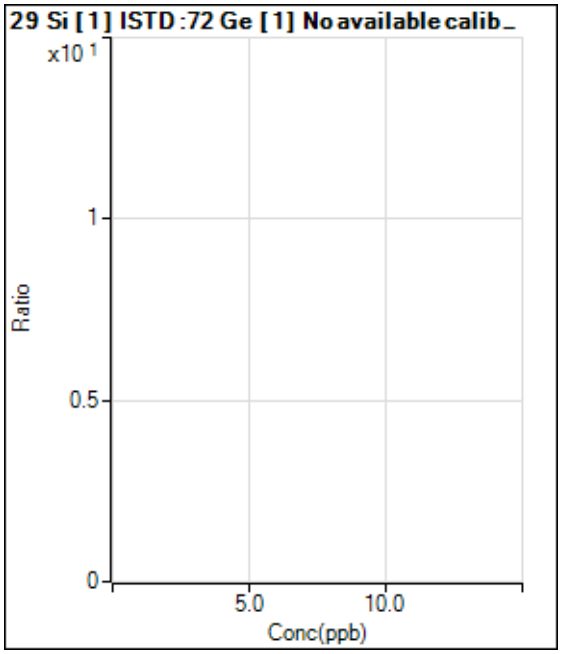
BEC = 6.09

Weight: None

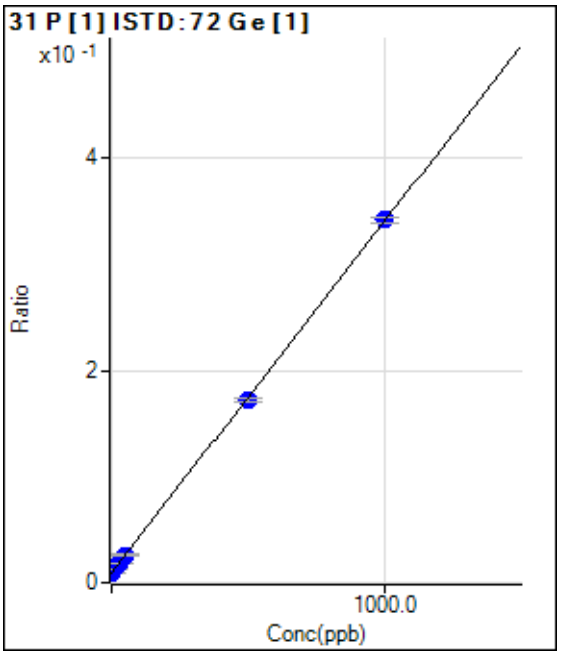
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18881.97	0.0093	P	1.5
2	☐	10.000	10.860	26692.30	0.0129	P	1.9
3	☐	25.000	25.676	36012.31	0.0178	P	0.5
4	☐	50.000	50.575	53942.69	0.0260	P	2.5
5	☐	500.000	491.944	354035.56	0.1722	P	3.0
6	☐	1000.000	1003.974	674421.99	0.3417	P	1.8
7	☐	5.000					

y = 3.3108E−004 * x + 0.0093

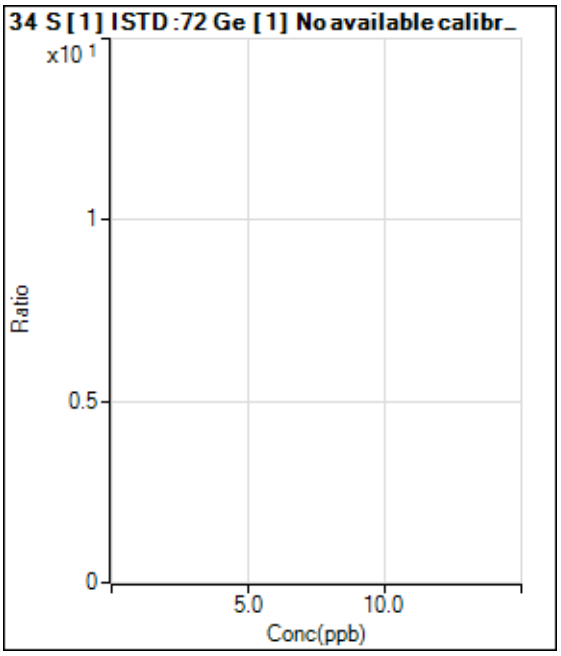
R = 1.0000

DL = 1.274

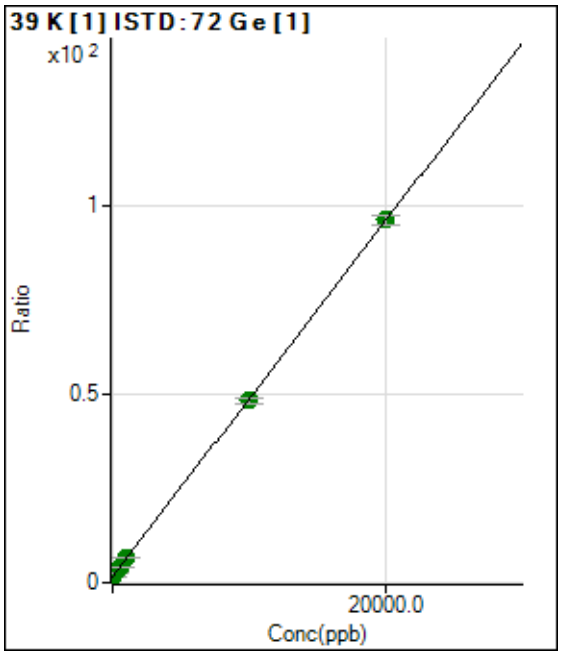
BEC = 28.07

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.00					
6	☐	40000.00					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3282976.31	1.6167	A	1.8
2	☐	200.000	218.057	5479540.61	2.6464	A	0.2
3	☐	500.000	521.292	8252533.35	4.0782	A	0.9
4	☐	1000.000	1051.436	13632987.44	6.5815	A	3.2
5	☐	10000.00	9884.939	99297886.30	48.2930	A	3.6
6	☐	20000.00	20054.24	190092332.7	96.3122	A	2.6
7	☐	100.000					

y = 0.0047 * x + 1.6167

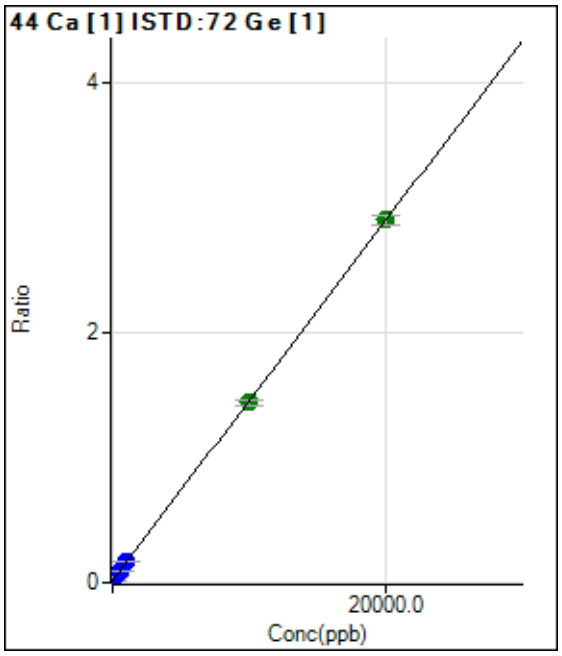
R = 1.0000

DL = 18.07

BEC = 342.4

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34638.29	0.0170	P	10.2
2	☐	200.000	230.985	104149.78	0.0503	P	4.8
3	☐	500.000	530.365	188952.95	0.0933	P	2.3
4	☐	1000.000	1048.665	347887.14	0.1679	P	2.5
5	☐	10000.00	9889.391	2960905.51	1.4401	A	3.7
6	☐	20000.00	20051.80	5728550.96	2.9024	A	2.4
7	☐	100.000					

y = 1.4390E-004 * x + 0.0170

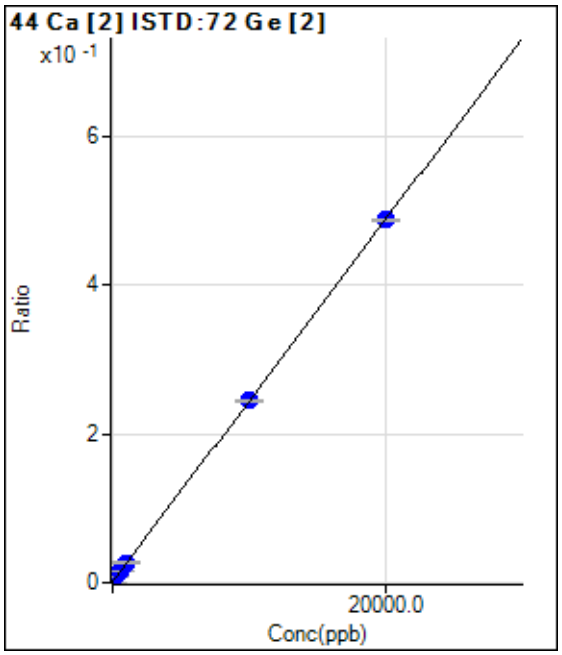
R = 1.0000

DL = 36.25

BEC = 118.4

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	260.01	0.0010	P	16.5
2	☐	200.000	239.922	1705.72	0.0069	P	6.7
3	☐	500.000	560.573	3629.44	0.0147	P	6.0
4	☐	1000.000	1061.601	6617.11	0.0269	P	4.5
5	☐	10000.00	10008.51	59988.17	0.2446	P	0.6
6	☐	20000.00	19990.74	117464.92	0.4876	P	0.5
7	☐	100.000					

y = 2.4337E-005 * x + 0.0010

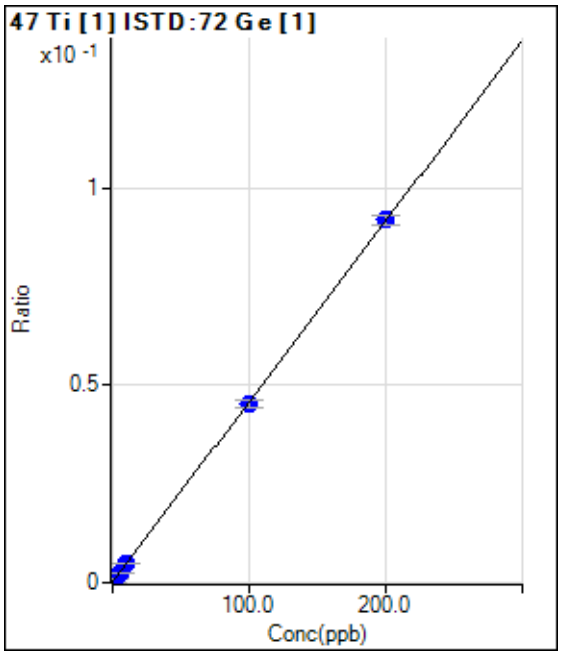
R = 1.0000

DL = 21.23

BEC = 42.79

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	166.68	0.0001	P	29.7
2	☐	2.000	2.190	2244.77	0.0011	P	6.5
3	☐	5.000	5.144	4925.34	0.0024	P	1.4
4	☐	10.000	10.398	10017.77	0.0048	P	3.9
5	☐	100.000	98.511	92784.72	0.0451	P	4.2
6	☐	200.000	200.719	181327.10	0.0919	P	2.4
7	☐	1.000					

y = 4.5729E-004 * x + 8.2066E-005

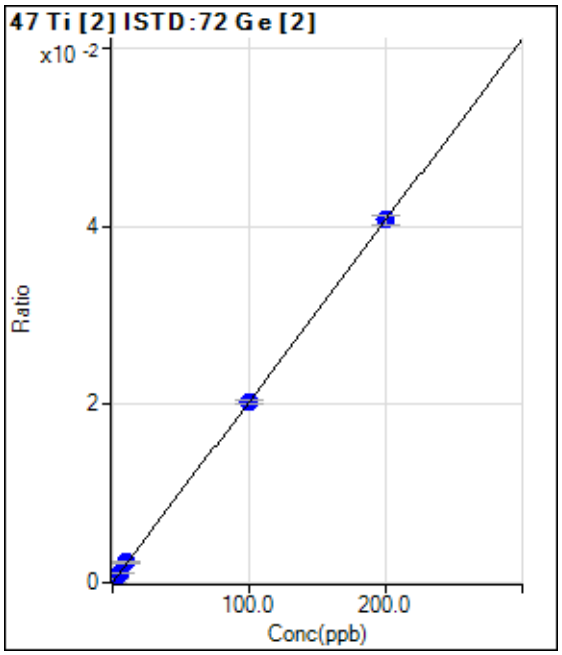
R = 1.0000

DL = 0.16

BEC = 0.1795

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2.22	0.0000	P	173.
2	☐	2.000	1.653	85.56	0.0003	P	9.7
3	☐	5.000	5.129	260.01	0.0011	P	11.0
4	☐	10.000	11.585	582.26	0.0024	P	8.9
5	☐	100.000	99.289	4953.16	0.0202	P	2.1
6	☐	200.000	200.277	9813.26	0.0407	P	2.4
7	☐	1.000					

y = 2.0333E-004 * x + 8.9189E-006

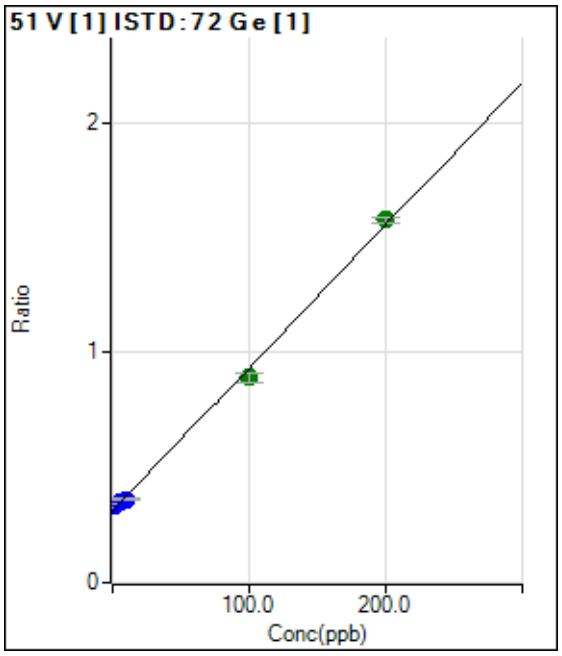
R = 1.0000

DL = 0.2279

BEC = 0.04386

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	3.375	677014.84	0.3332	P	3.4
2	☐	2.000	2.969	685126.33	0.3306	P	5.2
3	☐	5.000	6.001	707557.34	0.3495	P	4.3
4	☐	10.000	7.951	749623.22	0.3616	P	1.6
5	☐	100.000	93.273	1833356.11	0.8918	A	4.3
6	☐	200.000	203.431	3111107.79	1.5762	A	1.5
7	☐	1.000					

y = 0.0062 * x + 0.3122

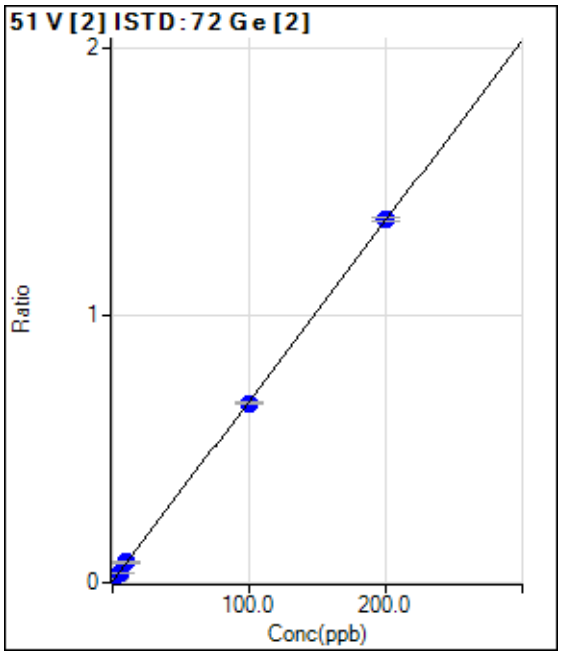
R = 0.9989

DL = 5.389

BEC = 50.24

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.033	1121.20	0.0045	P	8.1
2	☐	2.000	1.974	4469.68	0.0180	P	4.9
3	☐	5.000	5.081	9638.62	0.0390	P	0.7
4	☐	10.000	10.531	18654.14	0.0758	P	1.3
5	☐	100.000	98.952	164876.66	0.6723	P	0.8
6	☐	200.000	200.496	327041.81	1.3574	P	1.2
7	☐	1.000					

y = 0.0067 * x + 0.0047

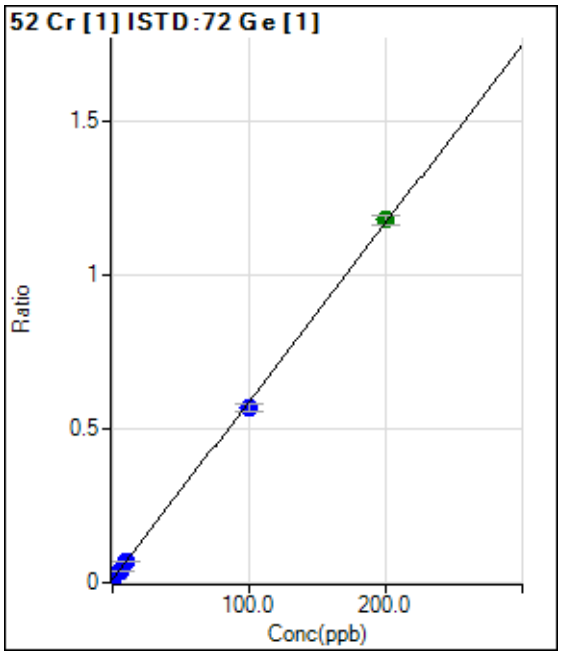
R = 1.0000

DL = 0.1617

BEC = 0.6984

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21271.80	0.0105	P	5.5
2	☐	2.000	2.020	45872.03	0.0221	P	1.4
3	☐	5.000	5.035	80124.22	0.0396	P	1.1
4	☐	10.000	10.096	142674.88	0.0689	P	2.2
5	☐	100.000	96.353	1167470.45	0.5678	P	3.8
6	☐	200.000	201.818	2324776.30	1.1779	A	2.4
7	☐	1.000					

y = 0.0058 * x + 0.0105

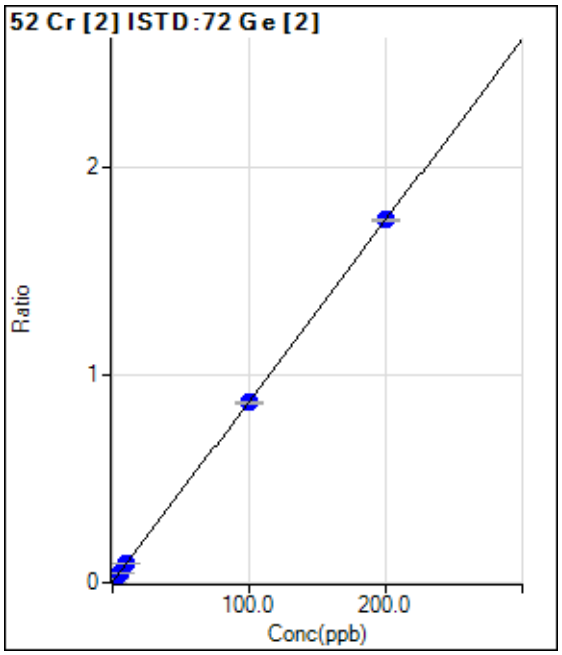
R = 0.9998

DL = 0.3006

BEC = 1.809

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	455.59	0.0018	P	14.3
2	☐	2.000	2.099	4982.06	0.0201	P	6.8
3	☐	5.000	5.255	11757.82	0.0476	P	1.8
4	☐	10.000	10.541	23042.89	0.0936	P	1.4
5	☐	100.000	99.450	212743.04	0.8675	P	1.1
6	☐	200.000	200.241	420387.14	1.7449	P	0.3
7	☐	1.000					

y = 0.0087 * x + 0.0018

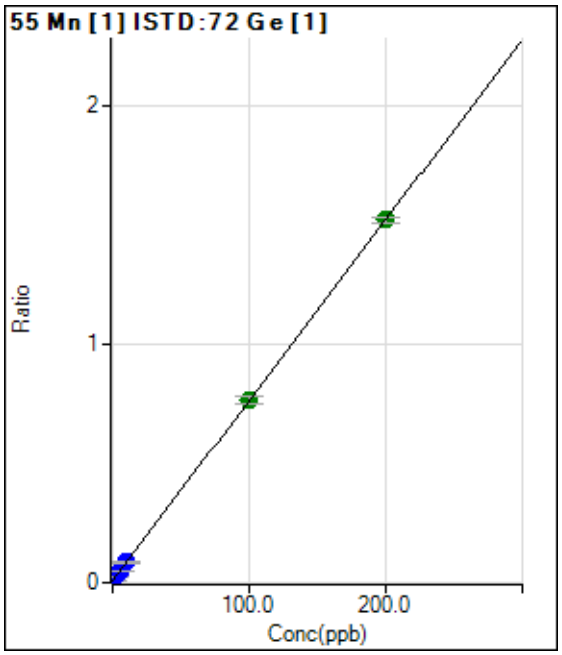
R = 1.0000

DL = 0.09003

BEC = 0.2097

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16493.00	0.0081	P	6.9
2	☐	2.000	2.095	49691.62	0.0240	P	4.2
3	☐	5.000	5.047	93800.32	0.0463	P	1.1
4	☐	10.000	10.182	176597.89	0.0852	P	1.7
5	☐	100.000	99.881	1572248.10	0.7647	A	3.8
6	☐	200.000	200.048	3006836.31	1.5234	A	1.8
7	☐	1.000					

y = 0.0076 * x + 0.0081

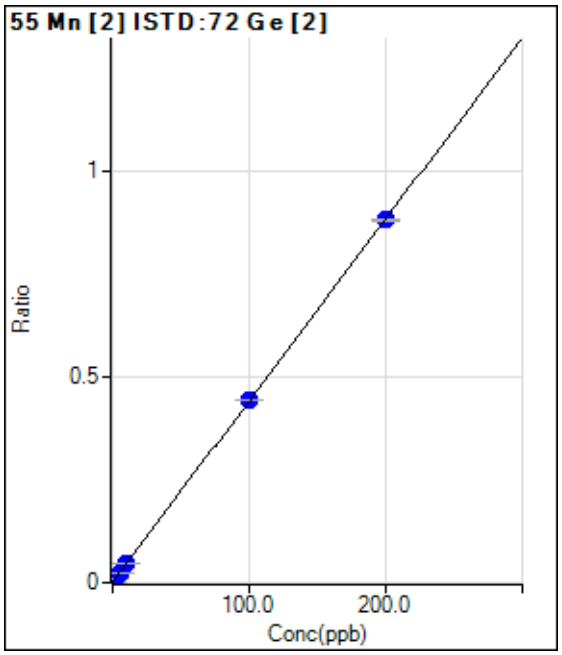
R = 1.0000

DL = 0.2229

BEC = 1.071

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	235.57	0.0009	P	5.6
2	☐	2.000	2.119	2552.53	0.0103	P	2.1
3	☐	5.000	5.348	6068.02	0.0245	P	3.7
4	☐	10.000	10.696	11855.73	0.0482	P	1.8
5	☐	100.000	100.610	109129.85	0.4450	P	0.3
6	☐	200.000	199.650	212528.80	0.8821	P	0.7
7	☐	1.000					

y = 0.0044 * x + 9.4382E-004

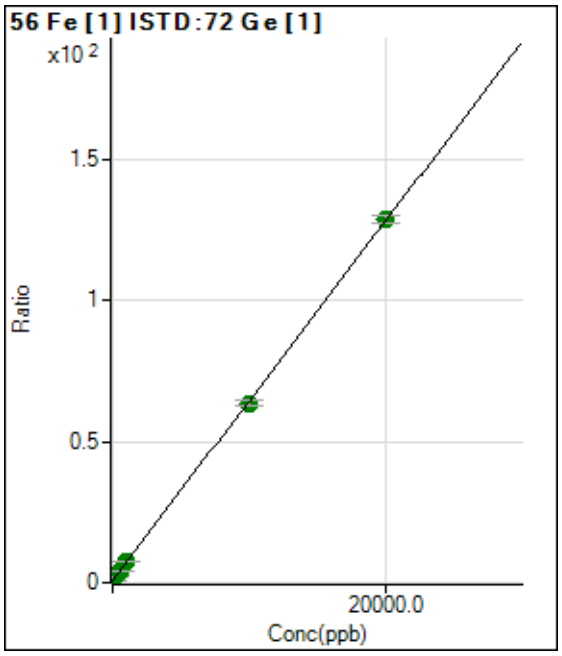
R = 1.0000

DL = 0.03571

BEC = 0.2138

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1609593.13	0.7925	A	0.6
2	☐	200.000	213.597	4461190.66	2.1544	A	0.5
3	☐	500.000	517.215	8277681.96	4.0901	A	0.7
4	☐	1000.000	1043.804	15427611.44	7.4475	A	2.9
5	☐	10000.00	9859.755	130889542.4	63.6556	A	3.4
6	☐	20000.00	20067.36	254093876.2	128.736	A	2.2
7	☐	100.000					

y = 0.0064 * x + 0.7925

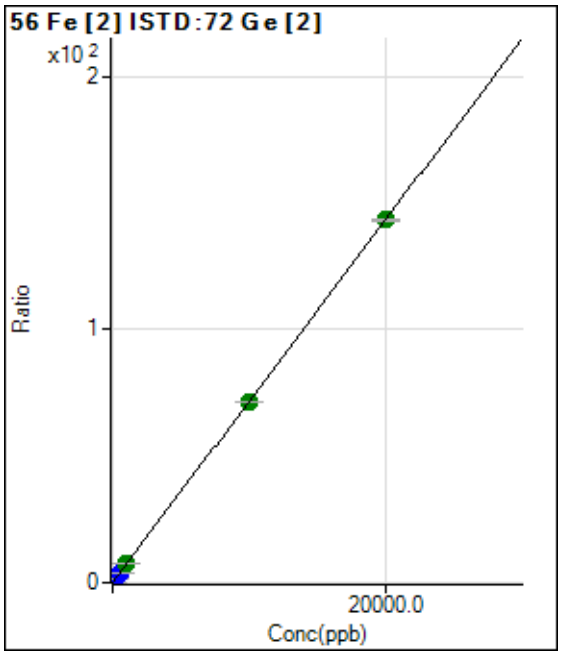
R = 1.0000

DL = 2.216

BEC = 124.3

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11551.06	0.0463	P	1.6
2	☐	200.000	207.403	379507.70	1.5307	P	0.5
3	☐	500.000	516.491	925188.90	3.7428	P	0.6
4	☐	1000.000	1088.016	1928729.17	7.8333	A	0.5
5	☐	10000.00	9986.486	17539165.85	71.5200	A	0.3
6	☐	20000.00	20001.87	34501114.76	143.200	A	0.6
7	☐	100.000					

y = 0.0072 * x + 0.0463

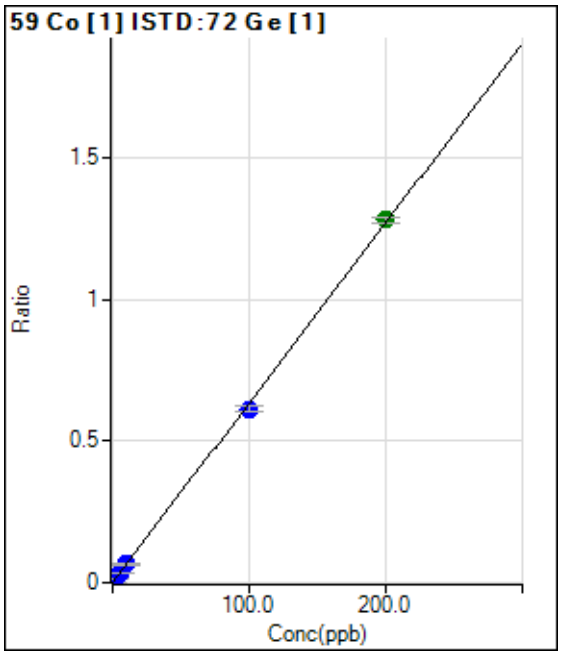
R = 1.0000

DL = 0.3131

BEC = 6.466

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	380.02	0.0002	P	12.3
2	☐	2.000	2.078	27741.12	0.0134	P	1.4
3	☐	5.000	5.105	66036.75	0.0326	P	1.7
4	☐	10.000	10.285	135785.44	0.0656	P	4.6
5	☐	100.000	96.296	1259093.46	0.6123	P	3.3
6	☐	200.000	201.834	2532750.92	1.2832	A	1.6
7	☐	1.000					

y = 0.0064 * x + 1.8679E-004

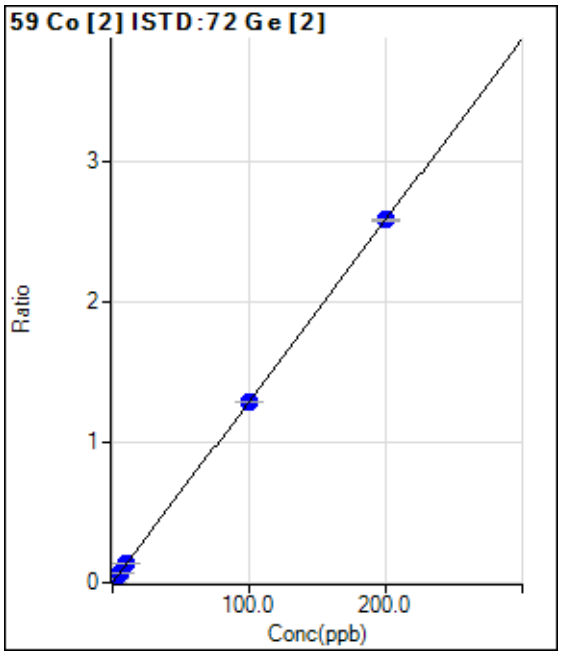
R = 0.9998

DL = 0.01081

BEC = 0.02938

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38.89	0.0002	P	21.9
2	☐	2.000	2.063	6642.70	0.0268	P	3.5
3	☐	5.000	5.246	16783.31	0.0679	P	1.9
4	☐	10.000	10.728	34146.23	0.1387	P	0.2
5	☐	100.000	99.717	315789.50	1.2877	P	0.7
6	☐	200.000	200.098	622518.18	2.5838	P	0.6
7	☐	1.000					

y = 0.0129 * x + 1.5590E-004

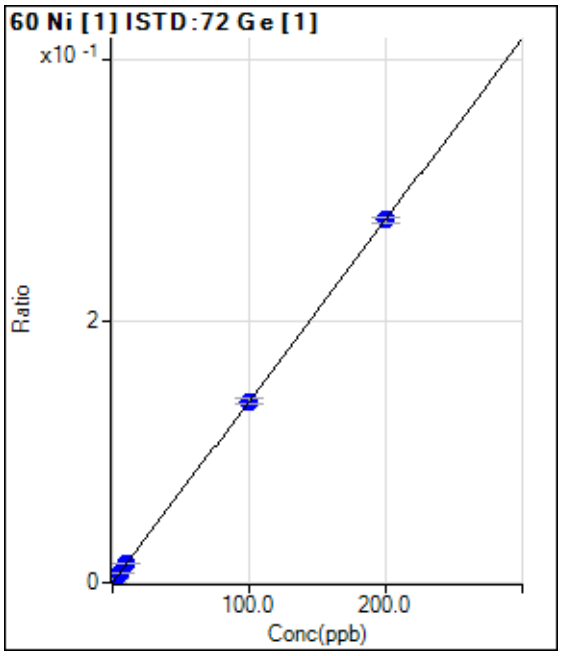
R = 1.0000

DL = 0.007944

BEC = 0.01207

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	168.90	0.0001	P	7.7
2	☐	2.000	2.163	6389.27	0.0031	P	1.6
3	☐	5.000	5.360	15220.66	0.0075	P	5.3
4	☐	10.000	10.541	30480.20	0.0147	P	4.0
5	☐	100.000	99.901	285321.96	0.1388	P	3.7
6	☐	200.000	200.012	548211.64	0.2777	P	1.6
7	☐	1.000					

y = 0.0014 * x + 8.3151E-005

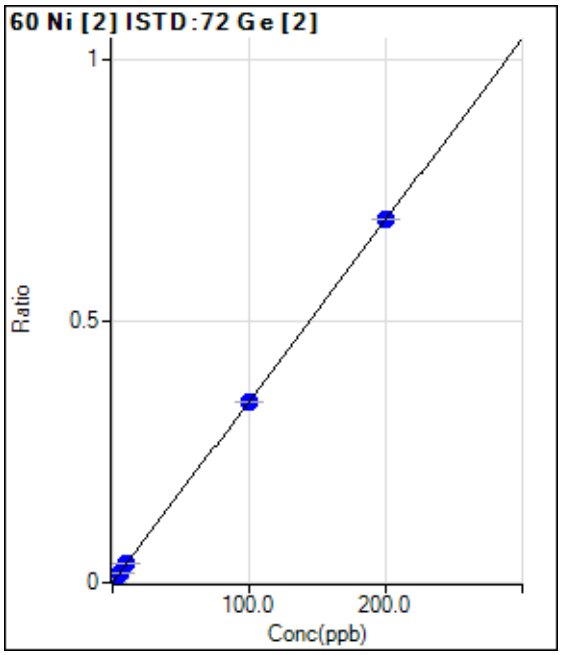
R = 1.0000

DL = 0.01381

BEC = 0.0599

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	51.11	0.0002	P	38.9
2	☐	2.000	1.995	1766.84	0.0071	P	4.6
3	☐	5.000	5.188	4499.70	0.0182	P	2.8
4	☐	10.000	10.886	9348.49	0.0380	P	1.0
5	☐	100.000	99.804	84955.95	0.3464	P	0.5
6	☐	200.000	200.049	167247.18	0.6942	P	0.1
7	☐	1.000					

y = 0.0035 * x + 2.0460E-004

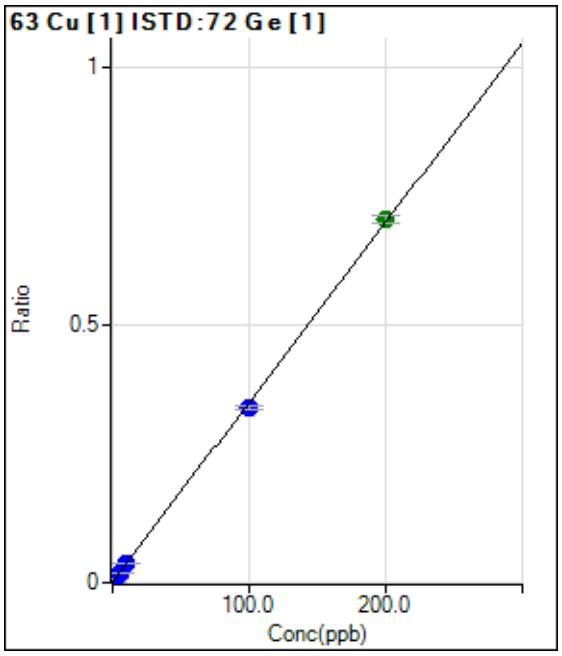
R = 1.0000

DL = 0.06888

BEC = 0.05898

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3321.59	0.0016	P	11.0
2	☐	2.000	2.039	18123.57	0.0088	P	3.0
3	☐	5.000	5.058	39039.98	0.0193	P	1.6
4	☐	10.000	10.198	77139.55	0.0372	P	3.0
5	☐	100.000	96.978	699610.20	0.3402	P	2.9
6	☐	200.000	201.499	1391693.07	0.7051	A	2.2
7	☐	1.000					

y = 0.0035 * x + 0.0016

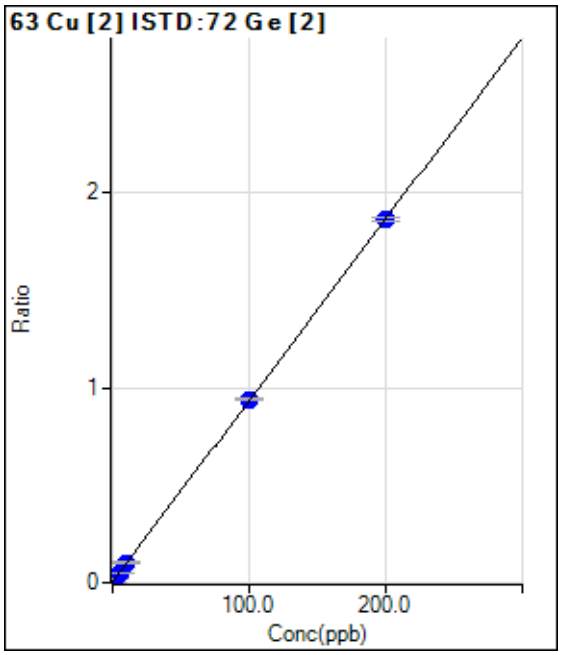
R = 0.9998

DL = 0.1538

BEC = 0.4677

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	966.74	0.0039	P	1.4
2	☐	2.000	2.071	5734.56	0.0231	P	2.3
3	☐	5.000	5.132	12751.94	0.0516	P	1.4
4	☐	10.000	10.705	25458.85	0.1034	P	0.9
5	☐	100.000	100.662	230468.76	0.9398	P	0.8
6	☐	200.000	199.630	448116.80	1.8600	P	1.0
7	☐	1.000					

y = 0.0093 * x + 0.0039

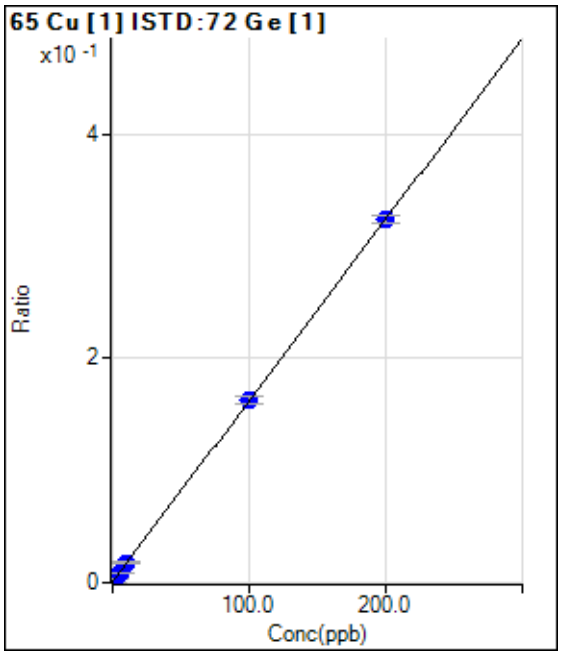
R = 1.0000

DL = 0.01736

BEC = 0.4166

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1574.59	0.0008	P	11.6
2	☐	2.000	2.102	8629.21	0.0042	P	1.5
3	☐	5.000	5.284	18829.95	0.0093	P	0.2
4	☐	10.000	10.580	36986.69	0.0179	P	2.1
5	☐	100.000	100.318	334572.28	0.1627	P	3.4
6	☐	200.000	199.804	638120.25	0.3233	P	2.0
7	☐	1.000					

y = 0.0016 * x + 7.7412E-004

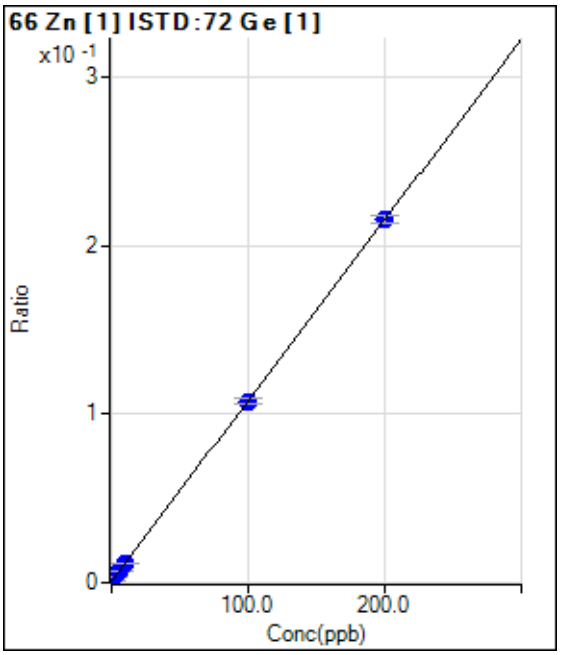
R = 1.0000

DL = 0.1673

BEC = 0.4796

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.210	1255.66	0.0006	P	4.5
2	☐	2.000	1.936	6040.22	0.0029	P	2.8
3	☐	5.000	5.237	13055.52	0.0065	P	1.9
4	☐	10.000	10.145	24243.68	0.0117	P	4.4
5	☐	100.000	99.811	221507.07	0.1077	P	2.9
6	☐	200.000	200.082	424512.15	0.2151	P	2.1
7	☐	1.000					

y = 0.0011 * x + 8.4311E-004

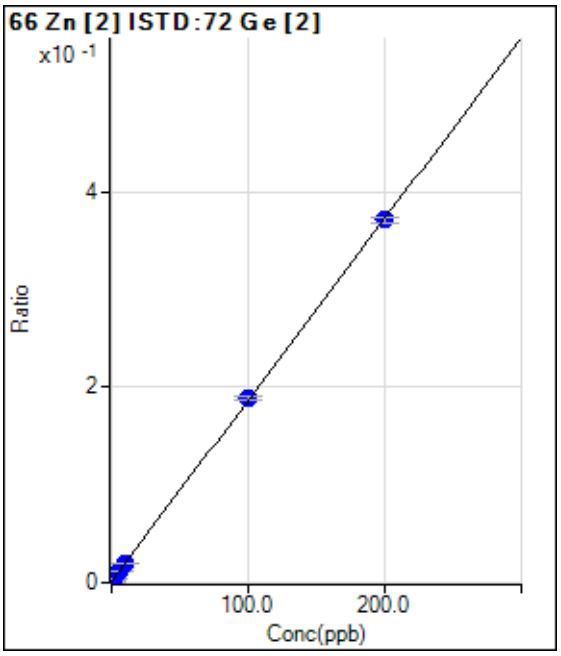
R = 1.0000

DL = 0.07793

BEC = 0.7874

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.284	226.68	0.0009	P	18.8
2	☐	2.000	1.747	1157.87	0.0047	P	5.6
3	☐	5.000	5.222	2744.79	0.0111	P	4.7
4	☐	10.000	9.828	4834.25	0.0196	P	1.5
5	☐	100.000	100.963	46199.31	0.1884	P	1.9
6	☐	200.000	199.524	89359.16	0.3709	P	1.4
7	☐	1.000					

y = 0.0019 * x + 0.0014

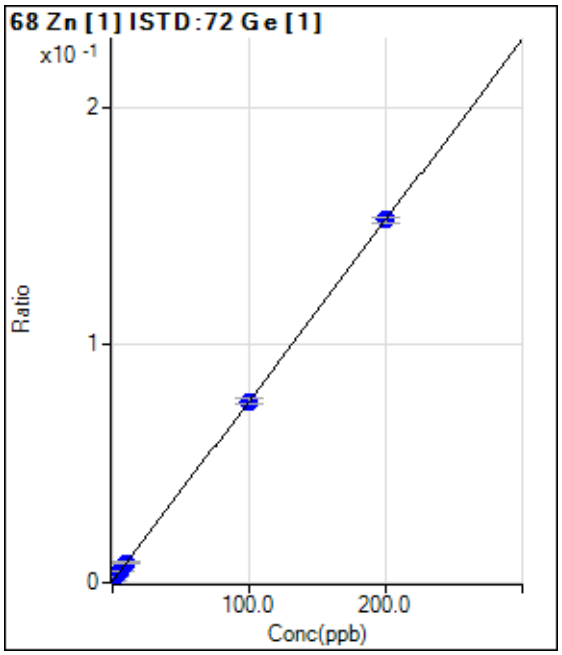
R = 1.0000

DL = 0.2759

BEC = 0.7748

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	962.29	0.0005	P	21.6
2	☐	2.000	2.192	4436.34	0.0021	P	9.3
3	☐	5.000	5.530	9473.04	0.0047	P	1.4
4	☐	10.000	10.503	17535.23	0.0085	P	2.7
5	☐	100.000	99.688	156949.53	0.0763	P	3.3
6	☐	200.000	200.116	301482.34	0.1527	P	1.3
7	☐	1.000					

y = 7.6093E−004 * x + 4.7238E−004

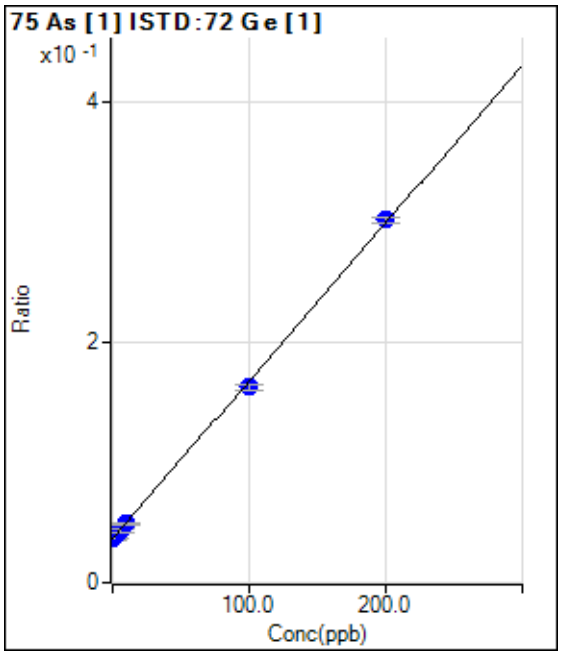
R = 1.0000

DL = 0.4021

BEC = 0.6208

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	74443.74	0.0366	P	4.4
2	☐	2.000	1.566	80177.34	0.0387	P	6.6
3	☐	5.000	4.942	87311.28	0.0431	P	4.9
4	☐	10.000	9.712	102399.70	0.0494	P	2.4
5	☐	100.000	96.141	335065.90	0.1629	P	2.7
6	☐	200.000	201.950	595945.24	0.3019	P	1.4
7	☐	1.000					

y = 0.0013 * x + 0.0366

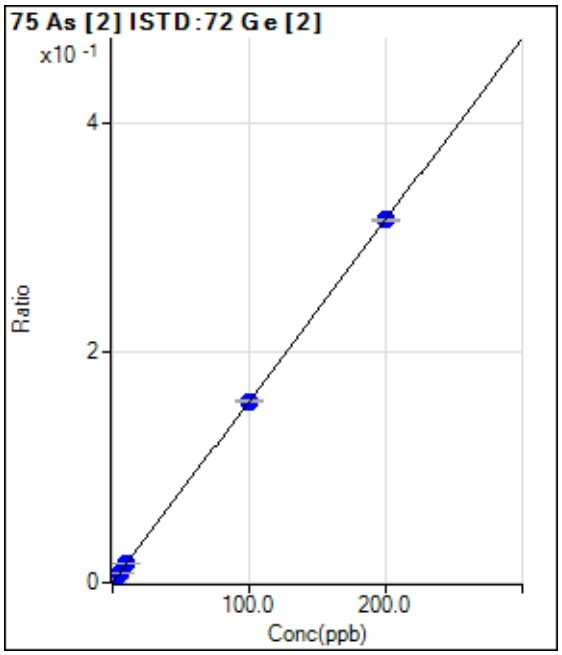
R = 0.9997

DL = 3.641

BEC = 27.88

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36.30	0.0001	P	11.1
2	☐	2.000	2.131	868.93	0.0035	P	4.2
3	☐	5.000	5.132	2036.08	0.0082	P	2.5
4	☐	10.000	10.891	4263.93	0.0173	P	2.2
5	☐	100.000	99.888	38658.35	0.1576	P	0.9
6	☐	200.000	200.007	76011.84	0.3155	P	0.6
7	☐	1.000					

y = 0.0016 * x + 1.4546E-004

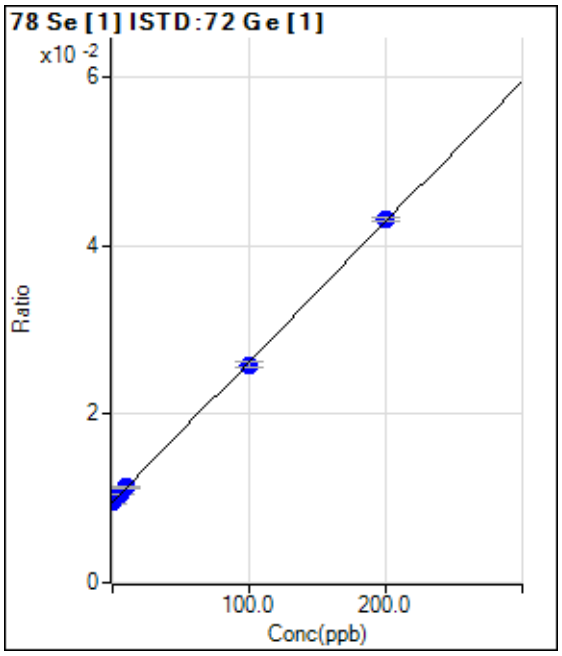
R = 1.0000

DL = 0.03085

BEC = 0.09226

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	19455.00	0.0096	P	3.2
2	☐	2.000	2.486	20698.69	0.0100	P	0.1
3	☐	5.000	5.330	21185.93	0.0105	P	1.0
4	☐	10.000	10.314	23408.13	0.0113	P	2.5
5	☐	100.000	97.863	53201.04	0.0259	P	3.3
6	☐	200.000	201.040	84967.95	0.0430	P	1.1
7	☐	1.000					

y = 1.6646E-004 * x + 0.0096

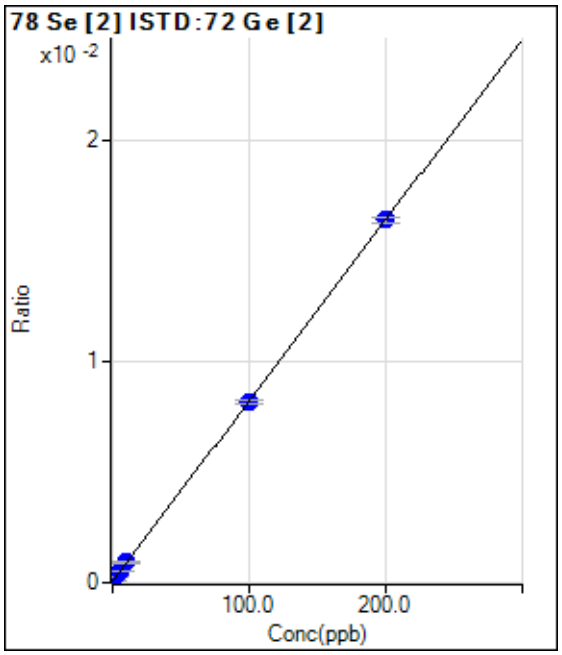
R = 0.9999

DL = 5.587

BEC = 57.56

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15.93	0.0001	P	17.0
2	☐	2.000	2.387	64.08	0.0003	P	14.5
3	☐	5.000	5.207	120.74	0.0005	P	3.1
4	☐	10.000	10.854	233.71	0.0009	P	8.5
5	☐	100.000	99.567	2007.19	0.0082	P	2.6
6	☐	200.000	200.165	3948.67	0.0164	P	1.4
7	☐	1.000					

y = 8.1561E-005 * x + 6.3764E-005

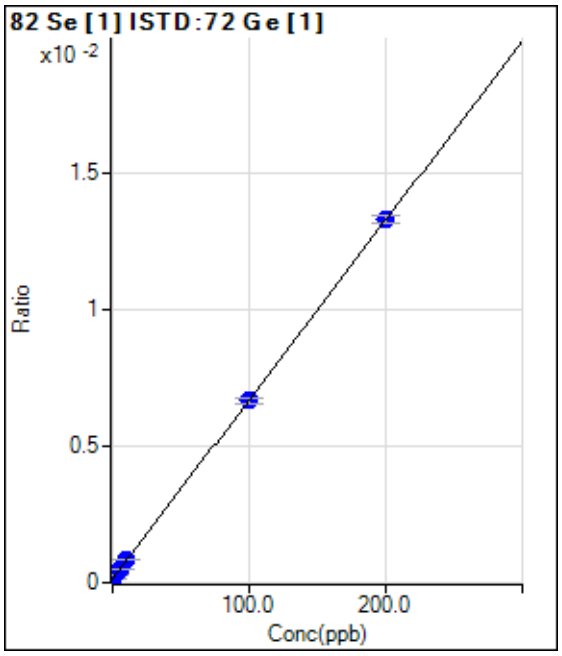
R = 1.0000

DL = 0.3981

BEC = 0.7818

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	272.23	0.0001	P	8.9
2	☐	2.000	2.256	584.46	0.0003	P	11.5
3	☐	5.000	5.237	966.34	0.0005	P	4.2
4	☐	10.000	10.643	1725.30	0.0008	P	3.8
5	☐	100.000	99.343	13681.97	0.0067	P	4.1
6	☐	200.000	200.288	26213.79	0.0133	P	2.2
7	☐	1.000					

y = 6.5640E-005 * x + 1.3389E-004

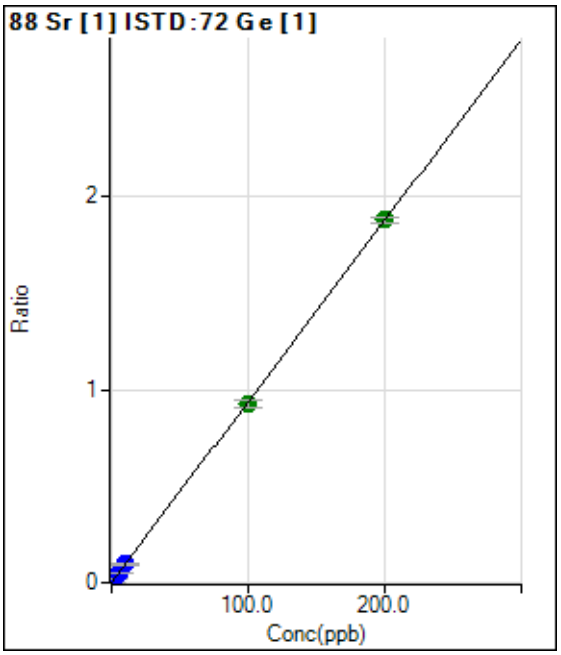
R = 1.0000

DL = 0.5429

BEC = 2.04

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1671.28	0.0008	P	31.7
2	☐	2.000	2.083	42089.56	0.0203	P	3.2
3	☐	5.000	4.998	96364.45	0.0476	P	1.1
4	☐	10.000	10.062	196848.52	0.0950	P	2.9
5	☐	100.000	99.142	1910024.71	0.9290	A	4.3
6	☐	200.000	200.425	3705351.75	1.8773	A	1.3
7	☐	1.000					

y = 0.0094 * x + 8.1930E-004

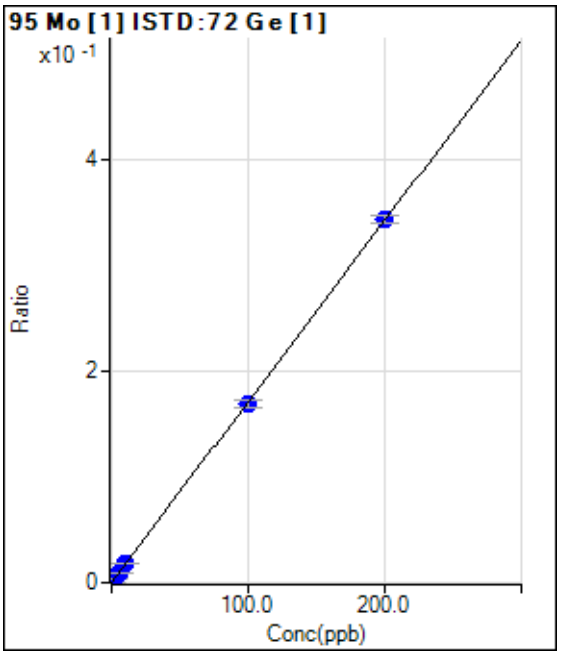
R = 1.0000

DL = 0.08332

BEC = 0.08751

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	222.23	0.0001	P	8.9
2	☐	2.000	2.062	7513.12	0.0036	P	2.9
3	☐	5.000	5.133	17949.29	0.0089	P	0.4
4	☐	10.000	10.519	37415.09	0.0181	P	2.6
5	☐	100.000	98.776	346788.38	0.1687	P	4.0
6	☐	200.000	200.582	675800.91	0.3424	P	2.3
7	☐	1.000					

y = 0.0017 * x + 1.0928E-004

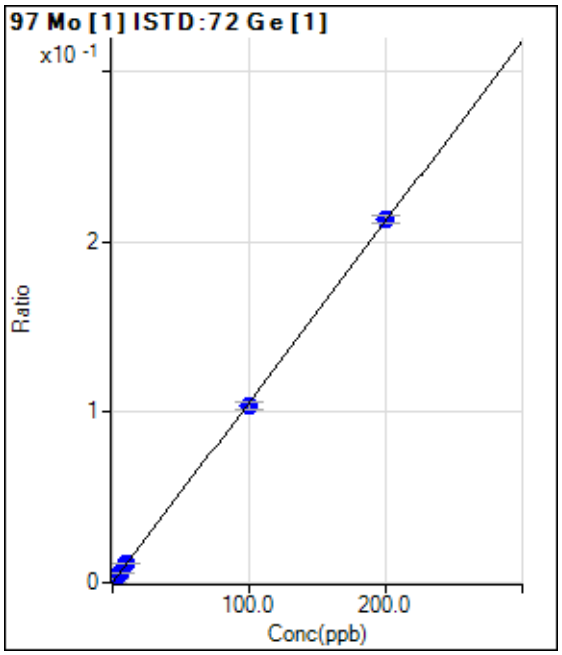
R = 1.0000

DL = 0.01717

BEC = 0.06404

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	155.56	0.0001	P	14.6
2	☐	2.000	2.051	4655.30	0.0022	P	0.9
3	☐	5.000	5.167	11225.37	0.0055	P	2.6
4	☐	10.000	10.240	22627.27	0.0109	P	1.3
5	☐	100.000	98.140	213838.12	0.1040	P	3.8
6	☐	200.000	200.913	420078.05	0.2128	P	2.1
7	☐	1.000					

y = 0.0011 * x + 7.6492E-005

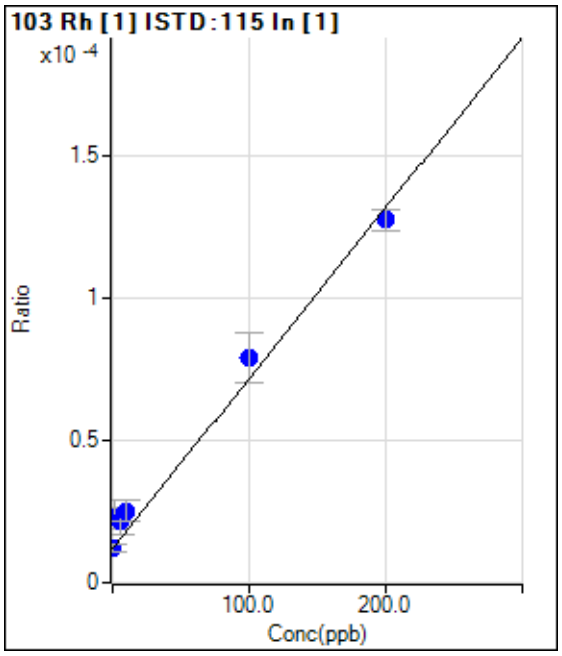
R = 0.9999

DL = 0.03174

BEC = 0.07223

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25.56	0.0000	P	20.8
2	☐	2.000	19.798	52.22	0.0000	P	42.7
3	☐	5.000	16.118	45.56	0.0000	P	41.7
4	☐	10.000	22.196	54.45	0.0000	P	30.7
5	☐	100.000	111.944	166.67	0.0001	P	22.6
6	☐	200.000	192.963	257.79	0.0001	P	6.1
7	☐	1.000					

y = 5.9918E-007 * x + 1.1950E-005

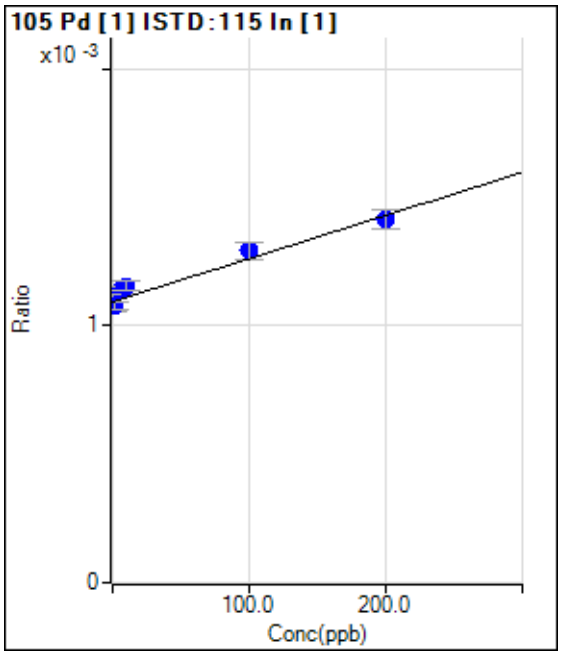
R = 0.9957

DL = 12.45

BEC = 19.94

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2341.39	0.0011	P	6.5
2	☐	2.000	-8.276	2346.95	0.0011	P	3.1
3	☐	5.000	26.080	2400.28	0.0011	P	2.5
4	☐	10.000	35.290	2485.87	0.0012	P	3.3
5	☐	100.000	117.656	2730.36	0.0013	P	5.3
6	☐	200.000	189.483	2855.95	0.0014	P	5.2
7	☐	1.000					

y = 1.6813E-006 * x + 0.0011

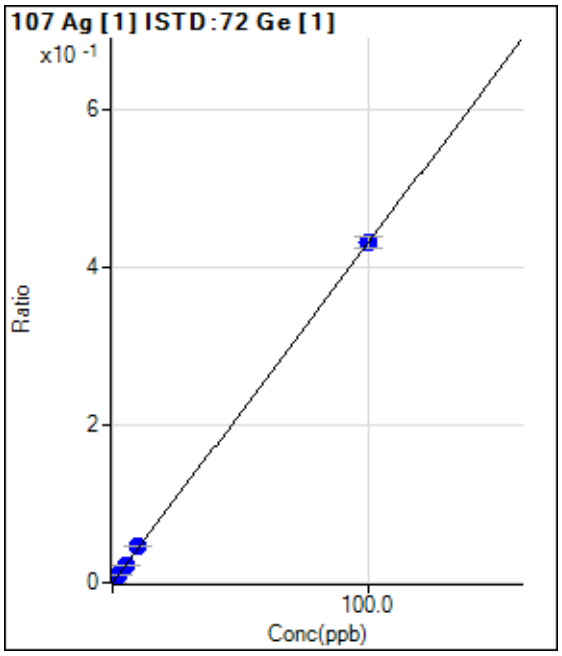
R = 0.9808

DL = 127.6

BEC = 650.7

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	136.67	0.0001	P	48.5
2	☐	2.000	2.104	18976.08	0.0092	P	4.1
3	☐	5.000	5.247	46065.32	0.0228	P	2.6
4	☐	10.000	10.646	95536.61	0.0461	P	3.3
5	☐	100.000	99.921	889027.93	0.4324	P	3.4
6	☐			1803367.80	0.9136	A	2.0
7	☐	1.000					

y = 0.0043 * x + 6.6858E-005

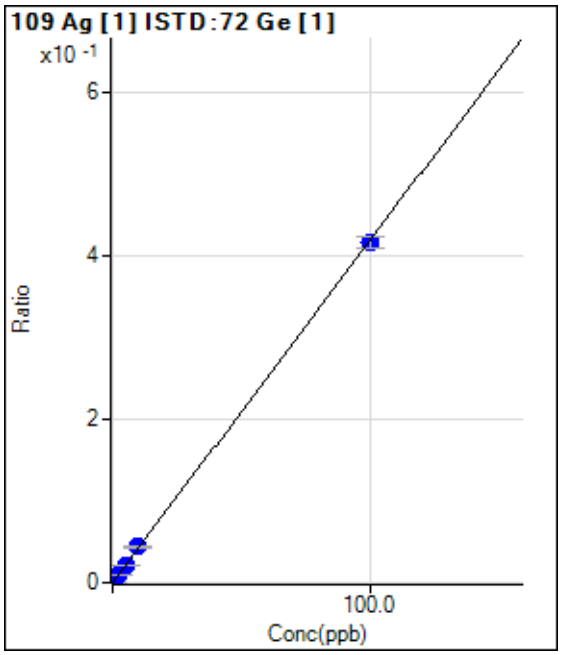
R = 1.0000

DL = 0.02247

BEC = 0.01545

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	142.23	0.0001	P	22.9
2	☐	2.000	2.158	18791.40	0.0091	P	0.4
3	☐	5.000	5.231	44307.22	0.0219	P	1.0
4	☐	10.000	10.552	91317.92	0.0441	P	4.4
5	☐	100.000	99.930	857499.95	0.4170	P	3.2
6	☐			1759054.52	0.8912	A	2.4
7	☐	1.000					

y = 0.0042 * x + 6.9810E-005

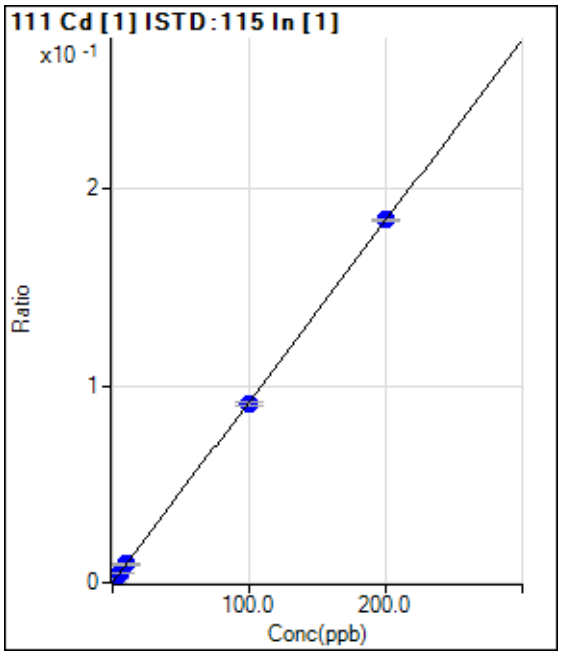
R = 1.0000

DL = 0.01148

BEC = 0.01673

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23.34	0.0000	P	78.1
2	☐	2.000	2.047	4109.59	0.0019	P	1.5
3	☐	5.000	5.160	10017.91	0.0047	P	0.9
4	☐	10.000	10.129	20051.79	0.0093	P	4.8
5	☐	100.000	99.047	192287.32	0.0910	P	1.9
6	☐	200.000	200.466	372297.88	0.1841	P	0.7
7	☐	1.000					

y = 9.1817E-004 * x + 1.0787E-005

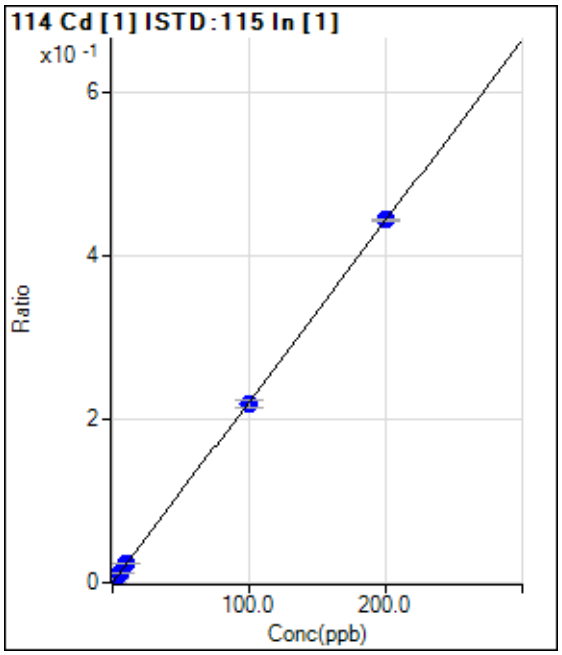
R = 1.0000

DL = 0.02752

BEC = 0.01175

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	60.00	0.0000	P	13.1
2	☐	2.000	2.097	10139.16	0.0047	P	2.0
3	☐	5.000	5.190	24274.24	0.0115	P	0.3
4	☐	10.000	10.295	49094.38	0.0228	P	2.4
5	☐	100.000	98.892	462321.20	0.2187	P	3.4
6	☐	200.000	200.534	896986.10	0.4435	P	0.5
7	☐	1.000					

y = 0.0022 * x + 2.7991E-005

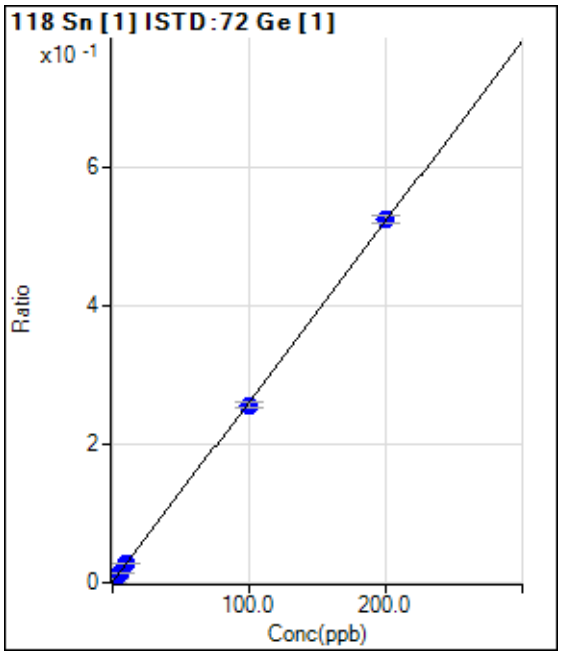
R = 1.0000

DL = 0.004964

BEC = 0.01266

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1017.86	0.0005	P	4.2
2	☐	2.000	2.065	12177.27	0.0059	P	1.8
3	☐	5.000	5.164	28224.16	0.0139	P	1.2
4	☐	10.000	10.357	56898.58	0.0275	P	3.6
5	☐	100.000	98.270	527216.25	0.2564	P	3.3
6	☐	200.000	200.842	1033251.26	0.5235	P	2.0
7	☐	1.000					

y = 0.0026 * x + 5.0098E-004

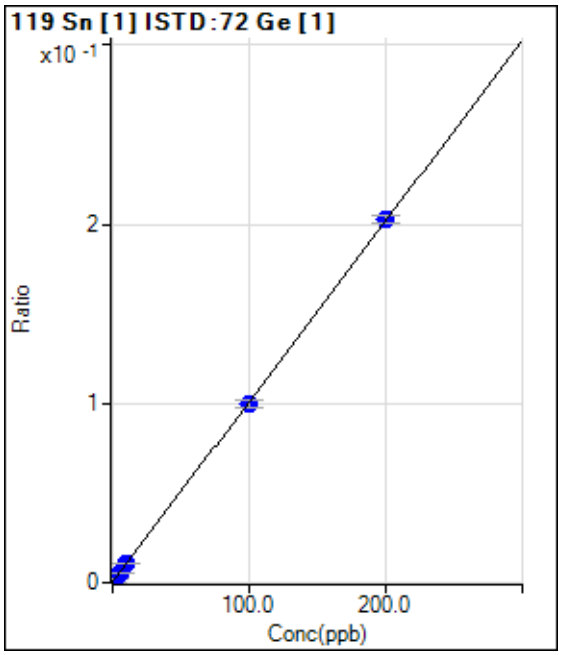
R = 0.9999

DL = 0.02445

BEC = 0.1924

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	396.69	0.0002	P	8.3
2	☐	2.000	2.023	4628.62	0.0022	P	4.1
3	☐	5.000	5.099	10794.04	0.0053	P	0.5
4	☐	10.000	10.367	22051.21	0.0106	P	2.4
5	☐	100.000	98.585	204689.63	0.0996	P	4.0
6	☐	200.000	200.686	399614.79	0.2025	P	2.2
7	☐	1.000					

y = 0.0010 * x + 1.9513E-004

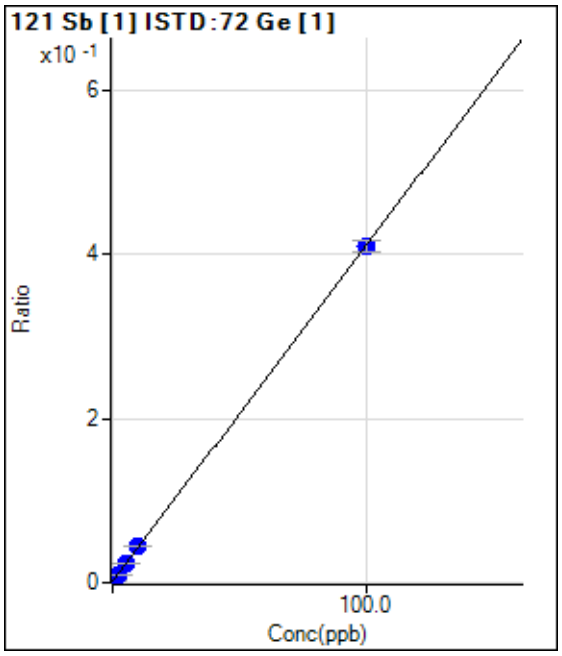
R = 1.0000

DL = 0.04793

BEC = 0.1936

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2856.22	0.0014	P	4.2
2	☐	2.000	2.127	20886.80	0.0101	P	2.6
3	☐	5.000	5.173	45560.14	0.0225	P	0.5
4	☐	10.000	10.466	91378.67	0.0441	P	3.2
5	☐	100.000	99.942	841527.72	0.4093	P	3.2
6	☐			1724823.90	0.8739	A	2.7
7	☐	1.000					

y = 0.0041 * x + 0.0014

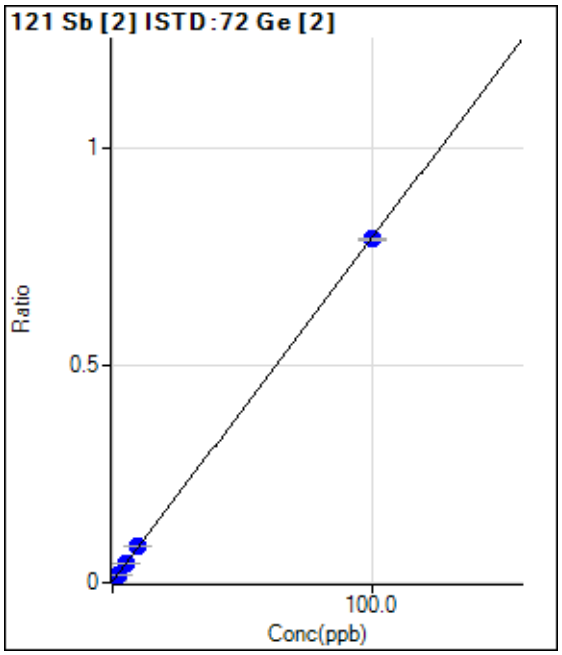
R = 1.0000

DL = 0.04296

BEC = 0.3444

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	709.66	0.0028	P	8.1
2	☐	2.000	2.001	4609.61	0.0186	P	0.2
3	☐	5.000	5.132	10685.46	0.0432	P	0.4
4	☐	10.000	10.449	20944.98	0.0851	P	1.6
5	☐	100.000	99.948	193579.60	0.7894	P	0.2
6	☐			383865.00	1.5933	P	0.4
7	☐	1.000					

y = 0.0079 * x + 0.0028

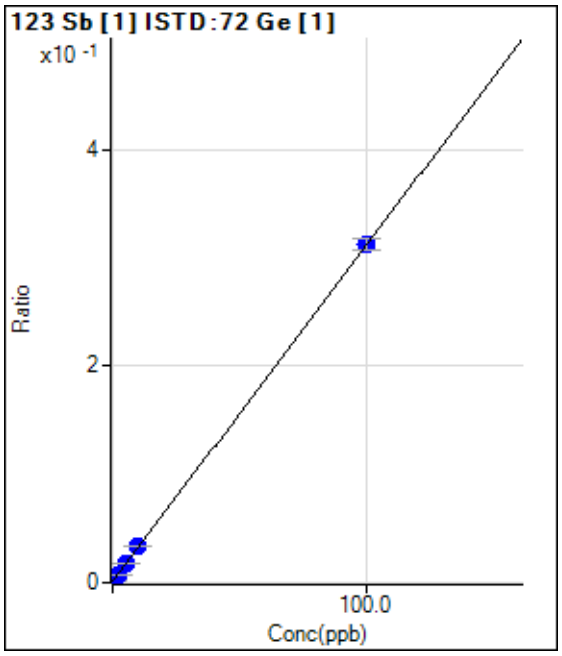
R = 1.0000

DL = 0.08804

BEC = 0.3612

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2188.70	0.0011	P	5.1
2	☐	2.000	2.128	15949.78	0.0077	P	1.3
3	☐	5.000	5.177	34795.53	0.0172	P	1.4
4	☐	10.000	10.472	69762.48	0.0337	P	3.4
5	☐	100.000	99.941	642000.84	0.3122	P	3.5
6	☐			1258899.83	0.6378	P	2.4
7	☐	1.000					

y = 0.0031 * x + 0.0011

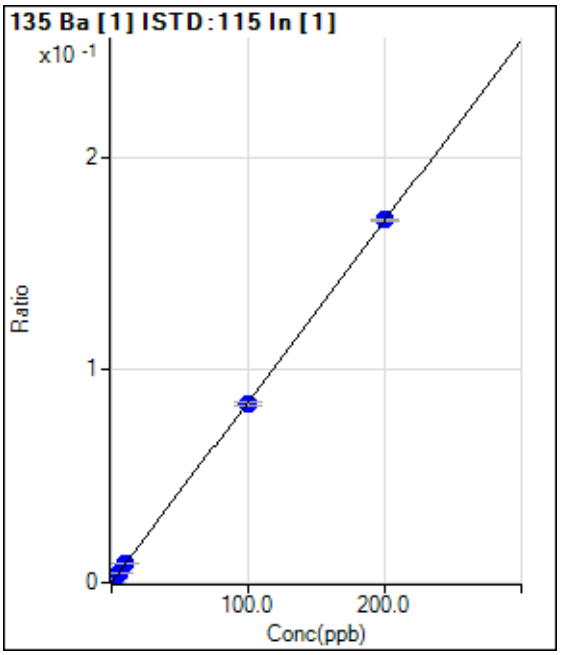
R = 1.0000

DL = 0.0526

BEC = 0.346

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	192.23	0.0001	P	14.6
2	☐	2.000	2.118	4107.38	0.0019	P	4.6
3	☐	5.000	5.072	9274.21	0.0044	P	2.1
4	☐	10.000	10.138	18736.11	0.0087	P	1.7
5	☐	100.000	98.663	177273.22	0.0839	P	2.8
6	☐	200.000	200.659	344803.09	0.1705	P	0.4
7	☐	1.000					

y = 8.4907E-004 * x + 8.9621E-005

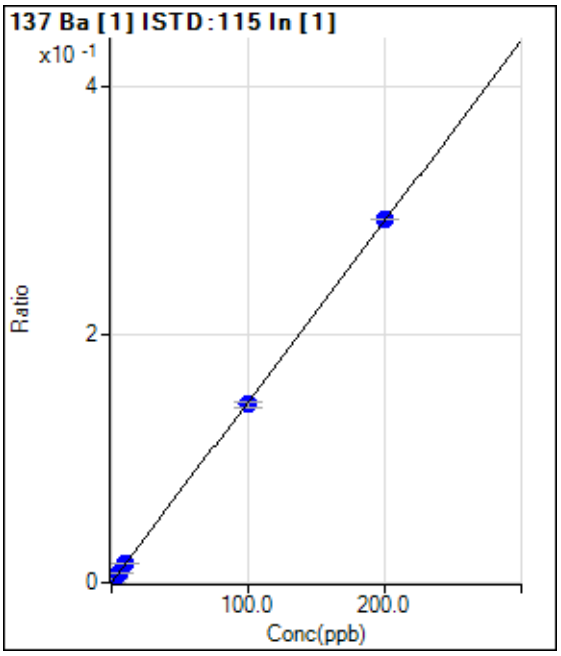
R = 1.0000

DL = 0.04631

BEC = 0.1056

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	350.02	0.0002	P	9.1
2	☐	2.000	2.092	6988.49	0.0032	P	4.9
3	☐	5.000	5.050	15866.22	0.0075	P	1.8
4	☐	10.000	10.377	32924.58	0.0153	P	1.8
5	☐	100.000	98.500	303730.89	0.1437	P	3.6
6	☐	200.000	200.729	591947.40	0.2927	P	0.1
7	☐	1.000					

y = 0.0015 * x + 1.6331E-004

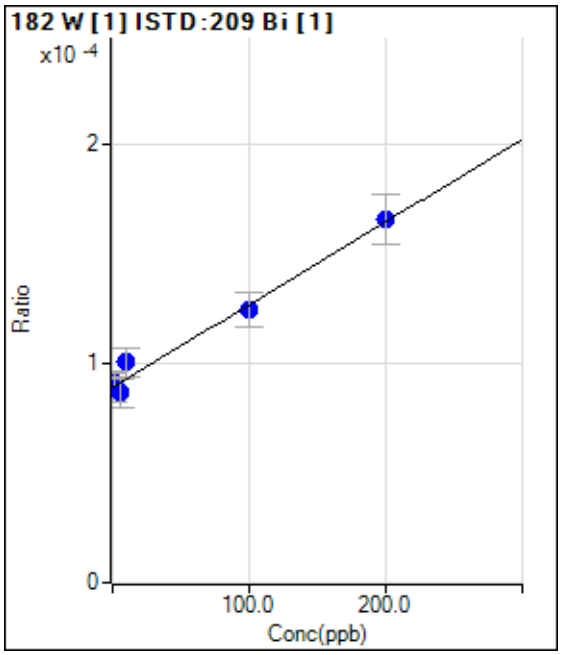
R = 1.0000

DL = 0.03057

BEC = 0.1121

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	176.68	0.0001	P	14.2
2	☐	2.000	4.476	184.46	0.0001	P	12.4
3	☐	5.000	-6.867	170.01	0.0001	P	14.6
4	☐	10.000	30.813	201.12	0.0001	P	13.1
5	☐	100.000	93.784	246.68	0.0001	P	12.1
6	☐	200.000	202.339	308.91	0.0002	P	13.8
7	☐	1.000					

y = 3.7664E-007 * x + 8.8938E-005

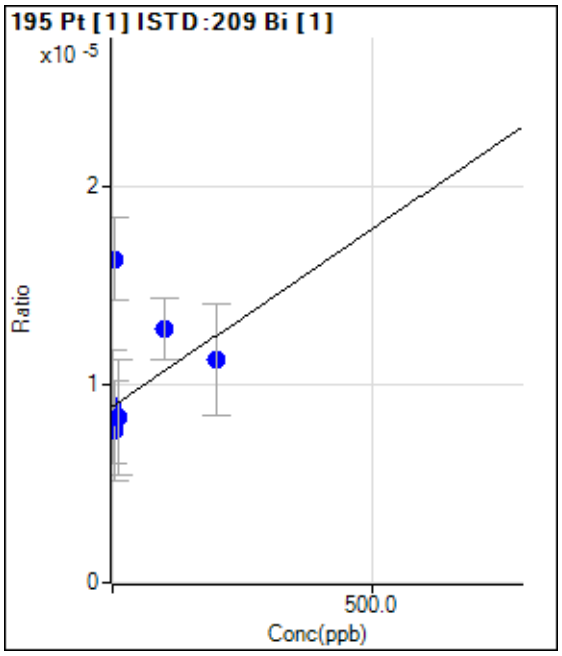
R = 0.9908

DL = 100.4

BEC = 236.1

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17.78	0.0000	P	64.2
2	☐	2.000	-69.356	15.56	0.0000	P	65.1
3	☐	5.000	416.989	32.22	0.0000	P	26.0
4	☐	10.000	-30.805	16.67	0.0000	P	69.9
5	☐	100.000	220.166	25.56	0.0000	P	24.5
6	☐	200.000	132.371	21.11	0.0000	P	50.7
7	☐	1.000					

y = 1.7869E-008 * x + 8.8972E-006

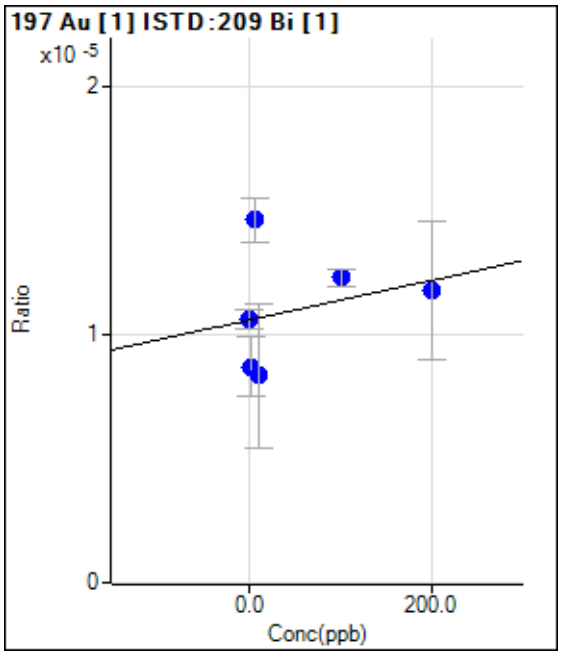
R = 0.1954

DL = 959.4

BEC = 497.9

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21.11	0.0000	P	7.2
2	☐	2.000	-236.494	17.78	0.0000	P	27.8
3	☐	5.000	506.462	28.89	0.0000	P	12.3
4	☐	10.000	-282.426	16.66	0.0000	P	69.6
5	☐	100.000	212.703	24.44	0.0000	P	5.3
6	☐	200.000	148.118	22.22	0.0000	P	47.0
7	☐	1.000					

y = 7.9646E-009 * x + 1.0618E-005

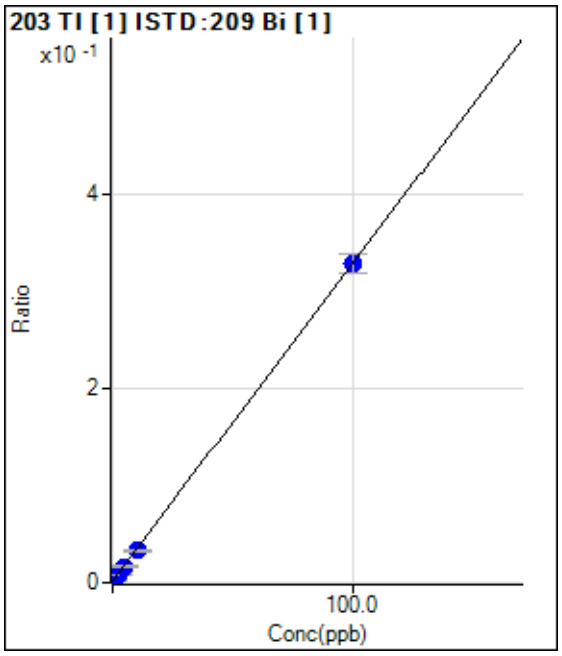
R = 0.2620

DL = 288.1

BEC = 1333

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2942.55	0.0015	P	12.4
2	☐	2.000	1.798	15004.86	0.0074	P	3.4
3	☐	5.000	4.662	33061.07	0.0168	P	4.6
4	☐	10.000	9.683	66565.62	0.0333	P	6.0
5	☐	100.000	100.053	653514.56	0.3298	P	6.2
6	☐			1270748.14	0.6784	P	3.9
7	☐	1.000					

y = 0.0033 * x + 0.0015

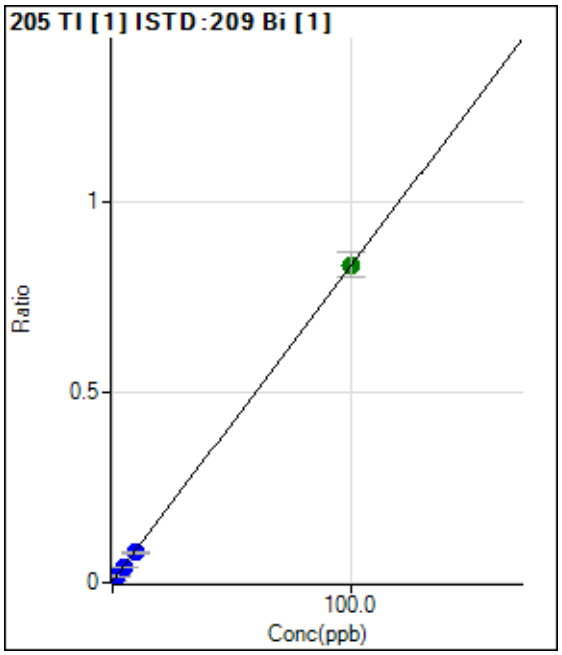
R = 1.0000

DL = 0.1684

BEC = 0.452

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6776.79	0.0034	P	13.2
2	☐	2.000	1.707	35764.14	0.0176	P	5.2
3	☐	5.000	4.394	78656.13	0.0399	P	5.0
4	☐	10.000	9.086	157950.18	0.0789	P	6.5
5	☐	100.000	100.128	1654909.59	0.8355	A	8.1
6	☐			3214765.45	1.7161	A	4.0
7	☐	1.000					

y = 0.0083 * x + 0.0034

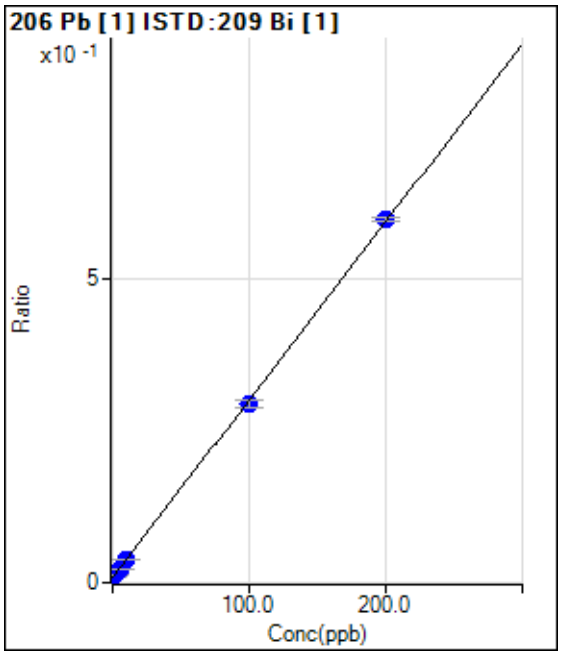
R = 1.0000

DL = 0.1633

BEC = 0.4112

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16360.48	0.0082	P	2.7
2	☐	2.000	1.825	27618.05	0.0136	P	4.8
3	☐	5.000	4.541	42449.93	0.0215	P	2.7
4	☐	10.000	9.761	73748.66	0.0368	P	1.3
5	☐	100.000	97.553	582910.16	0.2941	P	3.7
6	☐	200.000	201.249	1119652.29	0.5979	P	1.1
7	☐	1.000					

y = 0.0029 * x + 0.0082

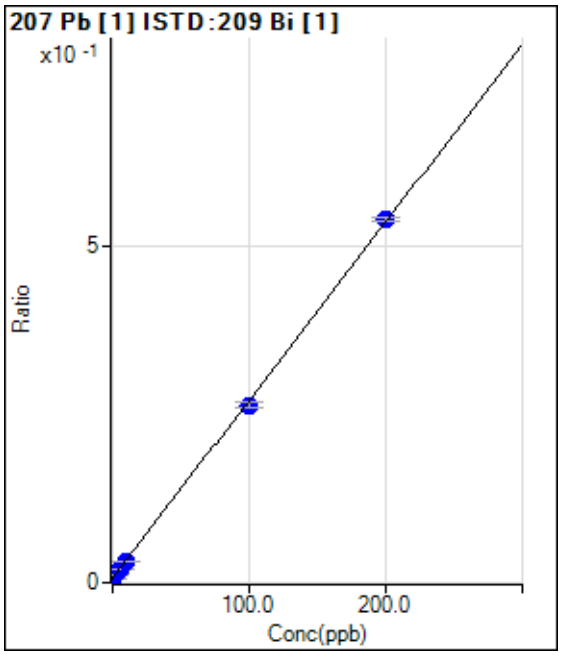
R = 0.9999

DL = 0.2317

BEC = 2.81

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13533.21	0.0068	P	5.0
2	☐	2.000	1.843	23761.46	0.0117	P	3.5
3	☐	5.000	4.599	37397.74	0.0190	P	2.7
4	☐	10.000	9.778	65431.69	0.0327	P	0.9
5	☐	100.000	97.289	523713.50	0.2642	P	3.2
6	☐	200.000	201.378	1010404.40	0.5395	P	1.1
7	☐	1.000					

y = 0.0026 * x + 0.0068

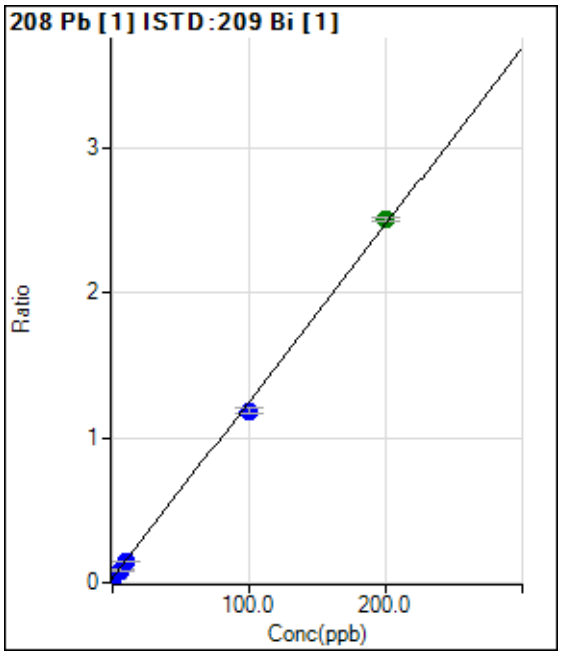
R = 0.9999

DL = 0.3858

BEC = 2.574

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	62957.08	0.0317	P	4.7
2	☐	2.000	1.764	108208.51	0.0532	P	4.9
3	☐	5.000	4.452	169497.18	0.0860	P	2.4
4	☐	10.000	9.557	296948.04	0.1483	P	0.8
5	☐	100.000	94.741	2354570.20	1.1877	P	3.3
6	☐	200.000	202.668	4690641.05	2.5047	A	1.0
7	☐	1.000					

y = 0.0122 * x + 0.0317

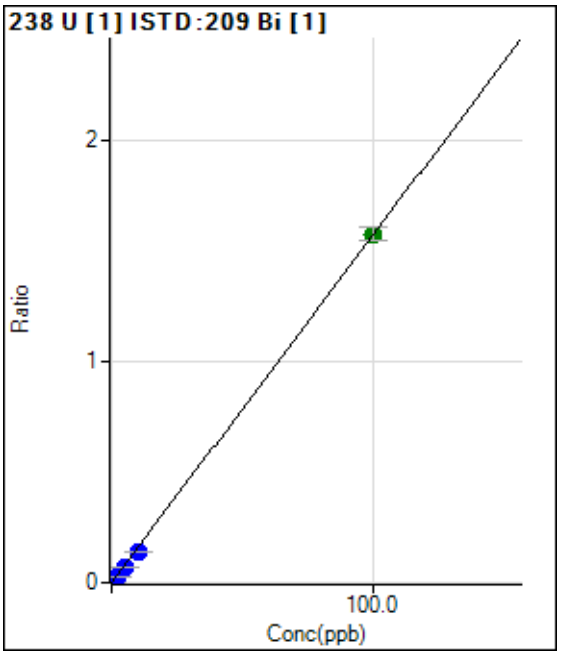
R = 0.9995

DL = 0.3643

BEC = 2.596

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	152.23	0.0001	P	46.0
2	☐	2.000	1.724	55262.76	0.0272	P	1.7
3	☐	5.000	4.286	132931.85	0.0675	P	0.3
4	☐	10.000	8.668	272989.85	0.1363	P	1.9
5	☐	100.000	100.174	3121857.21	1.5750	A	4.2
6	☐			6063773.73	3.2380	A	1.7
7	☐	1.000					

y = 0.0157 * x + 7.6208E-005

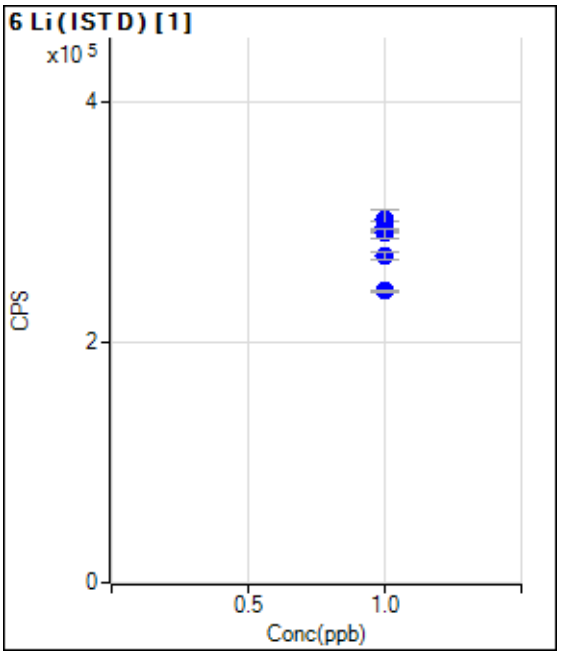
R = 0.9999

DL = 0.006685

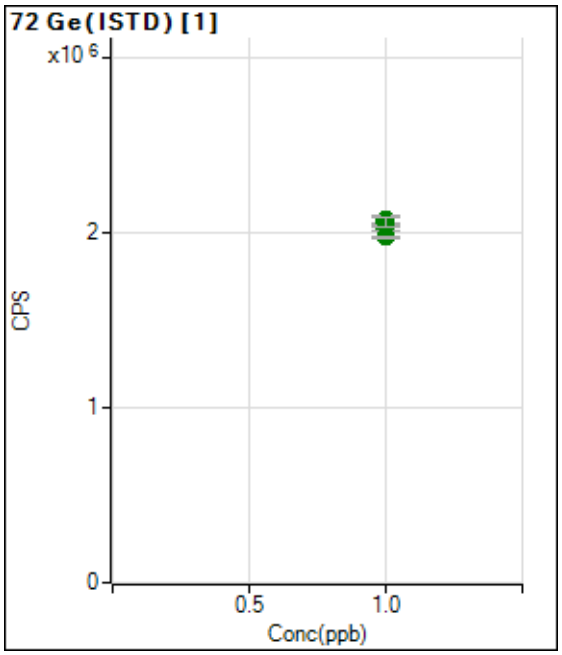
BEC = 0.004847

Weight: None

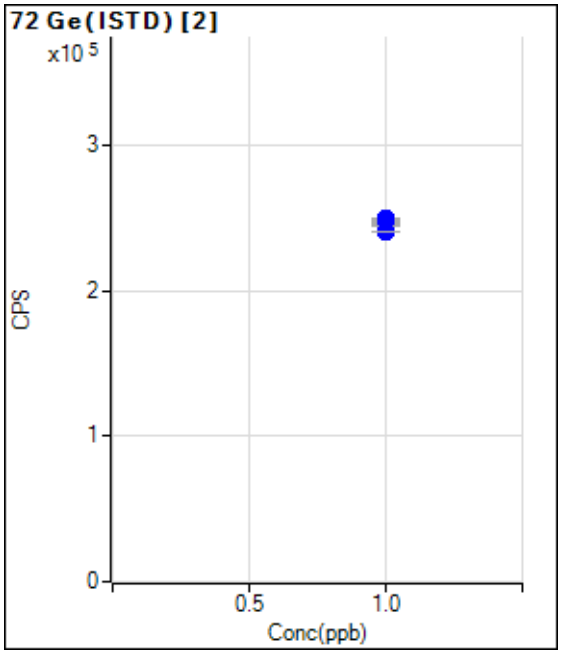
Min Conc: <None>



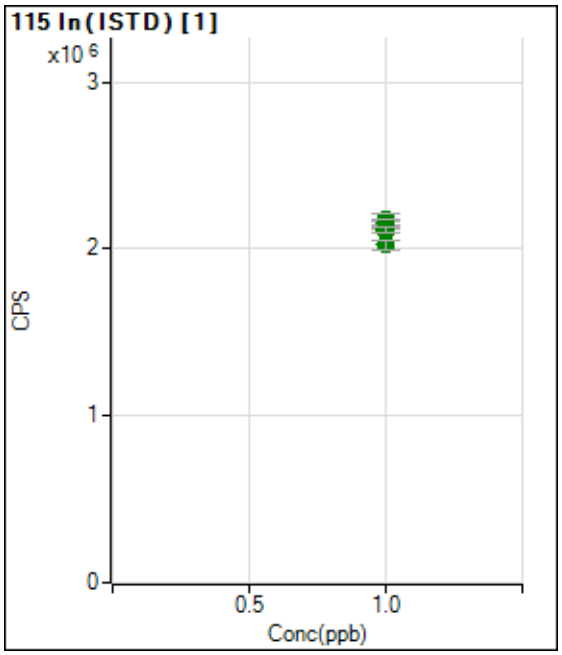
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		295433.76		P	2.8
2	☐	1.000		301391.09		P	5.9
3	☐	1.000		292120.49		P	0.4
4	☐	1.000		289967.59		P	2.3
5	☐	1.000		271304.60		P	2.3
6	☐	1.000		242164.70		P	1.0
7	☐	1.000					



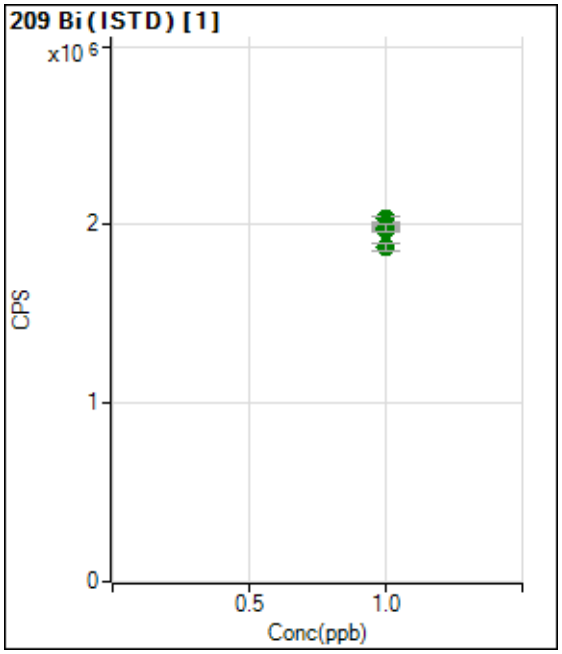
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2031159.64		A	2.0
2	☐	1.000		2070651.59		A	2.0
3	☐	1.000		2023726.63		A	1.5
4	☐	1.000		2072508.37		A	2.5
5	☐	1.000		2057362.90		A	2.5
6	☐	1.000		1973824.25		A	0.8
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		249609.58		P	0.6
2	☐	1.000		247935.99		P	0.3
3	☐	1.000		247188.32		P	0.2
4	☐	1.000		246222.38		P	0.4
5	☐	1.000		245234.85		P	0.1
6	☐	1.000		240927.93		P	0.1
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2141033.42		A	2.0
2	☐	1.000		2173751.37		A	3.2
3	☐	1.000		2109643.90		A	0.8
4	☐	1.000		2154429.93		A	1.9
5	☐	1.000		2114642.06		A	1.9
6	☐	1.000		2022641.48		A	2.4
7	☐	1.000					

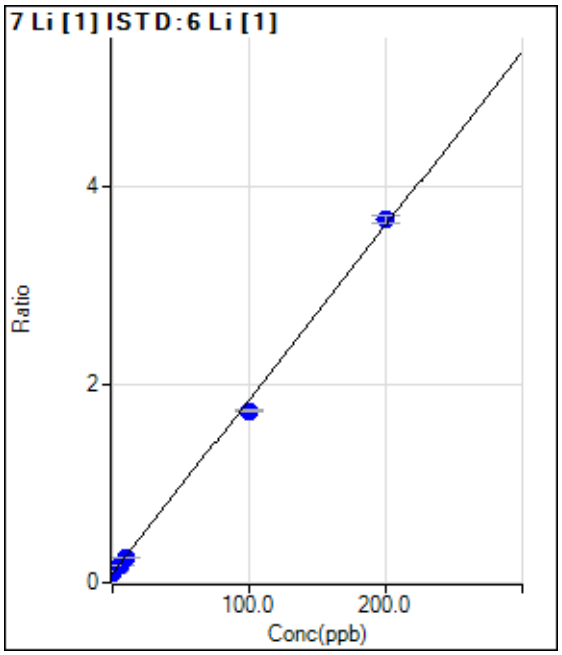


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1986371.17		A	1.9
2	☐	1.000		2032869.36		A	1.5
3	☐	1.000		1970447.24		A	1.0
4	☐	1.000		2002454.53		A	1.2
5	☐	1.000		1983546.96		A	2.5
6	☐	1.000		1872913.58		A	2.0
7	☐	1.000					

Calibration for 142SMPL.D

Batch Folder: C:¥ICPMH¥1¥DATA¥17D25I00.B¥
Analysis File: 17D25I00.batch.xml
DA Date-Time: 4/25/2017 11:02:57 PM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:
Tune Step: #1 042517a5.u
#2 042517he.u

Level	Standard Data File	Sample Name	Acq. Date-Time
1	136CALB.D	CAL BLK	4/25/2017 10:29:16 PM
2	137CALS.D	2/10/200	4/25/2017 10:34:14 PM
3	138CALS.D	5/25/500	4/25/2017 10:39:16 PM
4	139CALS.D	10/50/1000	4/25/2017 10:44:22 PM
5	140CALS.D	100/500/10K	4/25/2017 10:49:31 PM
6	141CALS.D	200/1000/20K	4/25/2017 10:54:35 PM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20401.73	0.0943	P	1.6
2	☐	2.000	1.838	26020.46	0.1266	P	1.5
3	☐	5.000	4.655	37238.20	0.1760	P	1.0
4	☐	10.000	9.245	54192.76	0.2566	P	0.9
5	☐	100.000	93.512	335912.74	1.7365	P	1.7
6	☐	200.000	203.292	658609.92	3.6644	P	2.3
7	☐	1.000					

y = 0.0176 * x + 0.0943

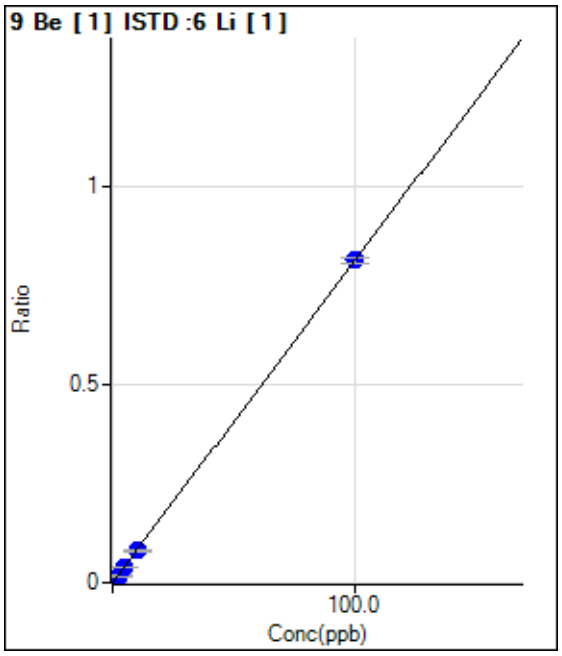
R = 0.9993

DL = 0.2612

BEC = 5.369

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	75.56	0.0003	P	2.0
2	☐	2.000	2.020	3438.26	0.0168	P	8.6
3	☐	5.000	4.789	8301.15	0.0392	P	0.3
4	☐	10.000	9.954	17137.75	0.0812	P	3.6
5	☐	100.000	100.015	157173.68	0.8125	P	2.0
6	☐			317943.37	1.7690	P	2.5
7	☐	1.000					

y = 0.0081 * x + 3.4931E-004

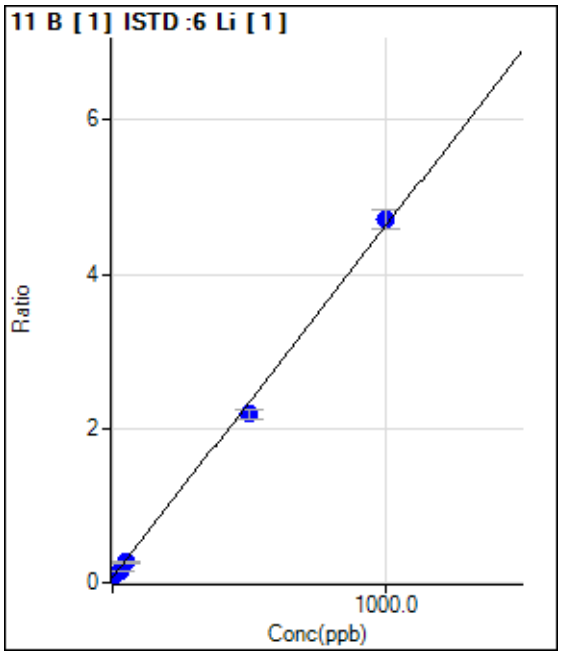
R = 1.0000

DL = 0.002623

BEC = 0.04302

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14161.73	0.0655	P	2.1
2	☐	10.000	7.538	20521.44	0.0998	P	1.7
3	☐	25.000	19.673	32805.56	0.1551	P	3.7
4	☐	50.000	43.159	55322.30	0.2621	P	4.5
5	☐	500.000	464.807	422086.59	2.1828	P	4.9
6	☐	1000.000	1018.096	845067.45	4.7031	P	5.3
7	☐	5.000					

y = 0.0046 * x + 0.0655

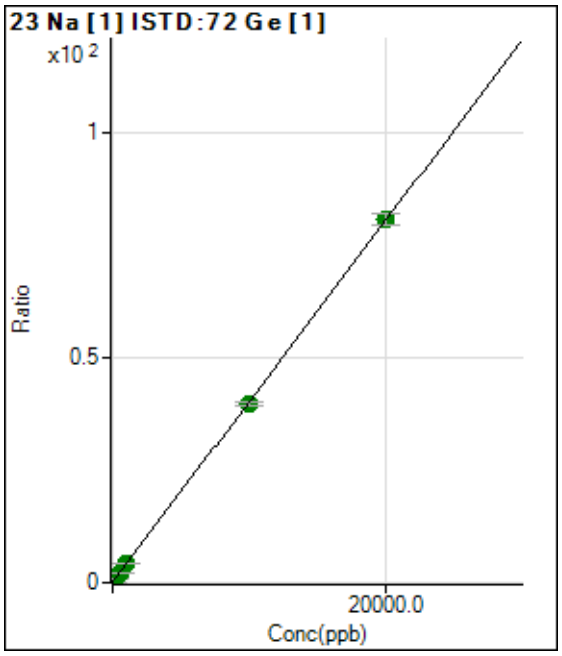
R = 0.9992

DL = 0.8992

BEC = 14.38

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	136445.45	0.0817	P	4.3
2	☐	200.000	223.206	1567273.73	0.9801	A	5.3
3	☐	500.000	529.590	3668133.31	2.2133	A	2.4
4	☐	1000.000	1068.186	7252566.83	4.3810	A	2.6
5	☐	10000.00	9905.527	64736519.04	39.9502	A	2.3
6	☐	20000.00	20042.85	128425583.6	80.7516	A	3.3
7	☐	100.000					

y = 0.0040 * x + 0.0817

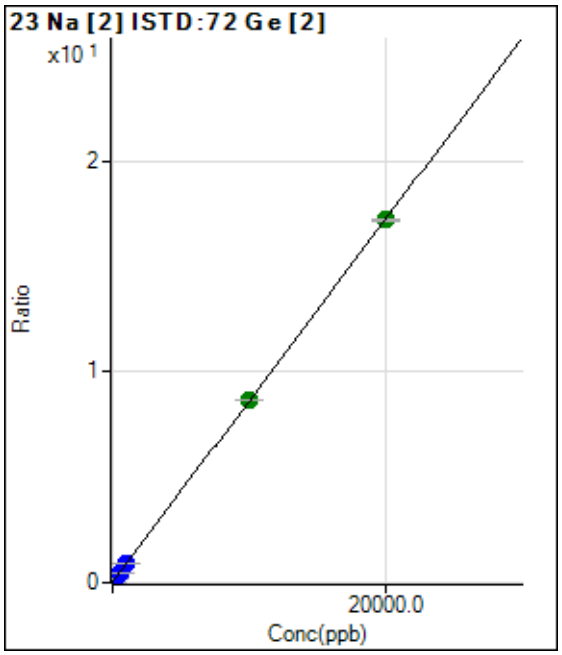
R = 1.0000

DL = 2.59

BEC = 20.31

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4018.42	0.0199	P	2.6
2	☐	200.000	202.209	38981.84	0.1940	P	1.1
3	☐	500.000	508.804	91823.40	0.4581	P	1.5
4	☐	1000.000	1042.757	183234.13	0.9179	P	0.3
5	☐	10000.00	10053.63	1701622.56	8.6776	A	0.4
6	☐	20000.00	19970.80	3387355.82	17.2178	A	0.7
7	☐	100.000					

y = 8.6115E-004 * x + 0.0199

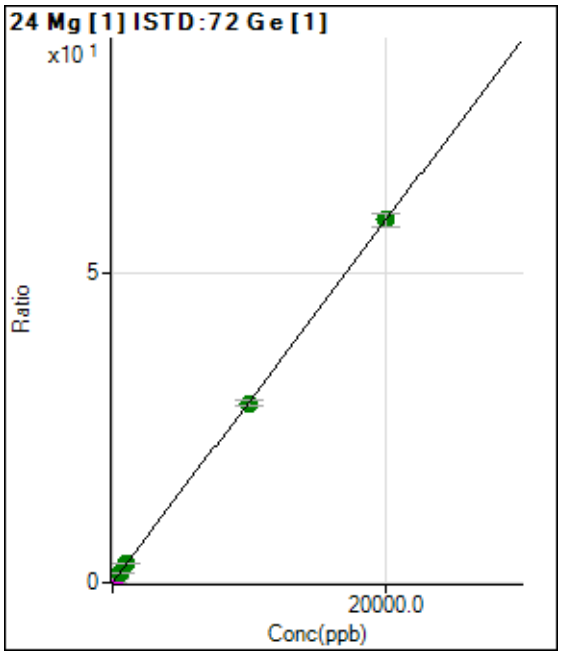
R = 1.0000

DL = 1.829

BEC = 23.12

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34665.37	0.0207	P	26.6
2	☐	200.000	222.065	1071955.16	0.6708	M	7.3
3	☐	500.000	538.534	2647605.95	1.5974	A	2.0
4	☐	1000.000	1072.564	5232648.08	3.1610	A	2.8
5	☐	10000.00	9918.048	47088412.08	29.0593	A	2.4
6	☐	20000.00	20036.16	93327578.61	58.6837	A	3.4
7	☐	100.000					

y = 0.0029 * x + 0.0207

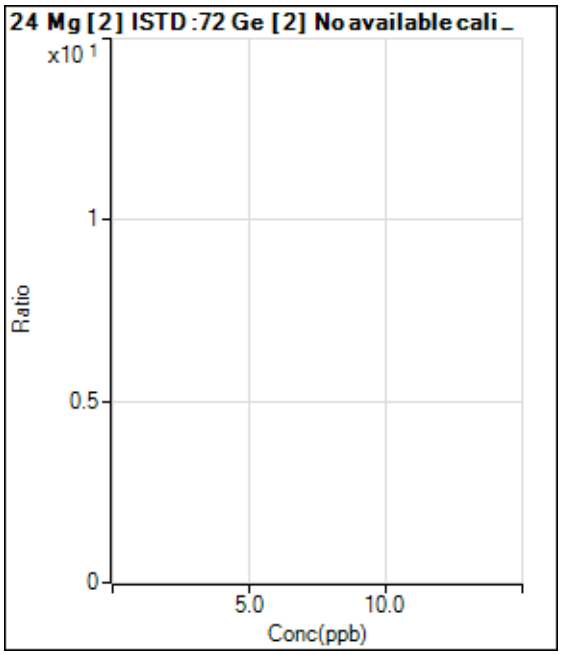
R = 1.0000

DL = 5.631

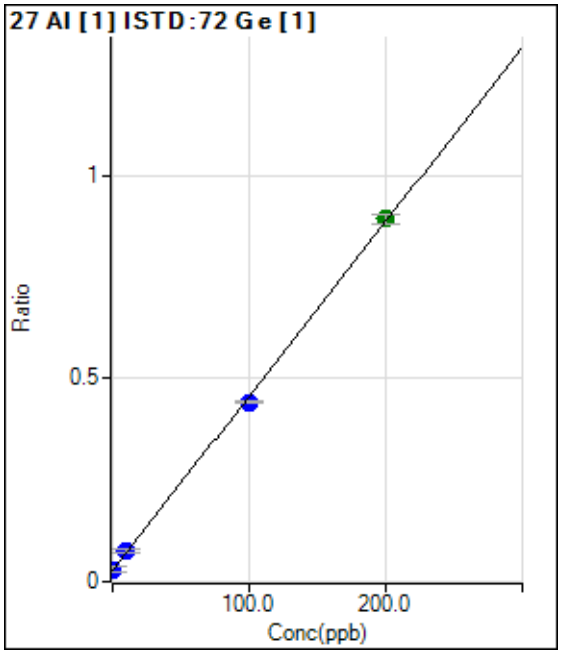
BEC = 7.059

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.00					
6	☐	20000.00					
7	☐	100.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.704	51667.97	0.0307	P	35.3
2	☐			81573.59	0.0514	P	29.7
3	☐			100234.24	0.0604	P	22.3
4	☐	10.000	11.068	124917.98	0.0753	P	11.4
5	☐	100.000	96.562	717231.63	0.4425	P	0.8
6	☐	200.000	201.665	1421818.31	0.8939	A	2.8
7	☐	1.000					

y = 0.0043 * x + 0.0277

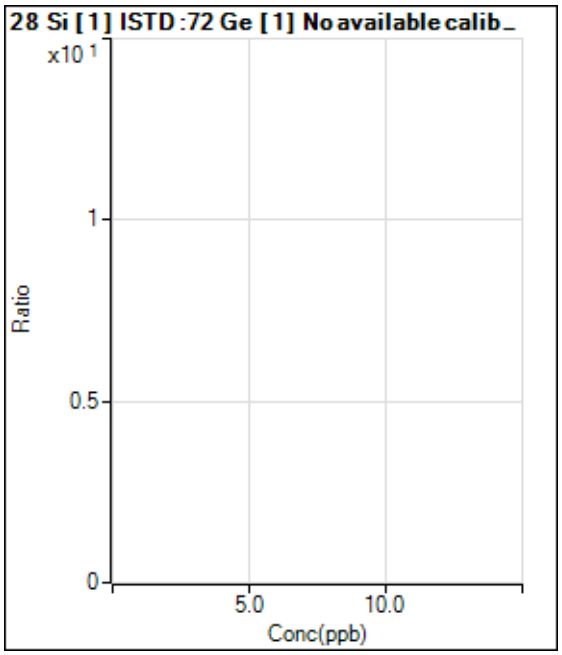
R = 0.9997

DL = 7.578

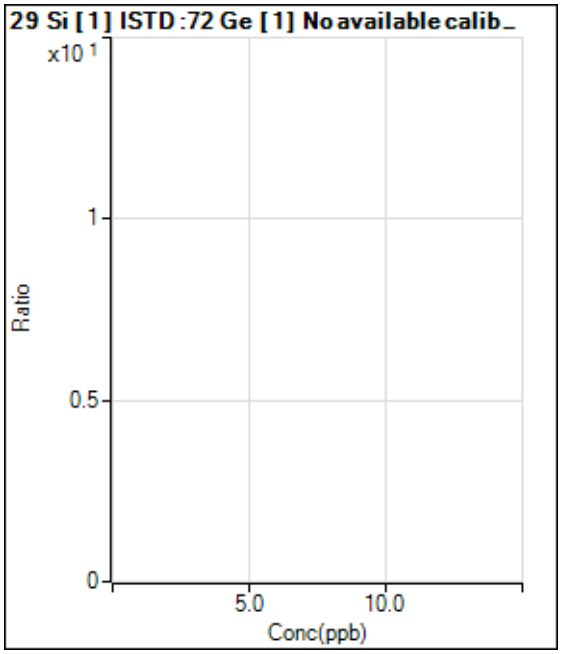
BEC = 6.455

Weight: None

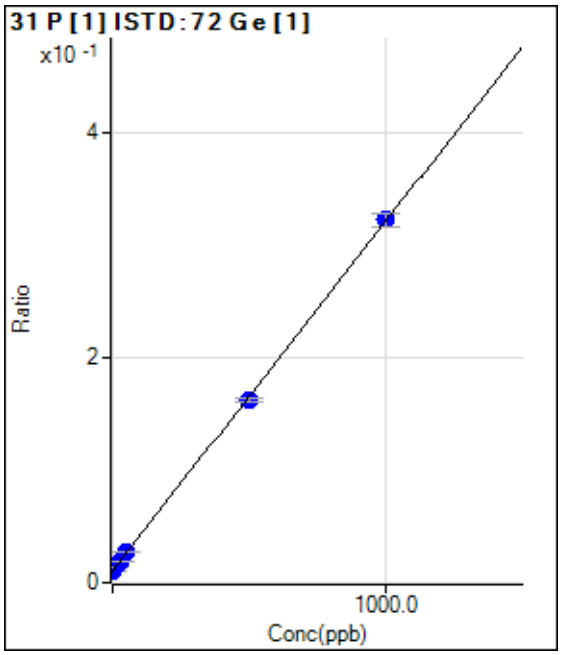
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17659.62	0.0106	P	2.1
2	☐	10.000	12.093	22900.22	0.0143	P	10.4
3	☐	25.000	26.940	31429.10	0.0190	P	2.0
4	☐	50.000	52.806	44686.71	0.0270	P	1.8
5	☐	500.000	489.805	263640.55	0.1627	P	1.9
6	☐	1000.000	1004.888	513081.44	0.3226	P	3.6
7	☐	5.000					

y = 3.1052E−004 * x + 0.0106

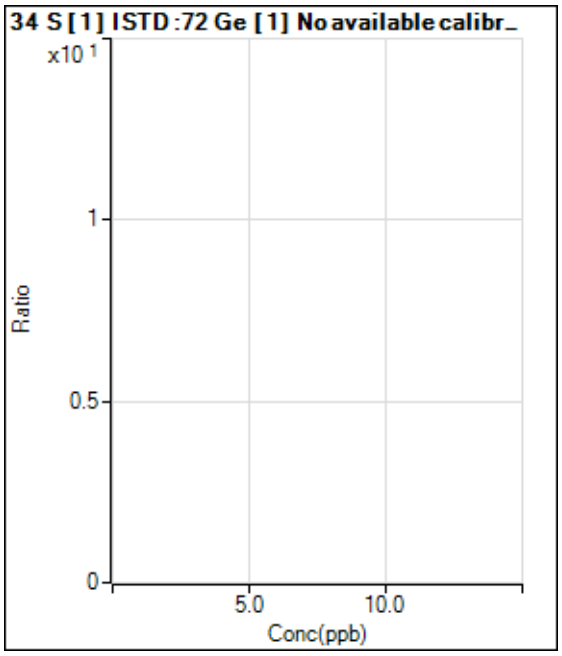
R = 0.9999

DL = 2.125

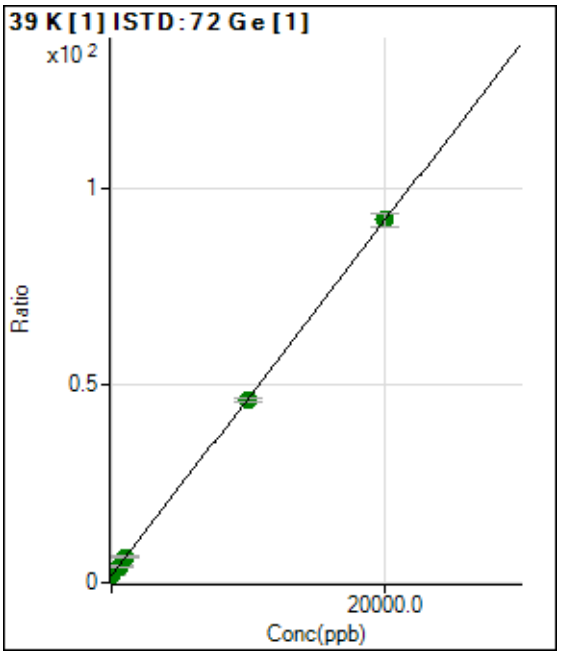
BEC = 34.11

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.00					
6	☐	40000.00					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3007496.80	1.8044	A	2.6
2	☐	200.000	229.607	4536012.50	2.8371	A	5.6
3	☐	500.000	520.102	6867760.04	4.1437	A	2.1
4	☐	1000.000	1050.708	10810982.20	6.5303	A	2.4
5	☐	10000.00	9883.297	74957272.22	46.2584	A	2.4
6	☐	20000.00	20055.01	146321916.7	92.0098	A	3.6
7	☐	100.000					

y = 0.0045 * x + 1.8044

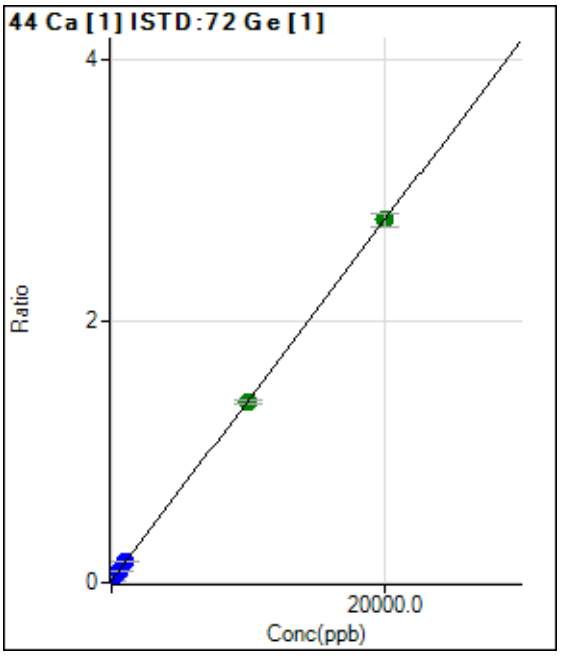
R = 1.0000

DL = 31.44

BEC = 401.2

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27109.18	0.0162	P	13.7
2	☐	200.000	235.221	77539.26	0.0486	P	10.8
3	☐	500.000	532.735	148428.70	0.0895	P	2.8
4	☐	1000.000	1059.354	268269.28	0.1620	P	1.0
5	☐	10000.00	9941.587	2243513.46	1.3845	A	2.0
6	☐	20000.00	20025.06	4408678.09	2.7722	A	3.6
7	☐	100.000					

y = 1.3763E-004 * x + 0.0162

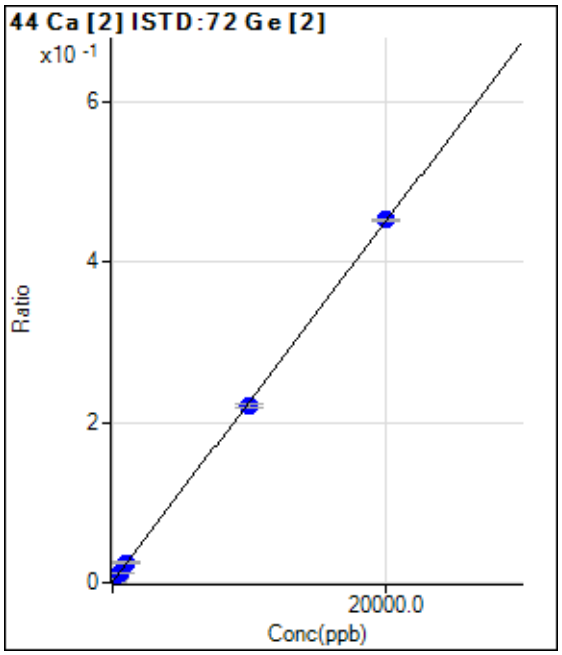
R = 1.0000

DL = 48.55

BEC = 117.8

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	237.79	0.0012	P	18.8
2	☐	200.000	222.503	1240.10	0.0062	P	9.4
3	☐	500.000	529.578	2619.21	0.0131	P	0.6
4	☐	1000.000	1060.939	4988.73	0.0250	P	2.4
5	☐	10000.00	9780.304	43277.25	0.2207	P	2.2
6	☐	20000.00	20105.83	89019.21	0.4525	P	0.5
7	☐	100.000					

y = 2.2446E-005 * x + 0.0012

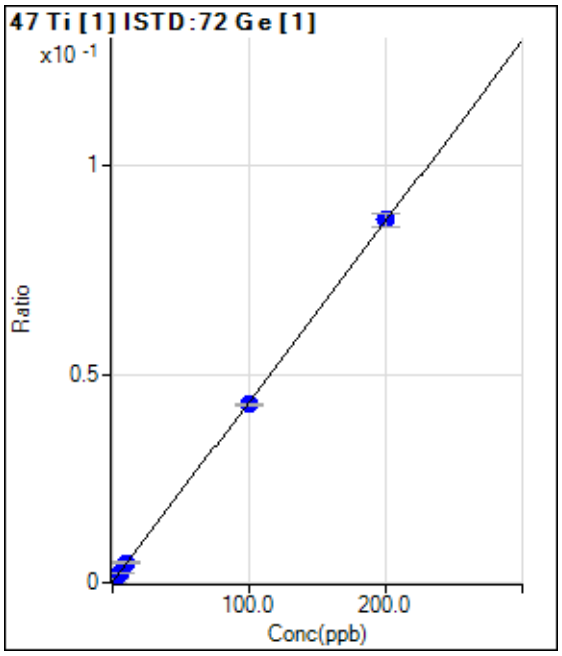
R = 0.9999

DL = 29.67

BEC = 52.49

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	161.12	0.0001	P	34.1
2	☐	2.000	2.159	1649.05	0.0010	P	7.3
3	☐	5.000	5.114	3835.05	0.0023	P	3.3
4	☐	10.000	10.638	7786.84	0.0047	P	7.5
5	☐	100.000	98.455	69327.07	0.0428	P	1.4
6	☐	200.000	200.736	138538.58	0.0871	P	3.8
7	☐	1.000					

y = 4.3351E-004 * x + 9.5946E-005

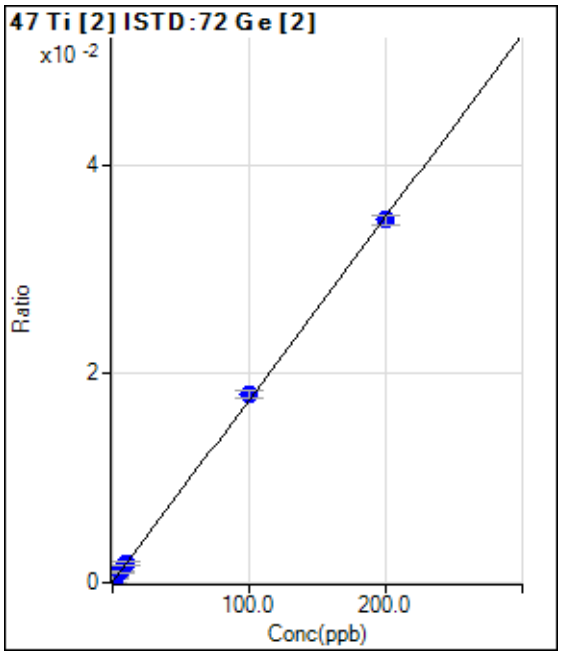
R = 0.9999

DL = 0.2266

BEC = 0.2213

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5.55	0.0000	P	125.
2	☐	2.000	2.468	92.23	0.0005	P	16.2
3	☐	5.000	6.027	216.68	0.0011	P	18.3
4	☐	10.000	10.667	377.80	0.0019	P	19.5
5	☐	100.000	102.812	3529.41	0.0180	P	4.1
6	☐	200.000	198.530	6831.64	0.0347	P	2.8
7	☐	1.000					

y = 1.7478E-004 * x + 2.7721E-005

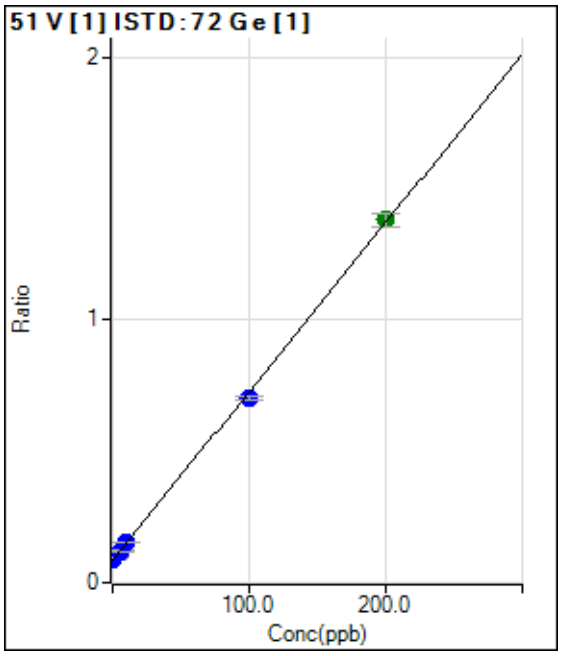
R = 0.9999

DL = 0.5967

BEC = 0.1586

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.211	144554.88	0.0866	P	2.3
2	☐	2.000	2.611	162980.61	0.1021	P	9.6
3	☐	5.000	5.369	198603.55	0.1198	P	2.2
4	☐	10.000	10.685	254951.86	0.1540	P	0.8
5	☐	100.000	96.347	1141643.11	0.7045	P	2.0
6	☐	200.000	201.777	2198117.23	1.3821	A	3.4
7	☐	1.000					

y = 0.0064 * x + 0.0853

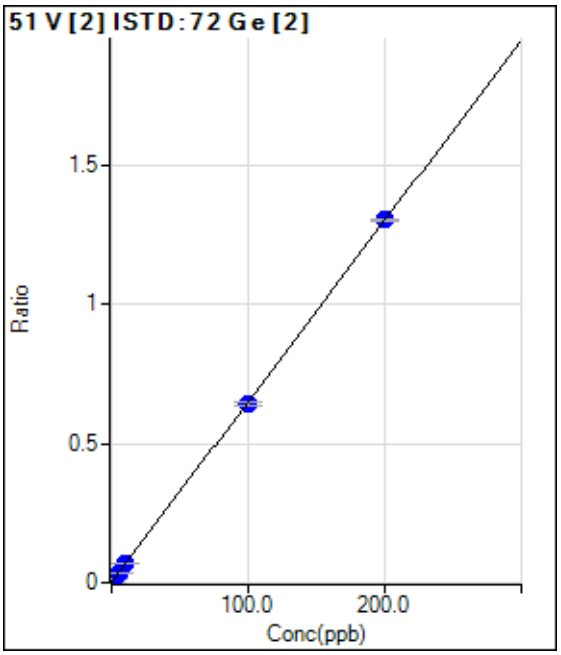
R = 0.9997

DL = 0.9191

BEC = 13.27

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.006	264.46	0.0013	P	6.0
2	☐	2.000	2.071	2958.17	0.0147	P	0.8
3	☐	5.000	5.044	6823.87	0.0340	P	3.1
4	☐	10.000	10.505	13879.50	0.0695	P	0.3
5	☐	100.000	98.804	126136.71	0.6433	P	1.5
6	☐	200.000	200.571	256646.88	1.3045	P	0.4
7	☐	1.000					

y = 0.0065 * x + 0.0013

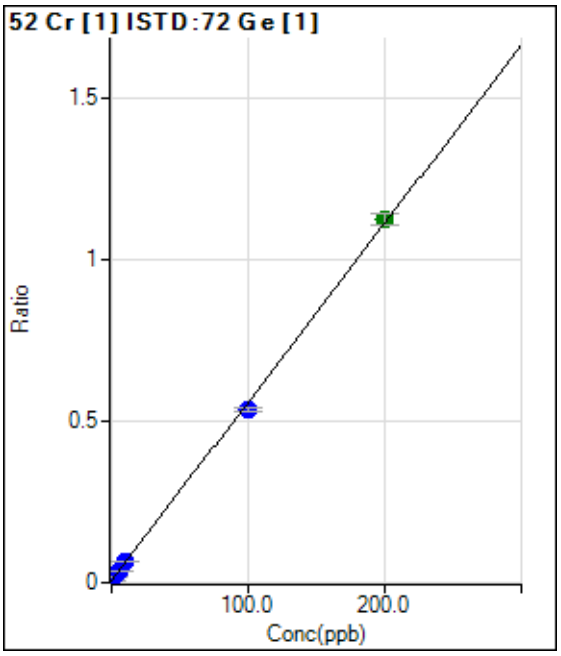
R = 1.0000

DL = 0.03623

BEC = 0.1956

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10664.91	0.0064	P	2.3
2	☐	2.000	2.246	30017.03	0.0188	P	8.3
3	☐	5.000	5.147	57681.86	0.0348	P	1.7
4	☐	10.000	10.354	105187.08	0.0635	P	2.3
5	☐	100.000	95.770	866724.57	0.5349	P	2.5
6	☐	200.000	202.091	1783799.75	1.1216	A	3.1
7	☐	1.000					

y = 0.0055 * x + 0.0064

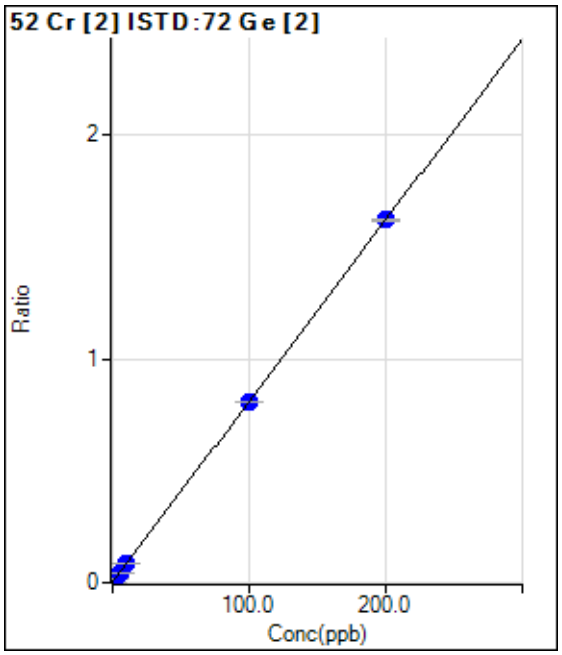
R = 0.9997

DL = 0.0794

BEC = 1.159

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	333.35	0.0017	P	14.9
2	☐	2.000	2.019	3613.89	0.0180	P	4.4
3	☐	5.000	5.309	8943.82	0.0446	P	0.8
4	☐	10.000	10.600	17451.70	0.0874	P	0.6
5	☐	100.000	99.464	158140.77	0.8065	P	0.6
6	☐	200.000	200.230	319064.46	1.6218	P	0.2
7	☐	1.000					

y = 0.0081 * x + 0.0017

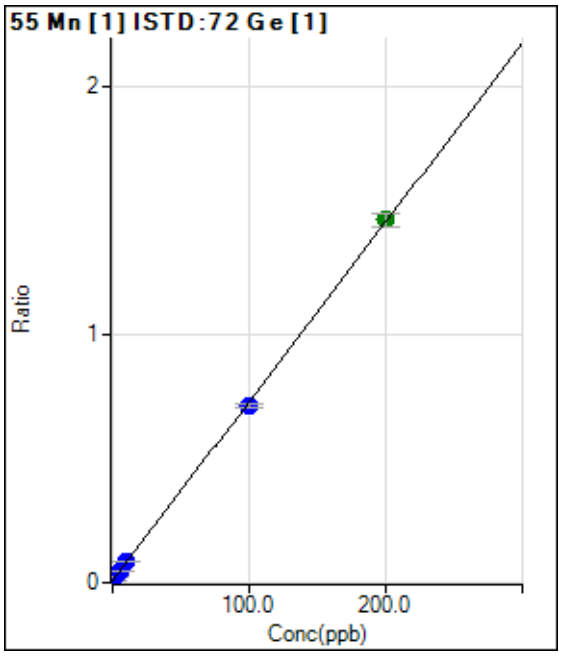
R = 1.0000

DL = 0.09135

BEC = 0.2043

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12937.67	0.0077	P	5.7
2	☐	2.000	2.288	38749.15	0.0243	P	10.0
3	☐	5.000	5.188	74945.84	0.0452	P	1.9
4	☐	10.000	10.375	136856.78	0.0827	P	1.4
5	☐	100.000	97.224	1149962.74	0.7097	P	2.4
6	☐	200.000	201.362	2324214.55	1.4615	A	3.7
7	☐	1.000					

y = 0.0072 * x + 0.0077

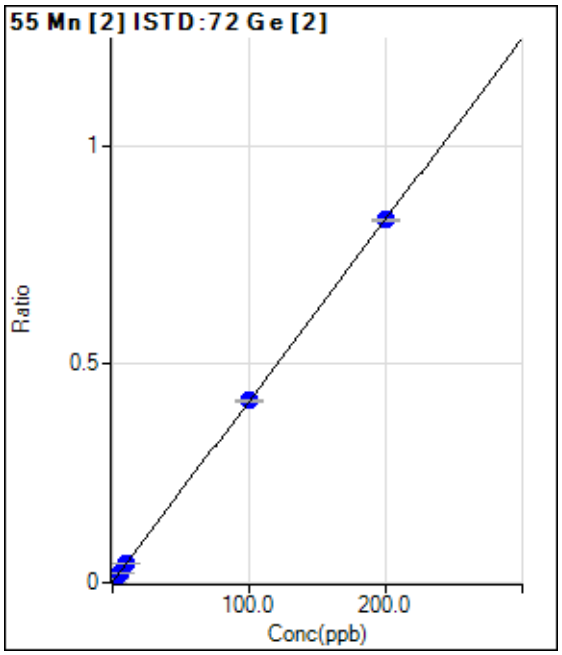
R = 0.9999

DL = 0.1834

BEC = 1.073

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	196.68	0.0010	P	11.4
2	☐	2.000	2.251	2072.45	0.0103	P	4.9
3	☐	5.000	5.285	4593.03	0.0229	P	3.7
4	☐	10.000	10.542	8929.40	0.0447	P	1.7
5	☐	100.000	100.372	81884.82	0.4176	P	1.2
6	☐	200.000	199.777	163318.55	0.8301	P	0.7
7	☐	1.000					

y = 0.0042 * x + 9.7445E-004

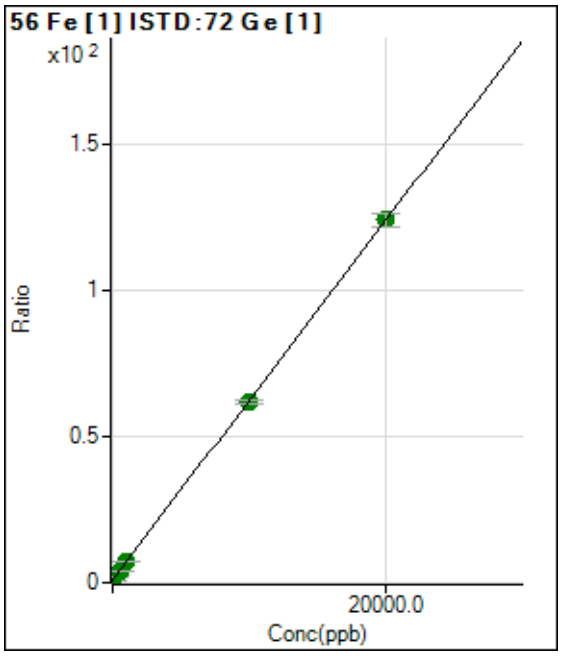
R = 1.0000

DL = 0.08053

BEC = 0.2348

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1531788.43	0.9187	A	1.3
2	☐	200.000	231.834	3743634.32	2.3412	A	5.2
3	☐	500.000	524.222	6853861.29	4.1352	A	1.9
4	☐	1000.000	1061.653	12303596.07	7.4327	A	2.9
5	☐	10000.00	9906.420	99985002.95	61.7015	A	2.2
6	☐	20000.00	20042.78	197034481.5	123.895	A	3.4
7	☐	100.000					

y = 0.0061 * x + 0.9187

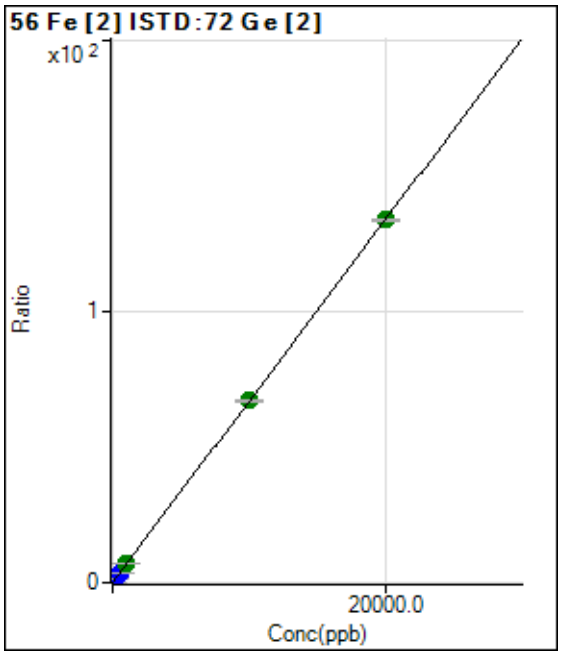
R = 1.0000

DL = 5.987

BEC = 149.7

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7795.49	0.0386	P	3.7
2	☐	200.000	204.942	282938.98	1.4084	P	0.3
3	☐	500.000	511.279	692813.93	3.4559	P	0.3
4	☐	1000.000	1083.621	1453545.99	7.2814	A	0.9
5	☐	10000.00	10017.83	13137730.92	66.9962	A	0.3
6	☐	20000.00	19986.57	26288894.33	133.625	A	0.3
7	☐	100.000					

y = 0.0067 * x + 0.0386

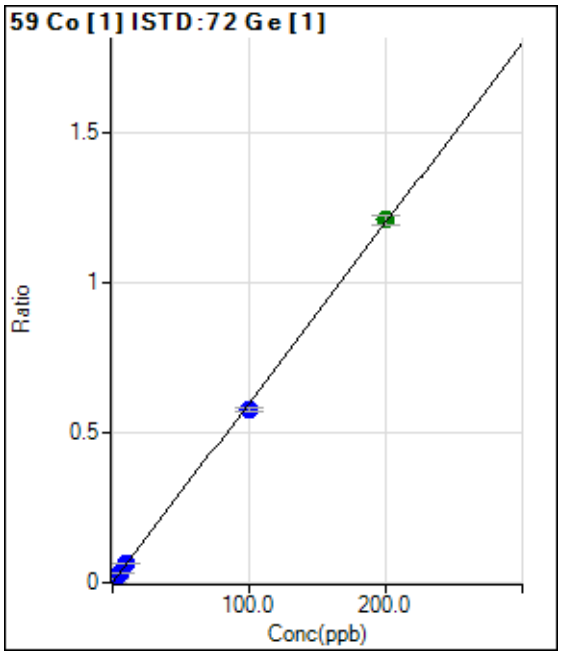
R = 1.0000

DL = 0.6434

BEC = 5.78

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	333.36	0.0002	P	5.7
2	☐	2.000	2.145	20907.96	0.0131	P	5.6
3	☐	5.000	5.103	51118.00	0.0308	P	2.1
4	☐	10.000	10.456	104258.87	0.0630	P	3.0
5	☐	100.000	96.526	939492.12	0.5798	P	2.5
6	☐	200.000	201.710	1926690.91	1.2114	A	3.0
7	☐	1.000					

y = 0.0060 * x + 1.9984E-004

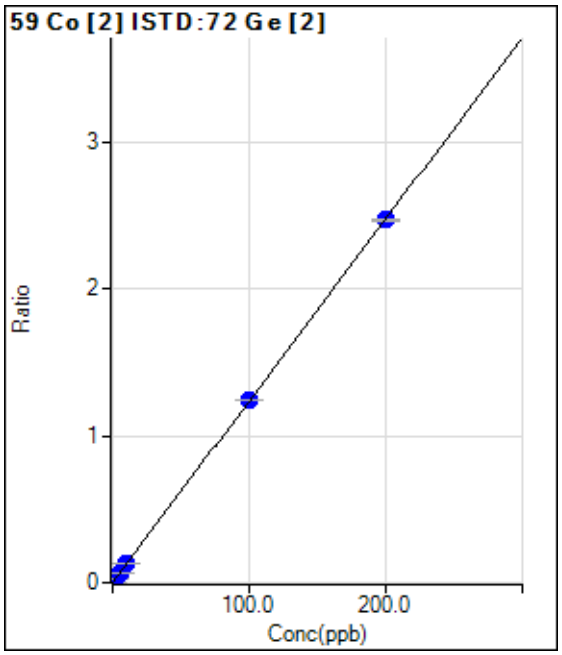
R = 0.9998

DL = 0.005676

BEC = 0.03328

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	47.78	0.0002	P	66.8
2	☐	2.000	2.088	5239.92	0.0261	P	3.1
3	☐	5.000	5.315	13233.38	0.0660	P	0.7
4	☐	10.000	10.619	26281.11	0.1317	P	1.2
5	☐	100.000	100.605	244190.00	1.2453	P	0.5
6	☐	200.000	199.658	486156.85	2.4711	P	0.6
7	☐	1.000					

y = 0.0124 * x + 2.3771E-004

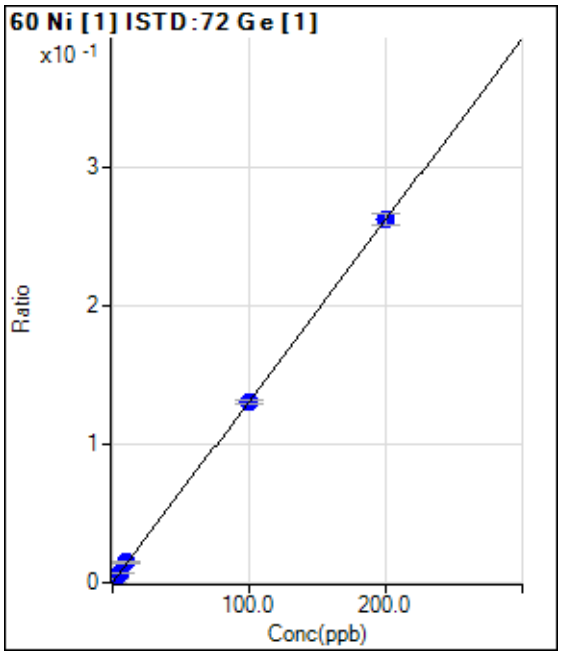
R = 1.0000

DL = 0.03852

BEC = 0.01921

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	147.79	0.0001	P	24.1
2	☐	2.000	2.283	4915.39	0.0031	P	7.8
3	☐	5.000	5.262	11557.72	0.0070	P	3.9
4	☐	10.000	11.094	24182.42	0.0146	P	2.7
5	☐	100.000	99.786	211730.71	0.1307	P	2.8
6	☐	200.000	200.043	416494.34	0.2619	P	3.1
7	☐	1.000					

y = 0.0013 * x + 8.8481E-005

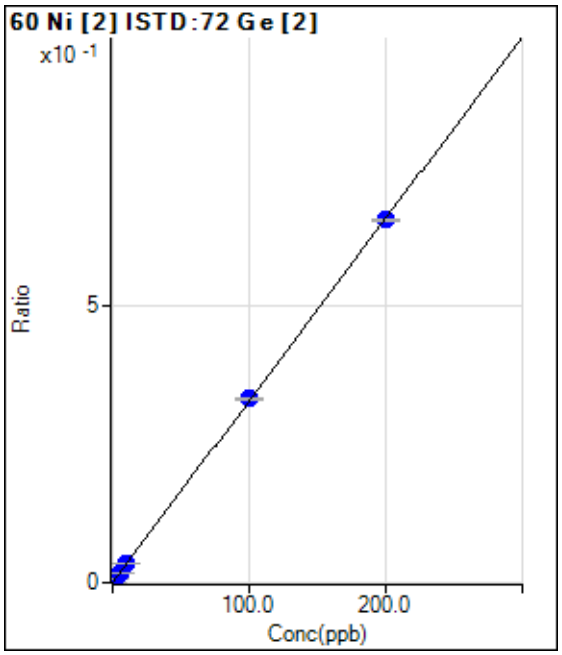
R = 1.0000

DL = 0.04882

BEC = 0.06761

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38.89	0.0002	P	30.9
2	☐	2.000	2.038	1382.34	0.0069	P	4.1
3	☐	5.000	5.425	3607.21	0.0180	P	0.5
4	☐	10.000	10.820	7125.10	0.0357	P	1.9
5	☐	100.000	101.050	65052.12	0.3317	P	0.6
6	☐	200.000	199.423	128765.47	0.6545	P	0.4
7	☐	1.000					

y = 0.0033 * x + 1.9304E-004

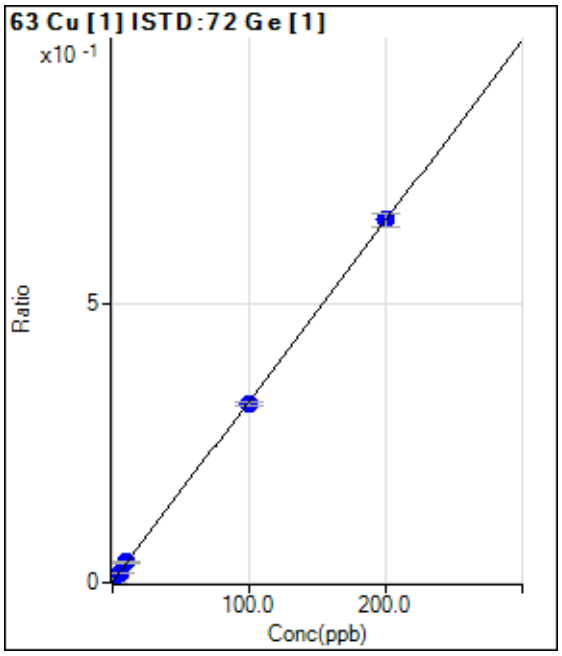
R = 1.0000

DL = 0.05446

BEC = 0.05884

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2799.25	0.0017	P	3.8
2	☐	2.000	2.166	13869.49	0.0087	P	5.3
3	☐	5.000	5.167	30441.39	0.0184	P	1.8
4	☐	10.000	10.692	59957.23	0.0362	P	2.3
5	☐	100.000	98.917	520499.58	0.3212	P	2.3
6	☐	200.000	200.501	1032576.58	0.6493	P	4.1
7	☐	1.000					

y = 0.0032 * x + 0.0017

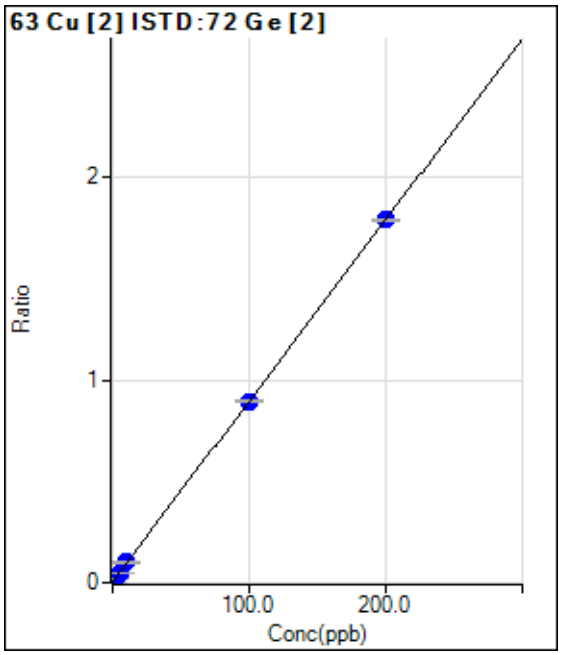
R = 1.0000

DL = 0.05948

BEC = 0.5192

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	782.28	0.0039	P	11.9
2	☐	2.000	2.002	4367.43	0.0217	P	3.9
3	☐	5.000	5.180	10043.43	0.0501	P	2.7
4	☐	10.000	10.782	19980.18	0.1001	P	1.8
5	☐	100.000	99.805	175380.46	0.8944	P	1.1
6	☐	200.000	200.054	351939.28	1.7889	P	0.7
7	☐	1.000					

y = 0.0089 * x + 0.0039

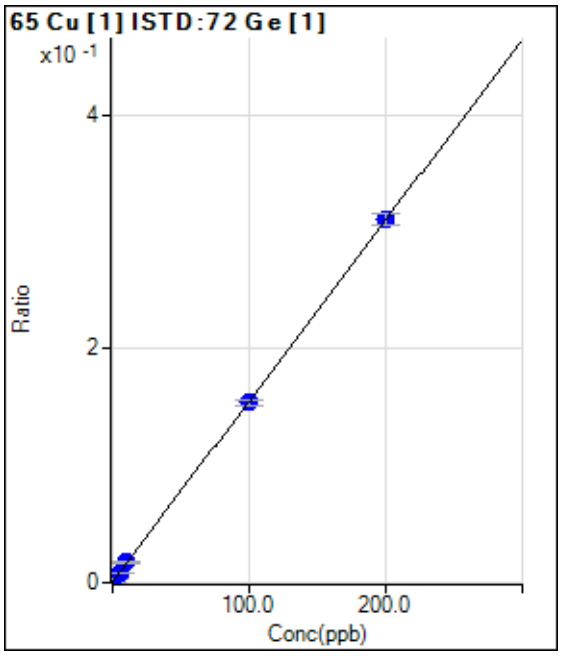
R = 1.0000

DL = 0.1558

BEC = 0.4348

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1184.54	0.0007	P	4.2
2	☐	2.000	2.246	6673.82	0.0042	P	11.0
3	☐	5.000	5.224	14560.15	0.0088	P	1.0
4	☐	10.000	10.728	28618.26	0.0173	P	2.5
5	☐	100.000	99.297	249755.21	0.1541	P	3.0
6	☐	200.000	200.307	493378.60	0.3102	P	3.3
7	☐	1.000					

y = 0.0015 * x + 7.1089E-004

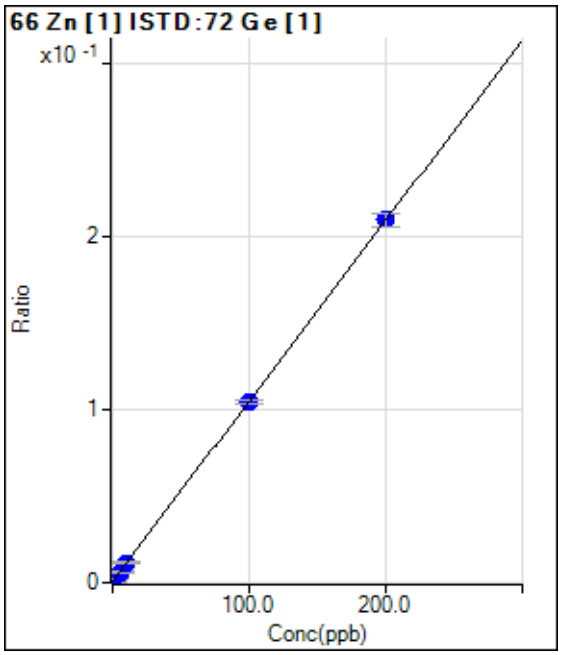
R = 1.0000

DL = 0.05765

BEC = 0.4601

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.172	887.84	0.0005	P	19.6
2	☐	2.000	2.119	4665.29	0.0029	P	10.1
3	☐	5.000	5.133	10060.07	0.0061	P	3.2
4	☐	10.000	10.396	19139.28	0.0116	P	2.7
5	☐	100.000	99.095	168776.24	0.1042	P	2.1
6	☐	200.000	200.428	333851.15	0.2099	P	3.6
7	☐	1.000					

y = 0.0010 * x + 7.0968E-004

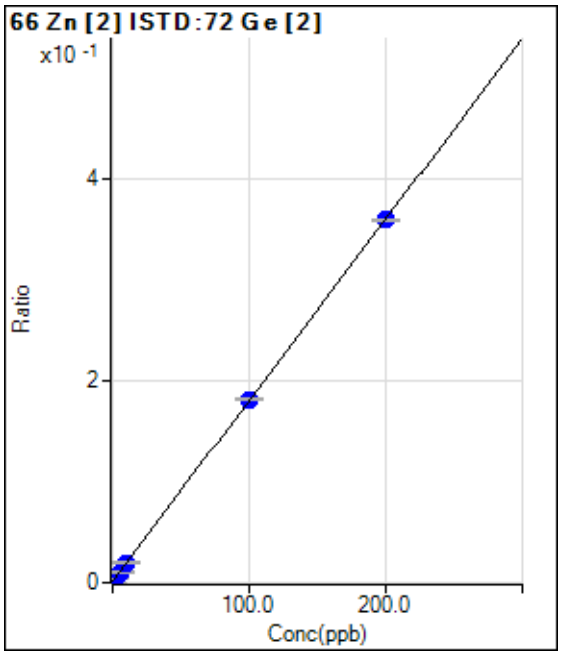
R = 1.0000

DL = 0.299

BEC = 0.6799

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.277	156.68	0.0008	P	14.1
2	☐	2.000	1.856	924.52	0.0046	P	2.4
3	☐	5.000	5.021	2060.22	0.0103	P	4.9
4	☐	10.000	10.206	3909.53	0.0196	P	6.0
5	☐	100.000	100.408	35564.61	0.1814	P	1.4
6	☐	200.000	199.787	70750.60	0.3596	P	0.5
7	☐	1.000					

y = 0.0018 * x + 0.0013

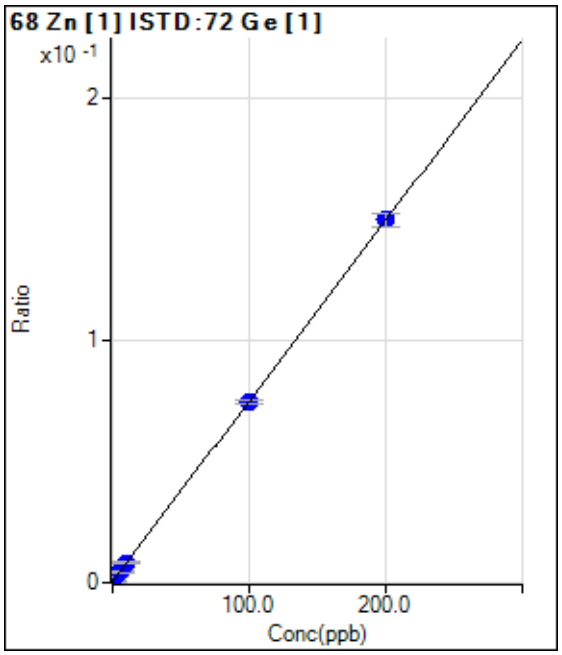
R = 1.0000

DL = 0.1834

BEC = 0.7101

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	661.16	0.0004	P	6.6
2	☐	2.000	2.433	3529.40	0.0022	P	6.8
3	☐	5.000	5.372	7282.98	0.0044	P	5.0
4	☐	10.000	10.547	13654.96	0.0082	P	3.1
5	☐	100.000	99.202	120352.20	0.0743	P	2.1
6	☐	200.000	200.358	237875.29	0.1496	P	3.7
7	☐	1.000					

y = 7.4460E-004 * x + 3.9589E-004

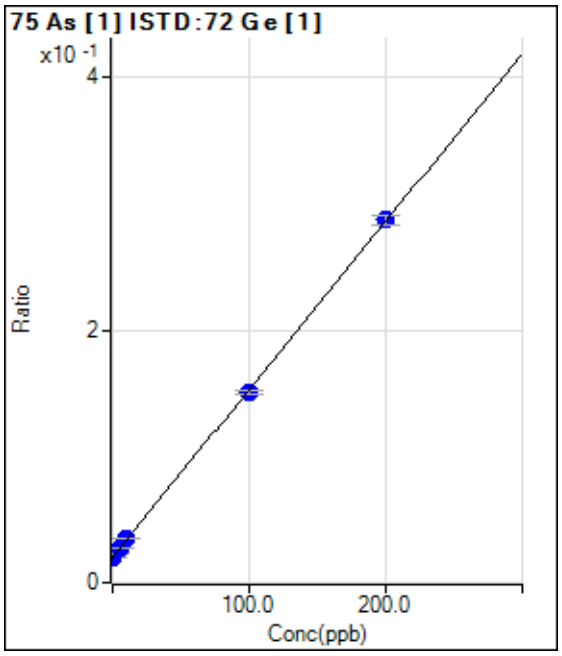
R = 1.0000

DL = 0.1057

BEC = 0.5317

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	33774.33	0.0202	P	1.7
2	☐	2.000	2.557	37741.17	0.0236	P	10.2
3	☐	5.000	5.171	44948.46	0.0271	P	2.2
4	☐	10.000	10.896	57492.09	0.0347	P	1.0
5	☐	100.000	97.879	243504.35	0.1503	P	1.8
6	☐	200.000	201.006	456856.54	0.2872	P	2.9
7	☐	1.000					

y = 0.0013 * x + 0.0202

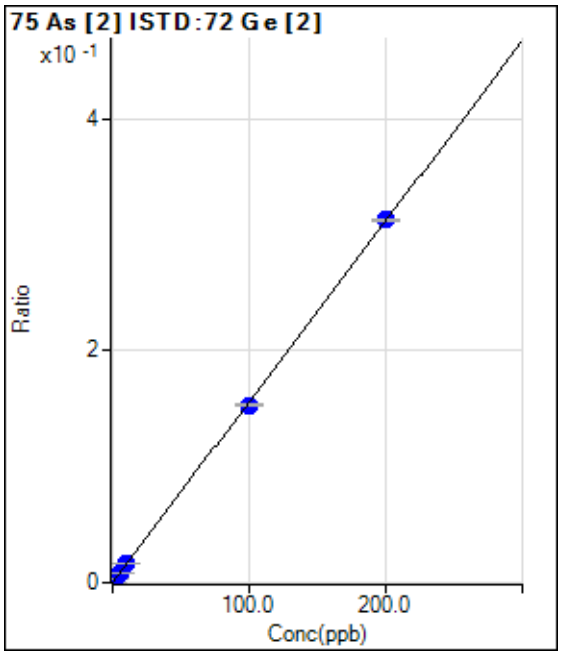
R = 0.9999

DL = 0.7785

BEC = 15.24

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27.41	0.0001	P	13.5
2	☐	2.000	2.115	688.55	0.0034	P	5.4
3	☐	5.000	5.282	1674.92	0.0084	P	4.8
4	☐	10.000	10.623	3327.42	0.0167	P	3.5
5	☐	100.000	98.359	30038.51	0.1532	P	1.1
6	☐	200.000	200.781	61492.31	0.3126	P	0.5
7	☐	1.000					

y = 0.0016 * x + 1.3589E-004

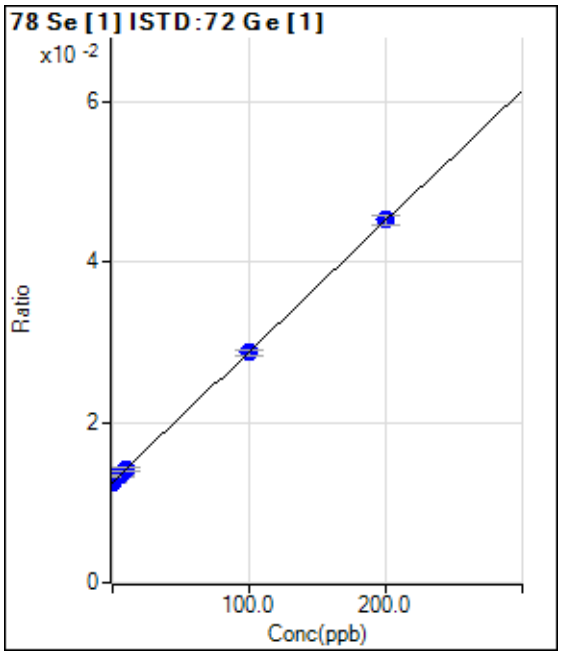
R = 0.9999

DL = 0.03542

BEC = 0.08733

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20970.89	0.0126	P	2.2
2	☐	2.000	5.338	21509.33	0.0135	P	5.1
3	☐	5.000	5.033	22210.23	0.0134	P	2.4
4	☐	10.000	9.282	23331.38	0.0141	P	2.7
5	☐	100.000	98.847	46511.18	0.0287	P	2.3
6	☐	200.000	200.578	72045.80	0.0453	P	2.6
7	☐	1.000					

y = 1.6311E-004 * x + 0.0126

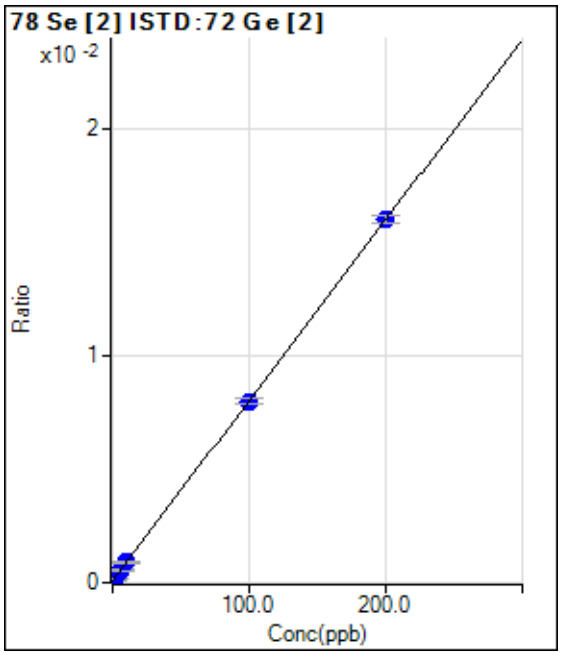
R = 0.9998

DL = 5.13

BEC = 77.13

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15.93	0.0001	P	14.7
2	☐	2.000	1.514	40.00	0.0002	P	9.8
3	☐	5.000	5.784	107.78	0.0005	P	16.8
4	☐	10.000	10.481	181.85	0.0009	P	9.0
5	☐	100.000	99.722	1567.51	0.0080	P	3.4
6	☐	200.000	200.100	3140.34	0.0160	P	2.0
7	☐	1.000					

y = 7.9375E-005 * x + 7.8947E-005

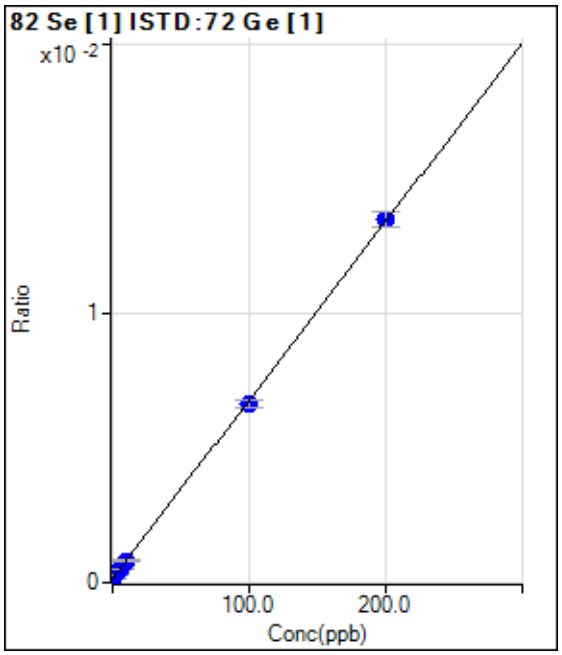
R = 1.0000

DL = 0.4374

BEC = 0.9946

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	245.93	0.0001	P	6.9
2	☐	2.000	2.376	488.16	0.0003	P	1.3
3	☐	5.000	5.196	814.85	0.0005	P	5.3
4	☐	10.000	9.901	1330.44	0.0008	P	4.7
5	☐	100.000	97.998	10765.03	0.0066	P	3.6
6	☐	200.000	200.998	21423.35	0.0135	P	4.3
7	☐	1.000					

y = 6.6295E-005 * x + 1.4730E-004

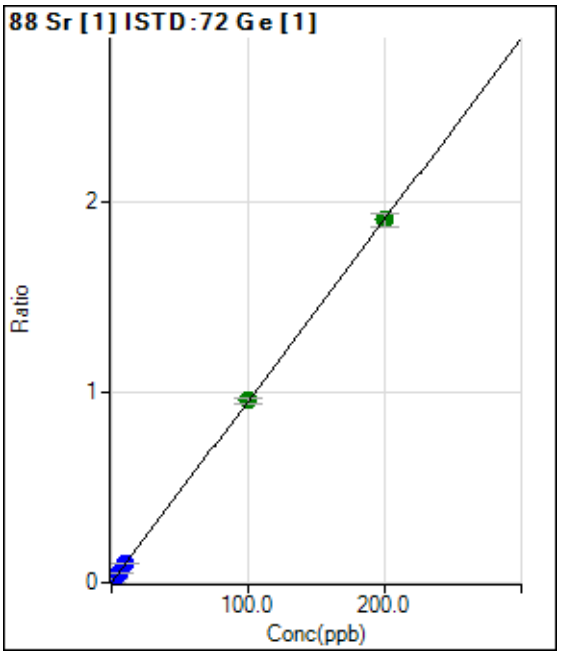
R = 0.9999

DL = 0.4627

BEC = 2.222

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1613.50	0.0010	P	29.4
2	☐	2.000	2.138	34149.09	0.0214	P	6.8
3	☐	5.000	5.047	81418.60	0.0491	P	1.4
4	☐	10.000	10.141	161775.15	0.0977	P	3.2
5	☐	100.000	100.225	1551268.02	0.9574	A	2.9
6	☐	200.000	199.878	3034745.37	1.9083	A	3.8
7	☐	1.000					

y = 0.0095 * x + 9.6150E-004

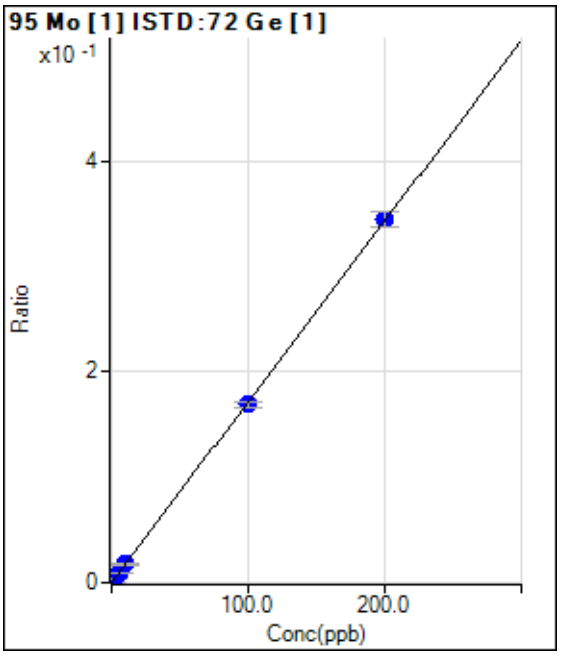
R = 1.0000

DL = 0.08891

BEC = 0.1008

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	211.12	0.0001	P	14.2
2	☐	2.000	2.189	6208.09	0.0039	P	4.8
3	☐	5.000	5.117	14760.48	0.0089	P	1.6
4	☐	10.000	10.257	29323.44	0.0177	P	5.2
5	☐	100.000	98.435	273829.51	0.1690	P	2.7
6	☐	200.000	200.765	547905.26	0.3445	P	4.1
7	☐	1.000					

y = 0.0017 * x + 1.2621E-004

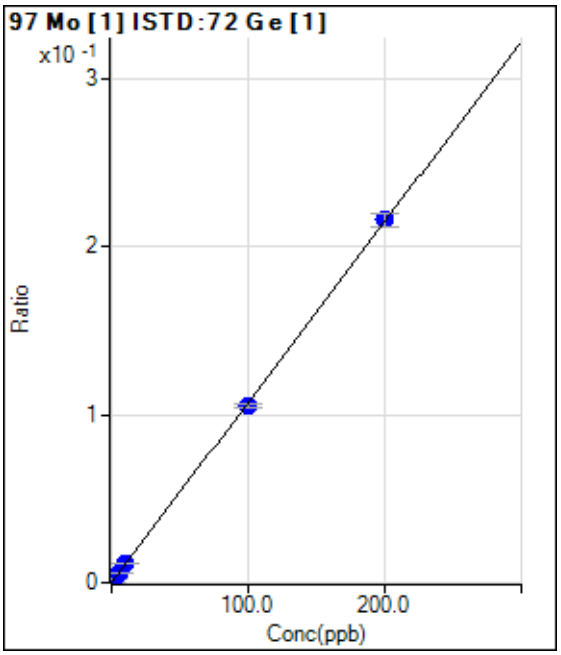
R = 1.0000

DL = 0.03138

BEC = 0.07357

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	133.34	0.0001	P	42.1
2	☐	2.000	2.142	3807.28	0.0024	P	5.8
3	☐	5.000	5.041	9106.20	0.0055	P	4.7
4	☐	10.000	10.287	18424.27	0.0111	P	3.5
5	☐	100.000	97.875	170516.54	0.1052	P	2.8
6	☐	200.000	201.046	343637.77	0.2161	P	3.6
7	☐	1.000					

y = 0.0011 * x + 7.9238E-005

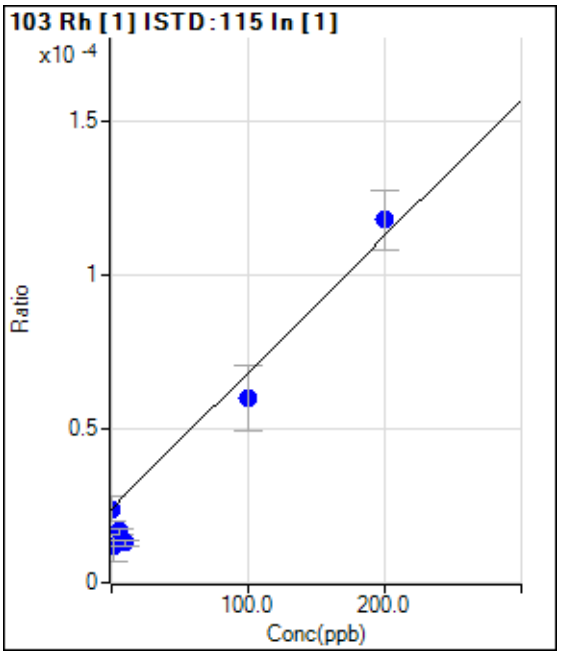
R = 0.9999

DL = 0.09308

BEC = 0.07375

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43.34	0.0000	P	34.9
2	☐	2.000	-27.061	21.11	0.0000	P	88.8
3	☐	5.000	-16.420	30.00	0.0000	P	10.5
4	☐	10.000	-24.891	23.33	0.0000	P	13.8
5	☐	100.000	81.249	105.56	0.0001	P	35.6
6	☐	200.000	211.946	203.34	0.0001	P	16.8
7	☐	1.000					

y = 4.4281E-007 * x + 2.4036E-005

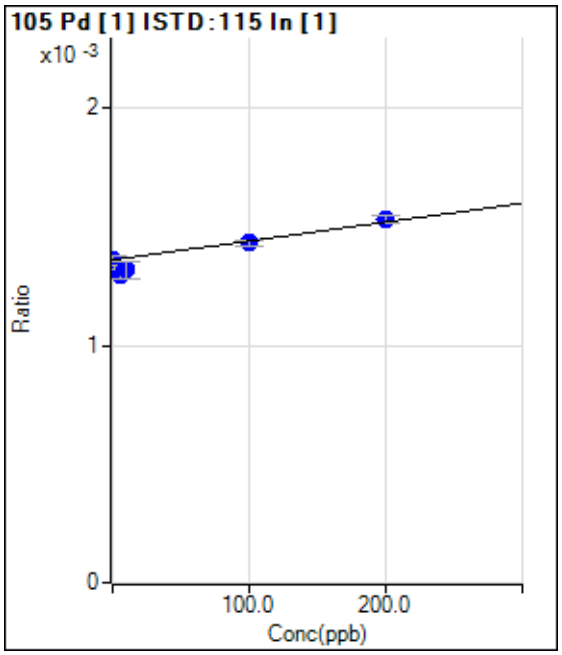
R = 0.9900

DL = 56.82

BEC = 54.28

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2462.51	0.0014	P	2.7
2	☐	2.000	-58.497	2269.16	0.0013	P	3.3
3	☐	5.000	-78.666	2321.39	0.0013	P	3.0
4	☐	10.000	-52.496	2363.61	0.0013	P	5.8
5	☐	100.000	89.154	2525.87	0.0014	P	1.5
6	☐	200.000	211.245	2635.90	0.0015	P	2.0
7	☐	1.000					

y = 7.9499E-007 * x + 0.0014

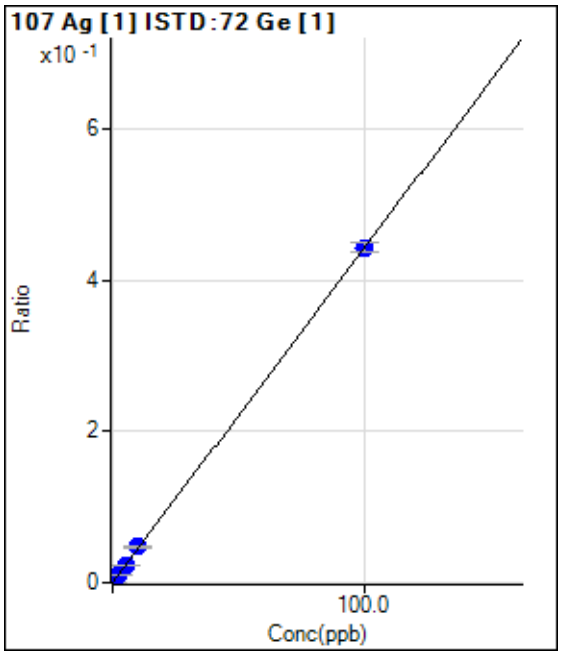
R = 0.9664

DL = 136.2

BEC = 1711

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	107.78	0.0001	P	42.8
2	☐	2.000	2.134	15262.06	0.0095	P	2.7
3	☐	5.000	5.158	38053.69	0.0230	P	1.4
4	☐	10.000	10.666	78460.63	0.0474	P	3.4
5	☐	100.000	99.923	718656.55	0.4435	P	2.9
6	☐			1507674.11	0.9480	A	3.6
7	☐	1.000					

y = 0.0044 * x + 6.5027E-005

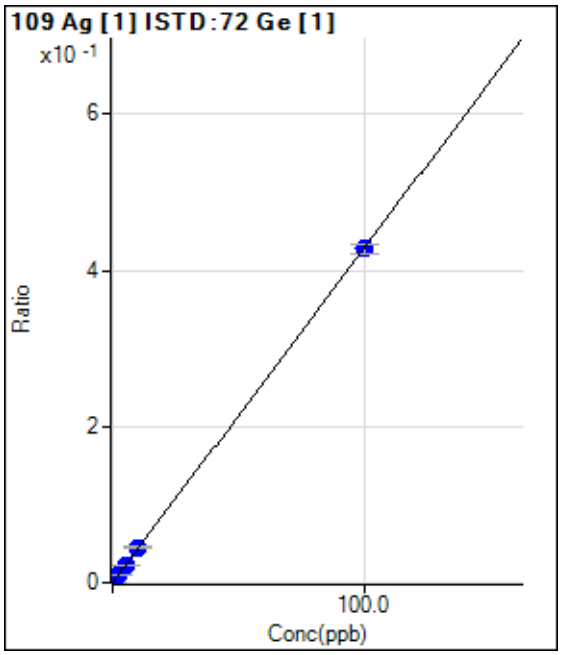
R = 1.0000

DL = 0.01882

BEC = 0.01465

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	100.01	0.0001	P	22.1
2	☐	2.000	2.144	14768.37	0.0092	P	3.6
3	☐	5.000	5.264	37415.80	0.0226	P	1.9
4	☐	10.000	10.524	74612.25	0.0451	P	2.5
5	☐	100.000	99.932	692599.55	0.4274	P	2.6
6	☐			1430608.85	0.9000	M	6.5
7	☐	1.000					

y = 0.0043 * x + 5.9858E-005

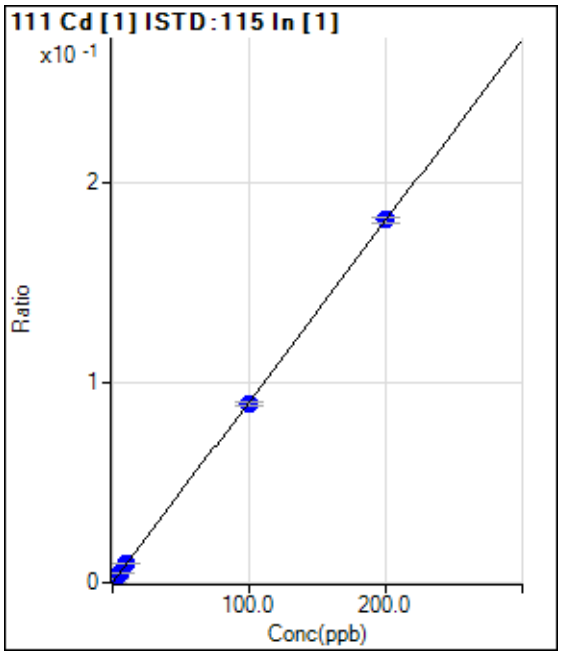
R = 1.0000

DL = 0.009265

BEC = 0.014

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.00	0.0000	P	87.8
2	☐	2.000	2.202	3450.52	0.0020	P	1.9
3	☐	5.000	5.095	8266.92	0.0046	P	2.1
4	☐	10.000	10.616	17243.07	0.0096	P	3.1
5	☐	100.000	98.968	158205.91	0.0897	P	2.9
6	☐	200.000	200.481	313182.94	0.1817	P	1.9
7	☐	1.000					

y = 9.0605E-004 * x + 5.4750E-006

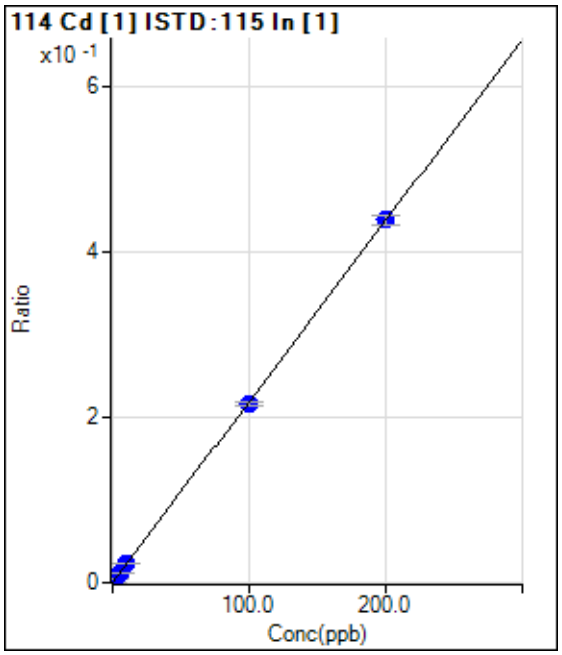
R = 1.0000

DL = 0.01593

BEC = 0.006043

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	62.23	0.0000	P	2.3
2	☐	2.000	2.161	8203.49	0.0048	P	1.6
3	☐	5.000	5.182	20317.75	0.0114	P	2.3
4	☐	10.000	10.366	40653.50	0.0227	P	2.2
5	☐	100.000	99.075	382039.69	0.2165	P	2.1
6	☐	200.000	200.438	755171.54	0.4380	P	2.7
7	☐	1.000					

y = 0.0022 * x + 3.4365E-005

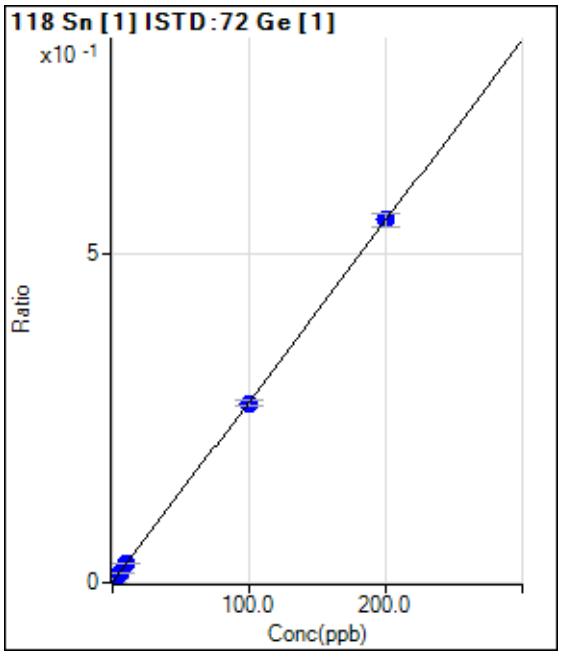
R = 1.0000

DL = 0.001071

BEC = 0.01573

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	748.94	0.0004	P	7.5
2	☐	2.000	2.100	9925.65	0.0062	P	7.2
3	☐	5.000	4.996	23458.69	0.0142	P	2.6
4	☐	10.000	10.232	47205.61	0.0285	P	3.1
5	☐	100.000	98.974	440614.83	0.2720	P	3.3
6	☐	200.000	200.501	875408.75	0.5505	P	3.5
7	☐	1.000					

y = 0.0027 * x + 4.4899E-004

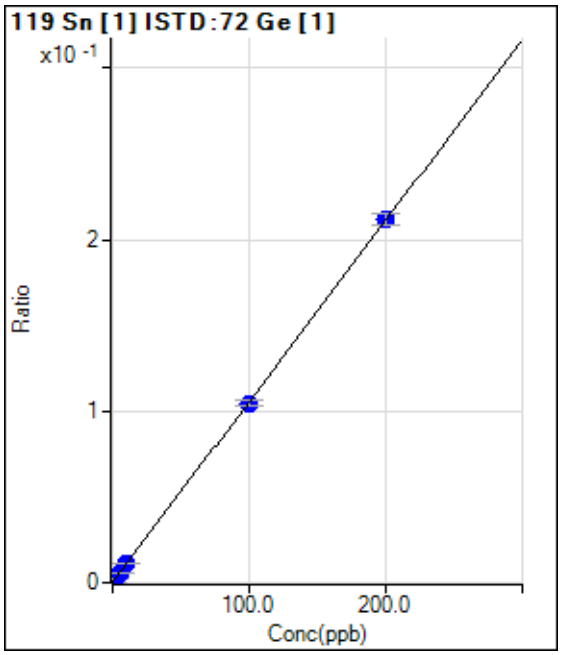
R = 1.0000

DL = 0.03672

BEC = 0.1637

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	308.90	0.0002	P	4.2
2	☐	2.000	2.011	3686.14	0.0023	P	5.9
3	☐	5.000	5.010	9066.27	0.0055	P	3.1
4	☐	10.000	10.151	18021.73	0.0109	P	3.3
5	☐	100.000	99.147	169658.44	0.1047	P	2.7
6	☐	200.000	200.419	336313.68	0.2115	P	3.3
7	☐	1.000					

y = 0.0011 * x + 1.8532E-004

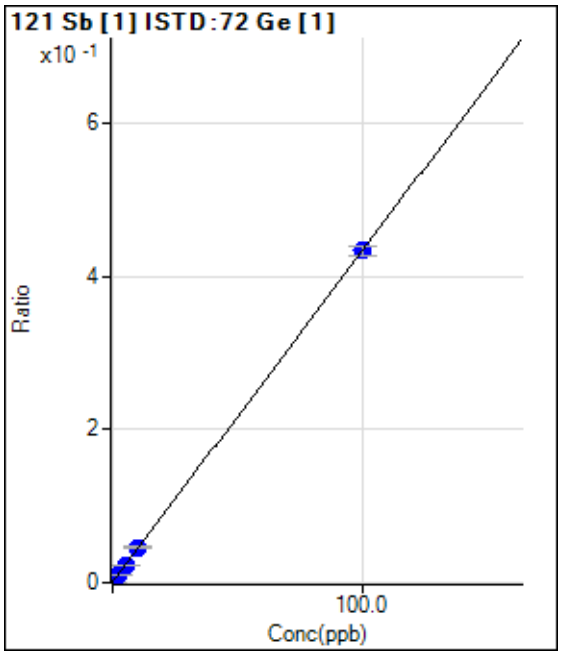
R = 1.0000

DL = 0.02215

BEC = 0.1758

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	949.30	0.0006	P	2.5
2	☐	2.000	2.144	15738.06	0.0098	P	6.2
3	☐	5.000	5.151	37887.80	0.0229	P	1.5
4	☐	10.000	10.433	75662.20	0.0457	P	3.4
5	☐	100.000	99.946	701609.09	0.4330	P	2.9
6	☐			1492689.54	0.9387	A	4.1
7	☐	1.000					

y = 0.0043 * x + 5.6952E-004

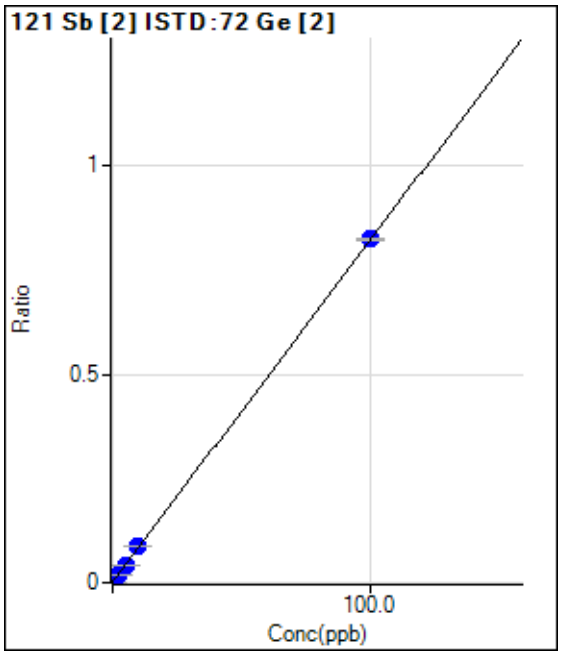
R = 1.0000

DL = 0.00991

BEC = 0.1316

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	227.79	0.0011	P	8.5
2	☐	2.000	2.068	3648.97	0.0182	P	2.0
3	☐	5.000	5.139	8713.55	0.0435	P	1.0
4	☐	10.000	10.374	17285.18	0.0866	P	1.1
5	☐	100.000	99.954	161686.58	0.8245	P	0.6
6	☐			327431.53	1.6643	P	0.5
7	☐	1.000					

y = 0.0082 * x + 0.0011

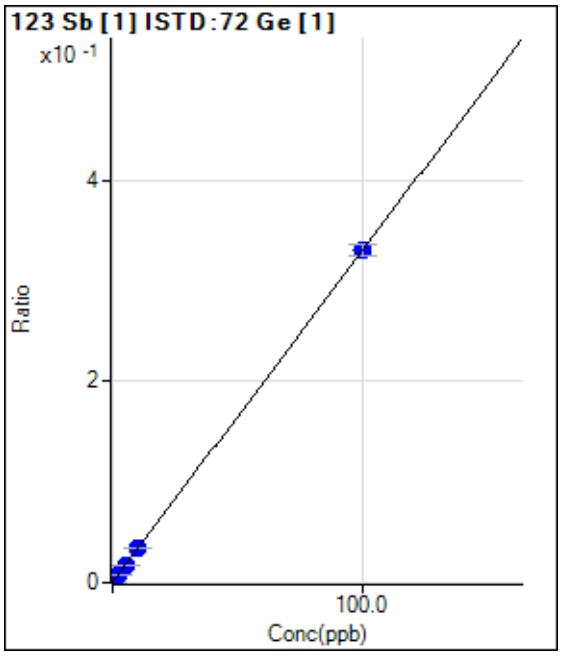
R = 1.0000

DL = 0.03485

BEC = 0.137

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	730.40	0.0004	P	4.5
2	☐	2.000	2.124	11907.80	0.0075	P	7.4
3	☐	5.000	5.094	28605.08	0.0173	P	1.9
4	☐	10.000	10.368	57391.81	0.0347	P	3.0
5	☐	100.000	99.956	535485.19	0.3305	P	2.9
6	☐			1079215.56	0.6786	P	3.7
7	☐	1.000					

y = 0.0033 * x + 4.3793E-004

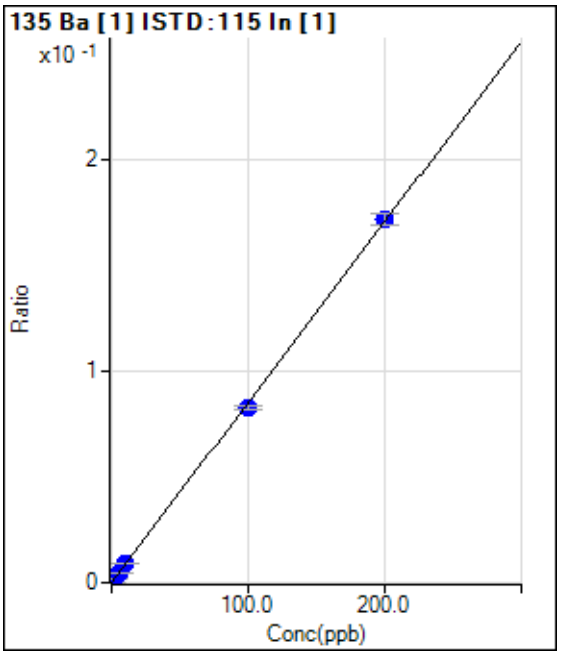
R = 1.0000

DL = 0.01786

BEC = 0.1326

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	187.79	0.0001	P	13.8
2	☐	2.000	2.142	3314.94	0.0019	P	7.0
3	☐	5.000	5.234	8149.09	0.0046	P	1.3
4	☐	10.000	10.418	16064.24	0.0090	P	2.4
5	☐	100.000	97.462	146448.73	0.0830	P	2.2
6	☐	200.000	201.241	295268.60	0.1713	P	3.3
7	☐	1.000					

y = 8.5061E-004 * x + 1.0357E-004

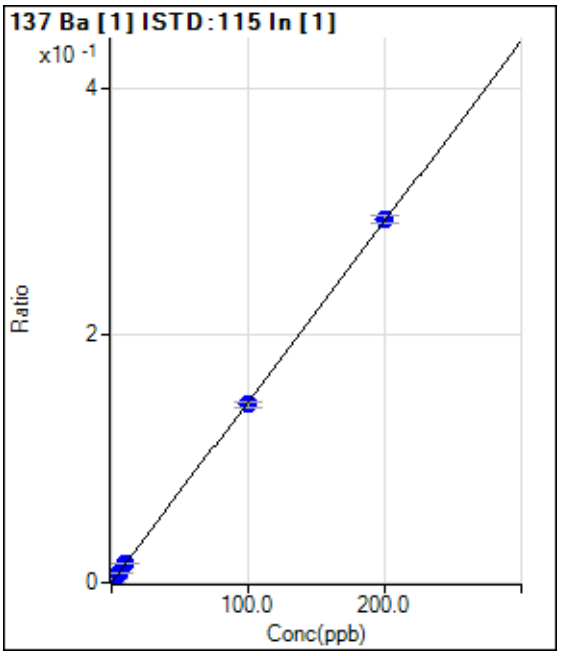
R = 0.9999

DL = 0.05056

BEC = 0.1218

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	311.13	0.0002	P	21.7
2	☐	2.000	2.112	5611.23	0.0033	P	5.0
3	☐	5.000	5.130	13709.76	0.0077	P	4.6
4	☐	10.000	10.319	27319.62	0.0152	P	1.6
5	☐	100.000	98.386	253896.45	0.1439	P	2.2
6	☐	200.000	200.786	506017.06	0.2935	P	2.2
7	☐	1.000					

y = 0.0015 * x + 1.7142E-004

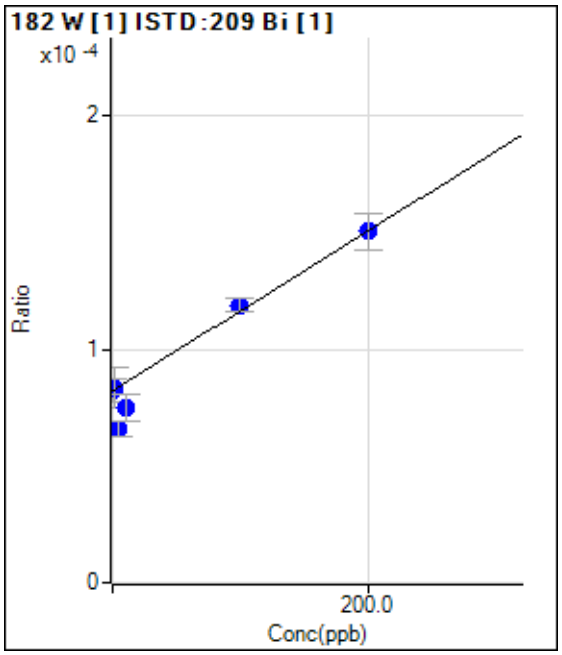
R = 1.0000

DL = 0.07637

BEC = 0.1173

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	141.12	0.0001	P	11.8
2	☐	2.000	3.955	136.68	0.0001	P	19.9
3	☐	5.000	-48.543	111.12	0.0001	P	9.7
4	☐	10.000	-20.359	128.89	0.0001	P	15.5
5	☐	100.000	107.220	201.12	0.0001	P	5.3
6	☐	200.000	199.227	251.13	0.0002	P	10.6
7	☐	1.000					

y = 3.4229E-007 * x + 8.2314E-005

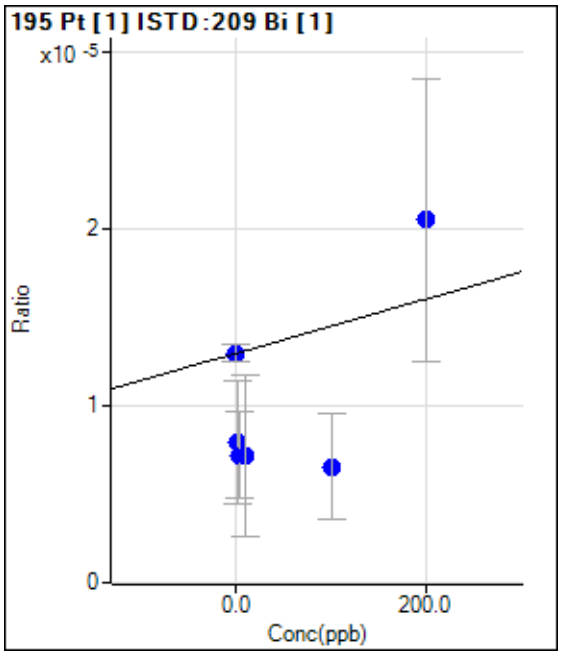
R = 0.9723

DL = 84.91

BEC = 240.5

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22.22	0.0000	P	7.3
2	☐	2.000	-327.382	13.33	0.0000	P	88.1
3	☐	5.000	-371.998	12.22	0.0000	P	68.7
4	☐	10.000	-373.102	12.22	0.0000	P	126.
5	☐	100.000	-414.538	11.11	0.0000	P	92.4
6	☐	200.000	489.143	34.44	0.0000	P	78.0
7	☐	1.000					

y = 1.5430E-008 * x + 1.2965E-005

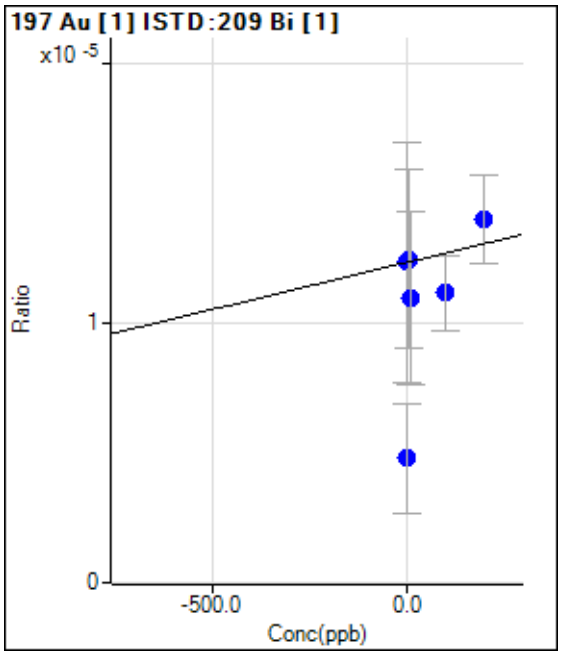
R = 0.7093

DL = 183.4

BEC = 840.3

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21.11	0.0000	P	75.2
2	☐	2.000	-2084.325	7.78	0.0000	P	87.5
3	☐	5.000	37.720	21.11	0.0000	P	55.5
4	☐	10.000	-378.381	18.89	0.0000	P	60.9
5	☐	100.000	-328.846	18.89	0.0000	P	25.8
6	☐	200.000	453.887	23.33	0.0000	P	24.3
7	☐	1.000					

y = 3.6154E-009 * x + 1.2349E-005

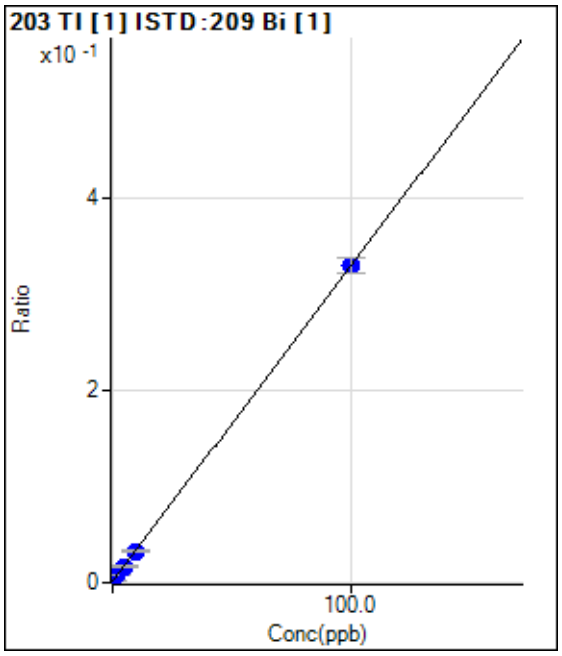
R = 0.4744

DL = 7708

BEC = 3416

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2201.67	0.0013	P	11.5
2	☐	2.000	1.878	12237.95	0.0075	P	3.6
3	☐	5.000	4.677	28225.18	0.0167	P	5.1
4	☐	10.000	9.644	56491.89	0.0330	P	6.7
5	☐	100.000	100.054	558415.29	0.3308	P	4.9
6	☐			1112892.20	0.6678	P	4.5
7	☐	1.000					

y = 0.0033 * x + 0.0013

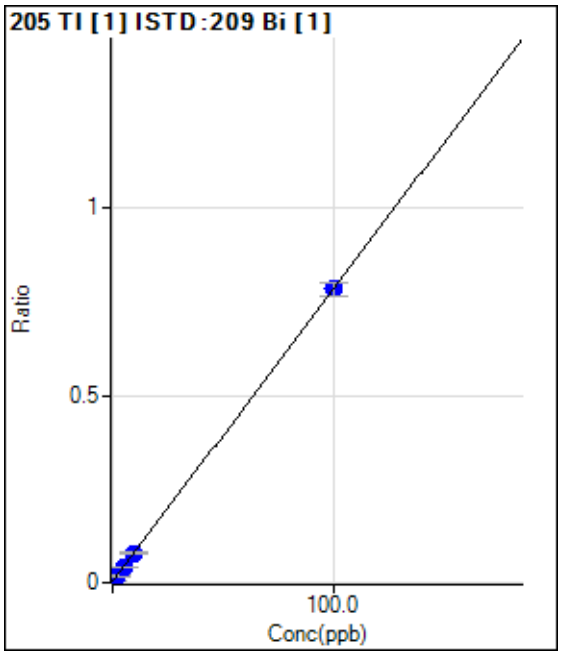
R = 1.0000

DL = 0.1349

BEC = 0.3908

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5160.94	0.0030	P	10.0
2	☐	2.000	1.893	29157.35	0.0178	P	2.4
3	☐	5.000	4.698	67098.67	0.0397	P	5.9
4	☐	10.000	9.629	133598.87	0.0782	P	6.6
5	☐	100.000	100.054	1323106.33	0.7838	P	4.8
6	☐			2824880.07	1.6951	A	4.6
7	☐	1.000					

y = 0.0078 * x + 0.0030

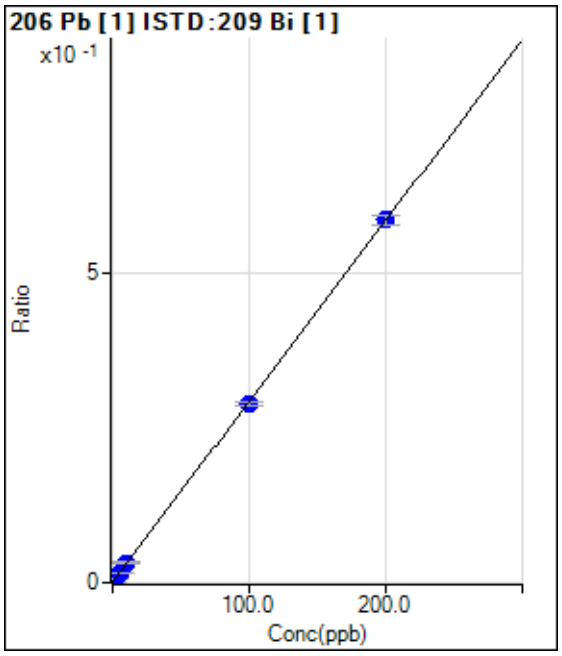
R = 1.0000

DL = 0.1161

BEC = 0.3866

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1870.22	0.0011	P	33.7
2	☐	2.000	2.232	12416.68	0.0076	P	10.0
3	☐	5.000	5.257	27796.16	0.0164	P	3.1
4	☐	10.000	10.766	55608.20	0.0325	P	1.1
5	☐	100.000	99.072	490156.41	0.2903	P	2.1
6	☐	200.000	200.417	976720.78	0.5861	P	2.8
7	☐	1.000					

y = 0.0029 * x + 0.0011

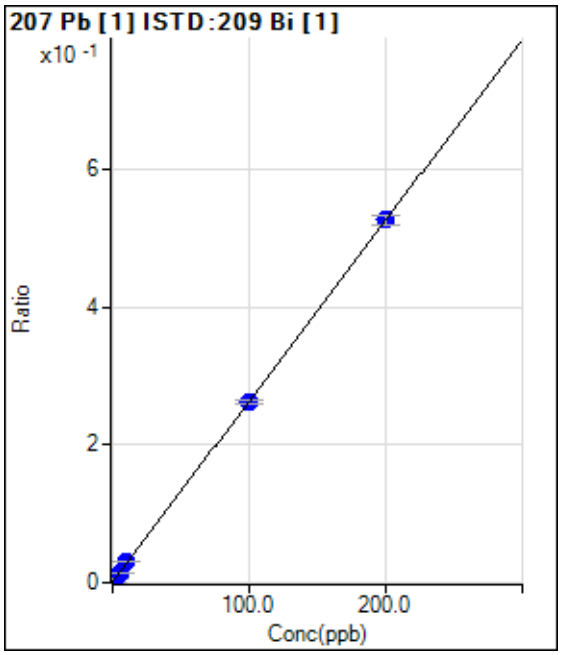
R = 1.0000

DL = 0.3768

BEC = 0.3727

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1635.74	0.0010	P	32.7
2	☐	2.000	2.167	10824.31	0.0066	P	14.0
3	☐	5.000	5.314	25198.19	0.0149	P	0.4
4	☐	10.000	10.950	50776.41	0.0297	P	1.4
5	☐	100.000	99.190	441172.92	0.2613	P	2.0
6	☐	200.000	200.348	877820.19	0.5267	P	2.4
7	☐	1.000					

y = 0.0026 * x + 9.5180E-004

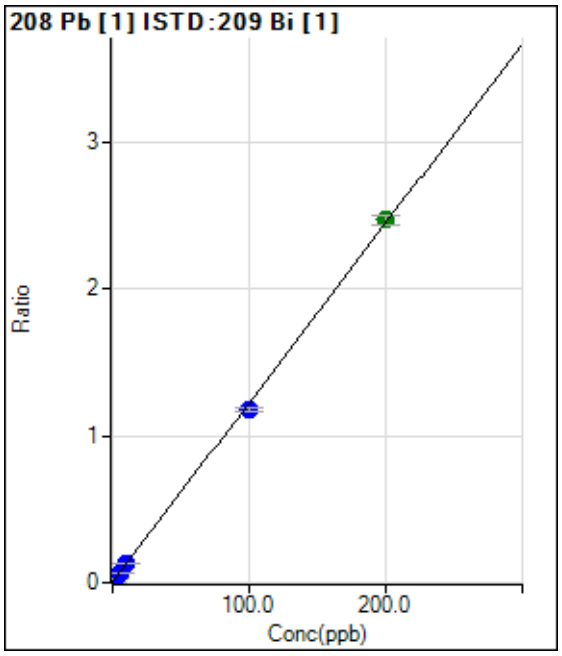
R = 1.0000

DL = 0.3558

BEC = 0.3627

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7319.99	0.0043	P	32.6
2	☐	2.000	2.144	49630.25	0.0304	P	12.1
3	☐	5.000	5.136	113179.13	0.0669	P	2.6
4	☐	10.000	10.456	225432.73	0.1318	P	1.2
5	☐	100.000	95.949	1983550.08	1.1747	P	2.2
6	☐	200.000	201.998	4113620.28	2.4683	A	2.3
7	☐	1.000					

y = 0.0122 * x + 0.0043

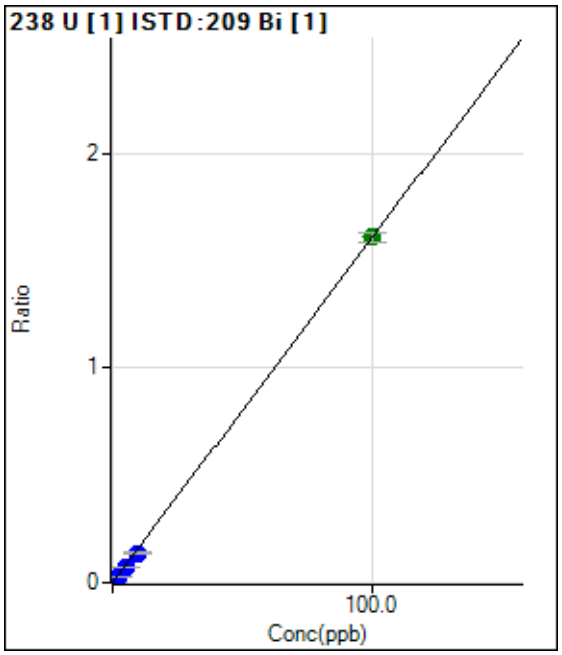
R = 0.9997

DL = 0.3412

BEC = 0.3491

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	167.79	0.0001	P	40.1
2	☐	2.000	1.769	46564.66	0.0285	P	7.7
3	☐	5.000	4.234	115108.32	0.0681	P	0.4
4	☐	10.000	8.569	235365.21	0.1376	P	2.0
5	☐	100.000	100.186	2715186.19	1.6081	A	2.7
6	☐			5425958.15	3.2558	A	2.4
7	☐	1.000					

y = 0.0160 * x + 9.7491E-005

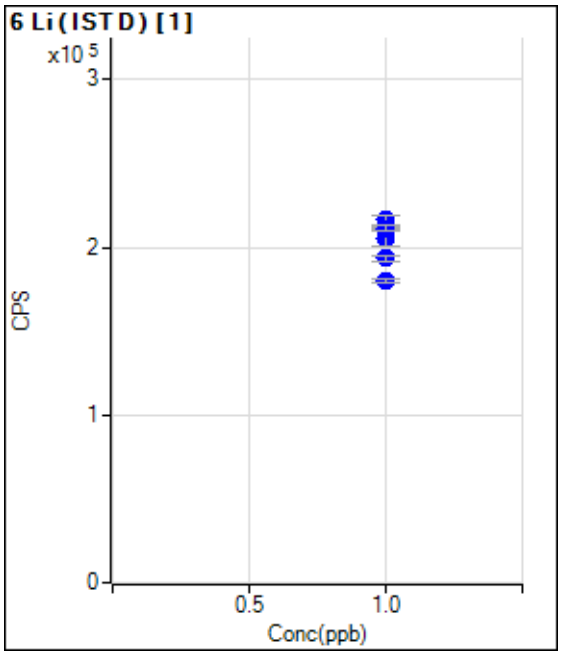
R = 0.9999

DL = 0.007305

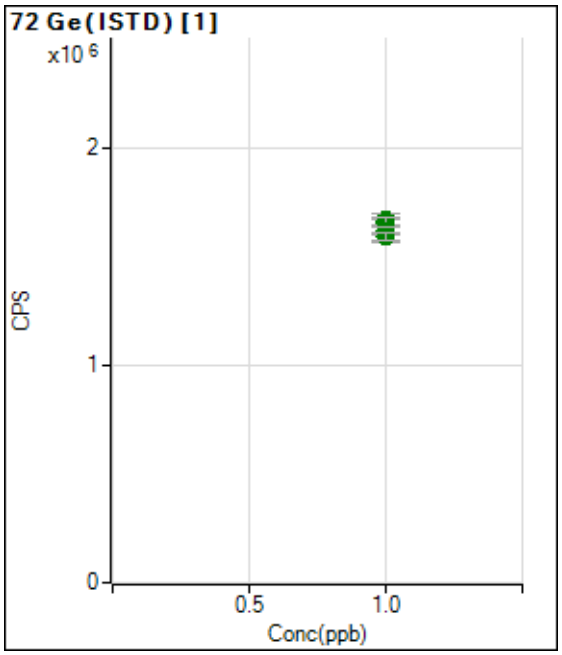
BEC = 0.006074

Weight: None

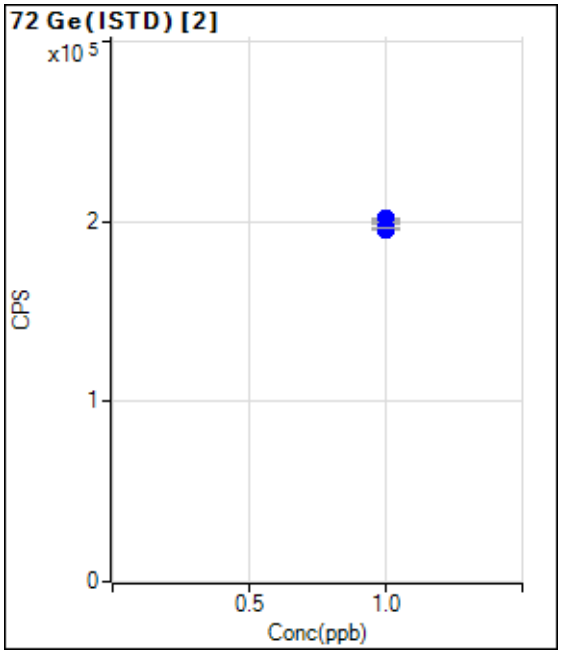
Min Conc: <None>



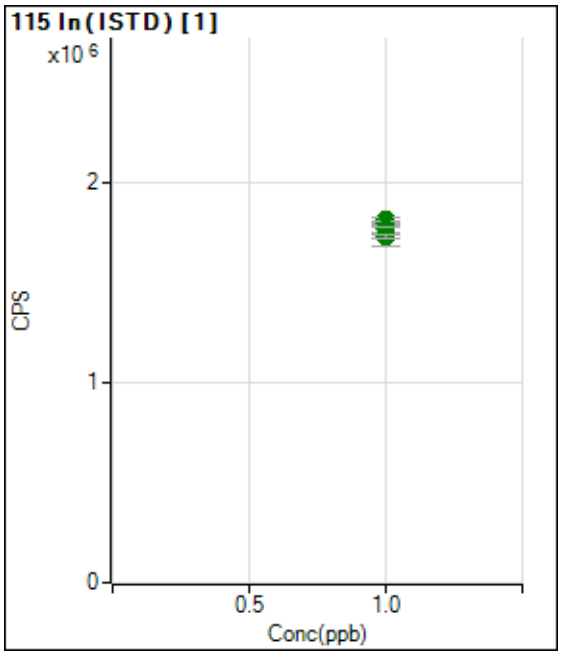
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		216342.15		P	2.5
2	☐	1.000		205673.49		P	4.9
3	☐	1.000		211548.09		P	0.7
4	☐	1.000		211181.68		P	1.5
5	☐	1.000		193483.16		P	1.8
6	☐	1.000		179776.31		P	1.6
7	☐	1.000					



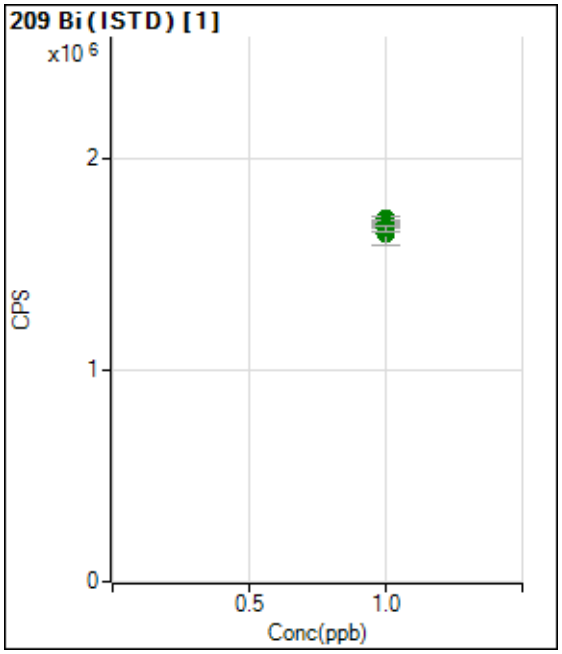
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1667733.41		A	3.2
2	☐	1.000		1601903.57		A	5.2
3	☐	1.000		1657817.09		A	1.8
4	☐	1.000		1656221.23		A	2.8
5	☐	1.000		1620987.39		A	2.3
6	☐	1.000		1591194.55		A	2.4
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		201778.92		P	0.9
2	☐	1.000		200888.53		P	0.2
3	☐	1.000		200467.93		P	0.6
4	☐	1.000		199627.91		P	0.6
5	☐	1.000		196095.40		P	0.4
6	☐	1.000		196735.99		P	0.3
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1810683.29		A	1.8
2	☐	1.000		1725364.60		A	5.3
3	☐	1.000		1788819.96		A	0.7
4	☐	1.000		1792070.00		A	1.0
5	☐	1.000		1764683.80		A	1.5
6	☐	1.000		1724364.33		A	1.3
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1712654.25		A	1.8
2	☐	1.000		1640438.32		A	6.6
3	☐	1.000		1691344.32		A	0.1
4	☐	1.000		1710527.59		A	1.5
5	☐	1.000		1688983.76		A	1.7
6	☐	1.000		1666898.50		A	1.4
7	☐	1.000					

Form 2 - Initial and Continuing Calibration Verification

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293672
Instrument: ICPMS04
Method: SW6020

ICV	Date: 26-Apr-2017 11:25		Seq: 4069169	ICV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Copper	100	105.215	105	90-110	
Lead	100	97.446	97	90-110	

CCV1	Date: 26-Apr-2017 12:26		Seq: 4069289	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Copper	100	102.35	102	90-110	
Lead	100	95.58	96	90-110	

CCV2	Date: 26-Apr-2017 13:12		Seq: 4069425	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Copper	100	100.277	100	90-110	
Lead	100	94.506	95	90-110	

CCV3	Date: 26-Apr-2017 13:46		Seq: 4069594	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Copper	100	100.903	101	90-110	
Lead	100	95.95	96	90-110	

CCV4	Date: 26-Apr-2017 14:22		Seq: 4069602	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Copper	100	99.675	100	90-110	
Lead	100	93.415	93	90-110	

Form 3 - BLANKS

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293672
Instrument: ICPMS04
Method: SW6020

ICB	Date: 26-Apr-2017 11:38		Seq: 4069172	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Copper	2	1	2	U	
Lead	5	0.6	5	U	

CCB1	Date: 26-Apr-2017 12:30		Seq: 4069290	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Copper	2	1	2	U	
Lead	5	0.6	5	U	

CCB2	Date: 26-Apr-2017 13:17		Seq: 4069588	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Copper	2	1	2	U	
Lead	5	0.6	5	U	

CCB3	Date: 26-Apr-2017 13:50		Seq: 4069595	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Copper	2	1	2	U	
Lead	5	0.6	5	U	

CCB4	Date: 26-Apr-2017 14:26		Seq: 4069603	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Copper	2	1	2	U	
Lead	5	0.6	5	U	

Form 4 - ICP Interference Check Sample

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS04_293672
Instrument: ICPMS04
Method: SW6020

ICSA	Date: 26-Apr-2017 11:46	Seq: 4069250	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Copper		0.556	0	
Lead		-0.023	0	

ICSAB	Date: 26-Apr-2017 11:50	Seq: 4069251	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Copper	100	96.36	96.4	
Lead	100	91.13	91.1	

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: ARCADIS U.S., Inc. Instrument:ICPMS04
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		ArHe
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
111	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
135	Barium	Indium		Ar
203	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: ARCADIS U.S., Inc. Instrument:ICPMS05
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		Ar
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

FORM 12 - PREPARATION LOG

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 25-Apr-2017 14:00 End Date: 25-Apr-2017 16:00

Batch ID: 115623
Prep Code: 3050_I_Low
Method: SW3050A
Technician:

SampID	ClientID	Matrix	Init Wt	Init Vol	FinalVol (mL)	PrepFac
HS17041053-14	FTBL-SS-B43-0-12-042017-R	Soil	0.5245		50	95.33
HS17041053-15	FTBL-SS-B44-0-12-042017-R	Soil	0.5277		50	94.75
HS17041053-16	FTBL-SS-B55-0-12-042017-R	Soil	0.5371		50	93.09
HS17041053-16MS			0.5327		50	93.86
HS17041053-16MSD			0.5338		50	93.67
HS17041053-16PDS			0.5371		50	93.09
HS17041053-16SD			0.5371		50	93.09
HS17041053-17	FD042017	Soil	0.5407		50	92.47
HS17041053-18	FTBL-SS-B56-0-12-042017-R	Soil	0.5472		50	91.37
HS17041053-19	FTBL-SS-B49-0-12-042017-R	Soil	0.5257		50	95.11
HS17041053-20	FTBL-SS-B50-0-12-042017-R	Soil	0.5298		50	94.38
HS17041053-21	FTBL-SS-B50-12-24-042017-R	Soil	0.5383		50	92.89
LCS-115623			0.5		50	100
MBLK-115623			0.5		50	100

FORM 13 - ANALYSIS RUN LOG

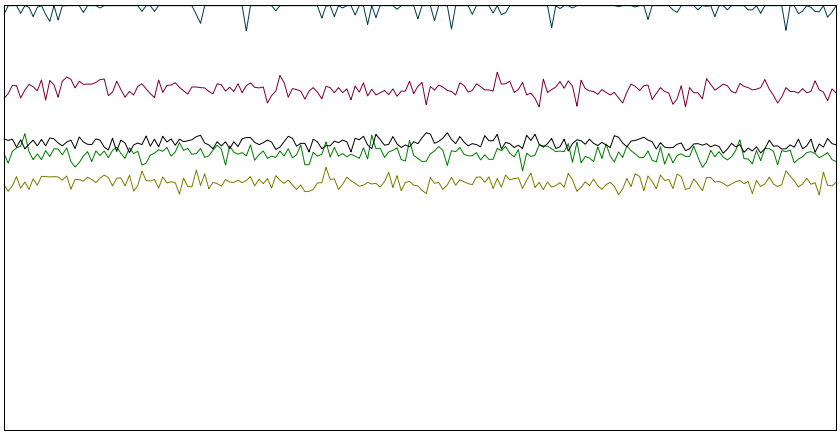
Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 26-Apr-2017 End Date: 26-Apr-2017

Run ID:ICPMS04_293672
Instrument:ICPMS04
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS04_293672_Tune	1	26-Apr-2017 00:00	ICPMS04_293672_Tune_1	
CAL BLK	1	26-Apr-2017 10:58	003CALB.D_4069163	CU PB
2/10/200	1	26-Apr-2017 11:02	004CALS.D_4069164	CU PB
5/25/500	1	26-Apr-2017 11:07	005CALS.D_4069165	CU PB
10/50/1000	1	26-Apr-2017 11:11	006CALS.D_4069166	CU PB
100/500/10K	1	26-Apr-2017 11:16	007CALS.D_4069167	CU PB
200/1000/20K	1	26-Apr-2017 11:20	008CALS.D_4069168	CU PB
ICV	1	26-Apr-2017 11:25	009SMPL.D_4069169	CU PB
LLICV5	1	26-Apr-2017 11:29	010SMPL.D_4069170	CU PB
LLICV2	1	26-Apr-2017 11:34	011SMPL.D_4069171	CU PB
ICB	1	26-Apr-2017 11:38	012SMPL.D_4069172	CU PB
ICSA	1	26-Apr-2017 11:46	013SMPL.D_4069250	CU PB
ICSAB	1	26-Apr-2017 11:50	014SMPL.D_4069251	CU PB
FTBL-SS-B55-0-12-042017-RSD	25	26-Apr-2017 12:21	020SMPL.D_4069288	
CCV 1	1	26-Apr-2017 12:26	021SMPL.D_4069289	CU PB
CCB 1	1	26-Apr-2017 12:30	022CCB.D_4069290	CU PB
FTBL-SS-B55-0-12-042017-RMS	5	26-Apr-2017 12:36	023SMPL.D_4069339	
FTBL-SS-B55-0-12-042017-RMSD	5	26-Apr-2017 12:41	024SMPL.D_4069340	
FTBL-SS-B55-0-12-042017-RPDS	5	26-Apr-2017 12:45	025SMPL.D_4069341	
FTBL-SS-B43-0-12-042017-R	10	26-Apr-2017 12:50	026SMPL.D_4069354	PB
FTBL-SS-B44-0-12-042017-R	50	26-Apr-2017 12:54	027SMPL.D_4069355	CU PB
FD042017	50	26-Apr-2017 12:59	028SMPL.D_4069356	PB
CCV 2	1	26-Apr-2017 13:12	031SMPL.D_4069425	CU PB
CCB 2	1	26-Apr-2017 13:17	032CCB.D_4069588	CU PB
CCV 3	1	26-Apr-2017 13:46	038SMPL.D_4069594	CU PB
CCB 3	1	26-Apr-2017 13:50	039CCB.D_4069595	CU PB
CCV 4	1	26-Apr-2017 14:22	046SMPL.D_4069602	CU PB
CCB 4	1	26-Apr-2017 14:26	047CCB.D_4069603	CU PB

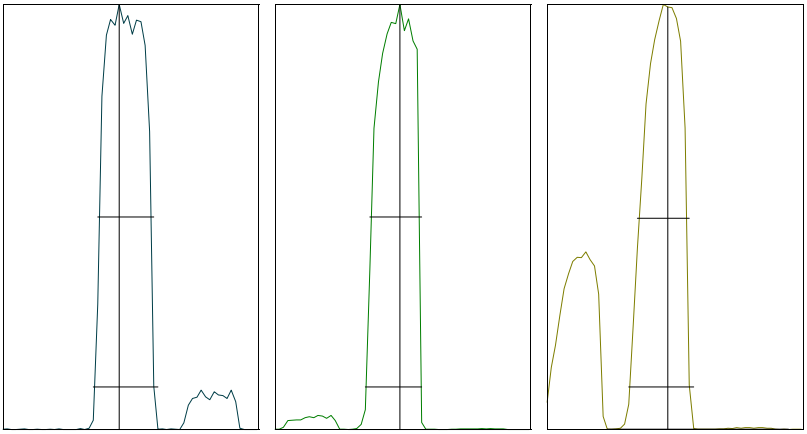
Tune Report

Tune File : 042617A5.u
Comment :



Integration Time:	0.1000 sec	
Sampling Period:	0.5100 sec	
n:	200	
Oxide:	156/140	0.539%
Doubly Charged:	70/140	0.926%

m/z	Range	Count	Mean	RSD%	Background
9	2,000	2062.0	2038.0	3.03	2.40
24	10,000	6325.0	6508.1	2.19	1.90
59	20,000	11690.0	11674.9	2.10	2.70
115	20,000	15878.0	16047.1	1.80	6.80
208	20,000	13438.0	13521.5	1.54	13.40



m/z:	9	59	208
Height:	2,108	11,710	13,226
Axis:	8.90	59.00	207.95
W-50%:	0.65	0.60	0.60
W-10%:	0.7500	0.6500	0.7500

Integration Time:	0.1000 sec
Acquisition Time:	22.6600 sec

Y axis : Linear

Generated : Apr 26, 2017 10:28:34
Printed : Apr 26, 2017 10:28:36

Tune Report

Tune File : 042617A5.u
Comment :

Tuning Parameters

===Plasma Condition===				===Ion Lenses===				===Q-Pole Parameters===			
RF Power	:	1600	W	Extract 1	:	0	V	AMU Gain	:	137	
RF Matching	:	1.2	V	Extract 2	:	-200	V	AMU Offset	:	123	
Smpl Depth	:	8	mm	Omega Bias	:	-100	V	Axis Gain	:	0.9932	
Torch-H	:	0.1	mm	Omega Lens	:	10.2	V	Axis Offset	:	0.03	
Torch-V	:	0	mm	Cell Entrance	:	-30	V	QP Bias	:	-3	V
Carrier Gas	:	0.35	L/min	Cell Exit	:	-50	V				
Dilution Mode	:	ON		Deflect	:	14.8	V	===Detector Parameters===			
Dilution Gas	:	0.5	L/min	Plate Bias	:	-40	V	Discriminator	:	4.5	mV
Optional Gas	:	---	%	===Octopole Parameters===				Analog HV	:	2158	V
Nebulizer Pump	:	0.1	rps	OctP RF	:	180	V	Pulse HV	:	1522	V
Sample Pump	:	---	rps	OctP Bias	:	-8	V				
S/C Temp	:	2	degC								

===Reaction Cell===

Reaction Mode	:	OFF									
H2 Gas	:	---	mL/min	He Gas	:	0	mL/min	Optional Gas	:	---	%

Calibration Blank Report

Sample Name	CAL BLK
Data File Name	003CALB.D
DataPath	C:\ICPMH\1\DATA\17D26k00.B
AcqDateTime	4/26/2017 10:58:00
Type	CalBlk
VialNumber	1101
Dilution	1
Comment	
Operator	[redacted] ICPMS04
Current Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	24126	3.06
Be	9	6	1	36	32.93
B	11	6	1	6102	1.88
Na	23	72	1	97905	6.75
Na	23	72	2	3807	5.30
Mg	24	72	1	30747	21.22
Al	27	72	1	46290	26.23
P	31	72	1	18403	1.55
K	39	72	1	2983105	0.40
Ca	44	72	1	40272	5.46
Ca	44	72	2	250	6.67
Ti	47	72	1	143	25.15
Ti	47	72	2	3	173.21
V	51	72	1	184915	4.71
V	51	72	2	304	5.18
Cr	52	72	1	12696	6.39
Cr	52	72	2	529	7.98
Mn	55	72	1	15281	3.32
Mn	55	72	2	329	8.44
Fe	56	72	1	1649631	0.61
Fe	56	72	2	7644	7.11
Co	59	72	1	407	28.69
Co	59	72	2	54	7.07
Ni	60	72	1	134	7.97
Ni	60	72	2	73	36.08
Cu	63	72	1	5359	11.01
Cu	63	72	2	1172	6.31
Cu	65	72	1	2591	9.28
Zn	66	72	1	693	9.65
Zn	68	72	1	630	3.99
As	75	72	1	38919	4.27
As	75	72	2	23	49.68
Se	78	72	1	20089	0.57
Se	78	72	2	16	25.77
Se	82	72	1	309	7.89
Sr	88	72	1	1328	30.05
Mo	95	72	1	170	35.67
Mo	97	72	1	137	59.34
Ag	107	72	1	134	29.58
Ag	109	72	1	136	27.08
Cd	111	115	1	9	57.30
Cd	114	115	1	51	19.92
Sn	118	72	1	976	11.32
Sn	119	72	1	352	17.17
Sb	121	72	1	5181	4.04
Sb	121	72	2	1117	1.34

Calibration Blank Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	123	72	1	3949	4.91
Ba	135	115	1	183	11.06
Ba	137	115	1	300	25.02
Tl	203	209	1	1126	7.94
Tl	205	209	1	2723	5.82
Pb	206	209	1	2585	17.43
Pb	207	209	1	2215	12.63
Pb	208	209	1	10134	14.49

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Li	6	1	260477	1.98
Ge	72	1	1952537	2.93
Ge	72	2	250522	0.61
In	115	1	2043460	2.68
Bi	209	1	1953091	1.53

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Calibration Standard Report

Sample Name	2/10/200
Data File Name	004CALS.D
DataPath	C:\ICPMH\1\DATA\17D26k00.B
AcqDateTime	4/26/2017 11:02
Type	CalStd
VialNumber	1102
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	32537	2.08
Be	9	6	1	4221	5.14
B	11	6	1	16027	4.11
Na	23	72	1	1866259	0.08
Na	23	72	2	49155	0.67
Mg	24	72	1	1330014	0.37
Al	27	72	1	84707	17.83
P	31	72	1	25248	2.19
K	39	72	1	4836942	0.11
Ca	44	72	1	102574	2.50
Ca	44	72	2	1585	10.06
Ti	47	72	1	1939	1.99
Ti	47	72	2	110	25.89
V	51	72	1	205053	5.19
V	51	72	2	3781	1.46
Cr	52	72	1	35960	0.47
Cr	52	72	2	4948	1.10
Mn	55	72	1	45834	2.79
Mn	55	72	2	2654	4.56
Fe	56	72	1	4290524	0.42
Fe	56	72	2	372516	0.48
Co	59	72	1	25862	1.28
Co	59	72	2	6942	4.23
Ni	60	72	1	6060	1.05
Ni	60	72	2	1840	4.45
Cu	63	72	1	19199	2.60
Cu	63	72	2	5978	3.69
Cu	65	72	1	9190	1.88
Zn	66	72	1	5382	1.14
Zn	68	72	1	3972	3.63
As	75	72	1	43172	5.06
As	75	72	2	865	5.57
Se	78	72	1	20347	0.15
Se	78	72	2	64	34.44
Se	82	72	1	555	5.63
Sr	88	72	1	39050	0.83
Mo	95	72	1	7161	2.90
Mo	97	72	1	4404	1.66
Ag	107	72	1	18132	0.45
Ag	109	72	1	17457	2.31
Cd	111	115	1	3897	3.47
Cd	114	115	1	9442	2.08
Sn	118	72	1	11262	4.54
Sn	119	72	1	4411	0.30

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	22421	1.41
Sb	121	72	2	5576	1.43
Sb	123	72	1	17235	0.71
Ba	135	115	1	3704	0.72
Ba	137	115	1	6356	0.82
Tl	203	209	1	12964	3.93
Tl	205	209	1	30736	4.20
Pb	206	209	1	14515	3.52
Pb	207	209	1	12896	1.26
Pb	208	209	1	58333	1.95

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	258642	1.50	260477	99.3	70	125	
Ge	72	1	1940674	2.22	1952537	99.4	70	125	
Ge	72	2	250447	0.51	250522	100.0	70	125	
In	115	1	2016991	1.68	2043460	98.7	70	125	
Bi	209	1	1954995	1.18	1953091	100.1	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Calibration Standard Report

Sample Name	5/25/500
Data File Name	005CALS.D
DataPath	C:\ICPMH\1\DATA\17D26k00.B
AcqDateTime	4/26/2017 11:07
Type	CalStd
VialNumber	1103
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	45615	0.43
Be	9	6	1	10505	0.55
B	11	6	1	31605	3.65
Na	23	72	1	4440217	0.36
Na	23	72	2	118174	1.41
Mg	24	72	1	3231890	0.22
Al	27	72	1	106464	12.33
P	31	72	1	35606	3.09
K	39	72	1	7611988	0.53
Ca	44	72	1	187079	1.59
Ca	44	72	2	3354	3.14
Ti	47	72	1	4642	4.55
Ti	47	72	2	241	15.54
V	51	72	1	246621	4.74
V	51	72	2	8895	2.79
Cr	52	72	1	70727	1.36
Cr	52	72	2	11535	2.68
Mn	55	72	1	90333	1.86
Mn	55	72	2	5959	2.07
Fe	56	72	1	8160724	0.53
Fe	56	72	2	916645	1.26
Co	59	72	1	64113	1.33
Co	59	72	2	17432	0.69
Ni	60	72	1	14948	0.59
Ni	60	72	2	4605	1.98
Cu	63	72	1	40543	1.15
Cu	63	72	2	13283	1.31
Cu	65	72	1	19272	1.19
Zn	66	72	1	12055	3.21
Zn	68	72	1	8507	3.28
As	75	72	1	52464	4.34
As	75	72	2	2025	4.16
Se	78	72	1	21298	1.28
Se	78	72	2	148	7.40
Se	82	72	1	997	5.29
Sr	88	72	1	93820	1.62
Mo	95	72	1	17485	1.30
Mo	97	72	1	10894	3.91
Ag	107	72	1	45529	2.36
Ag	109	72	1	43832	1.01
Cd	111	115	1	9844	1.28
Cd	114	115	1	23701	1.17
Sn	118	72	1	27520	0.44
Sn	119	72	1	10558	0.46

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	47663	0.33
Sb	121	72	2	11947	1.18
Sb	123	72	1	36356	0.76
Ba	135	115	1	9105	3.81
Ba	137	115	1	15577	1.43
Tl	203	209	1	31541	4.75
Tl	205	209	1	75489	4.76
Pb	206	209	1	32677	1.37
Pb	207	209	1	28984	1.74
Pb	208	209	1	131179	0.76

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	256315	0.21	260477	98.4	70	125	
Ge	72	1	1907452	1.41	1952537	97.7	70	125	
Ge	72	2	224115	15.09	250522	89.5	70	125	
In	115	1	2005753	1.38	2043460	98.2	70	125	
Bi	209	1	1931468	1.15	1953091	98.9	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Calibration Standard Report

Sample Name	10/50/1000
Data File Name	006CALS.D
DataPath	C:\ICPMH\1\DATA\17D26k00.B
AcqDateTime	4/26/2017 11:11
Type	CalStd
VialNumber	1104
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	67767	0.19
Be	9	6	1	21340	2.21
B	11	6	1	57886	1.90
Na	23	72	1	8748135	0.65
Na	23	72	2	232314	1.79
Mg	24	72	1	6367196	0.50
Al	27	72	1	146828	8.70
P	31	72	1	51455	0.13
K	39	72	1	12213753	0.28
Ca	44	72	1	329042	1.00
Ca	44	72	2	6492	3.95
Ti	47	72	1	9065	2.86
Ti	47	72	2	483	7.83
V	51	72	1	312726	3.42
V	51	72	2	18000	2.21
Cr	52	72	1	128071	0.44
Cr	52	72	2	22747	1.02
Mn	55	72	1	164248	0.14
Mn	55	72	2	11854	1.55
Fe	56	72	1	14609688	0.96
Fe	56	72	2	1896395	0.92
Co	59	72	1	127900	1.15
Co	59	72	2	34747	1.45
Ni	60	72	1	29286	1.12
Ni	60	72	2	9266	2.05
Cu	63	72	1	76715	1.09
Cu	63	72	2	25850	1.34
Cu	65	72	1	36098	0.51
Zn	66	72	1	22907	0.17
Zn	68	72	1	16416	0.62
As	75	72	1	66874	3.49
As	75	72	2	4129	0.76
Se	78	72	1	22647	0.66
Se	78	72	2	217	6.15
Se	82	72	1	1655	2.66
Sr	88	72	1	186528	0.54
Mo	95	72	1	34935	2.67
Mo	97	72	1	21747	1.91
Ag	107	72	1	90547	0.54
Ag	109	72	1	87244	0.79
Cd	111	115	1	19691	0.39
Cd	114	115	1	47407	1.49
Sn	118	72	1	54168	0.50
Sn	119	72	1	21219	1.01

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	90390	0.84
Sb	121	72	2	22736	0.52
Sb	123	72	1	68886	0.70
Ba	135	115	1	18078	1.72
Ba	137	115	1	30948	0.88
Tl	203	209	1	63937	5.24
Tl	205	209	1	151395	4.65
Pb	206	209	1	64006	0.97
Pb	207	209	1	57468	1.21
Pb	208	209	1	259226	1.01

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	256434	2.04	260477	98.4	70	125	
Ge	72	1	1905567	2.69	1952537	97.6	70	125	
Ge	72	2	246522	0.14	250522	98.4	70	125	
In	115	1	2007328	1.43	2043460	98.2	70	125	
Bi	209	1	1927763	1.01	1953091	98.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Calibration Standard Report

Sample Name	100/500/10K
Data File Name	007CALS.D
DataPath	C:\ICPMH\1\DATA\17D26k00.B
AcqDateTime	4/26/2017 11:16
Type	CalStd
VialNumber	1105
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	428355	0.97
Be	9	6	1	194333	0.69
B	11	6	1	495349	2.82
Na	23	72	1	78952510	0.65
Na	23	72	2	2094009	0.94
Mg	24	72	1	57730778	0.57
Al	27	72	1	877543	0.72
P	31	72	1	315749	0.70
K	39	72	1	88371638	0.33
Ca	44	72	1	2702015	0.65
Ca	44	72	2	55953	1.84
Ti	47	72	1	84129	1.10
Ti	47	72	2	4709	3.76
V	51	72	1	1405589	0.76
V	51	72	2	160745	0.70
Cr	52	72	1	1064638	0.57
Cr	52	72	2	202736	0.87
Mn	55	72	1	1442550	0.92
Mn	55	72	2	104036	1.80
Fe	56	72	1	120545347	0.05
Fe	56	72	2	16784455	0.19
Co	59	72	1	1161186	0.38
Co	59	72	2	309407	0.69
Ni	60	72	1	262897	0.86
Ni	60	72	2	81705	0.17
Cu	63	72	1	654180	0.34
Cu	63	72	2	224624	0.82
Cu	65	72	1	311704	0.48
Zn	66	72	1	206107	1.39
Zn	68	72	1	146483	0.79
As	75	72	1	288200	0.95
As	75	72	2	38216	0.60
Se	78	72	1	49972	0.53
Se	78	72	2	1974	5.01
Se	82	72	1	13109	1.51
Sr	88	72	1	1774478	1.05
Mo	95	72	1	324032	0.63
Mo	97	72	1	201149	1.27
Ag	107	72	1	845431	0.25
Ag	109	72	1	814087	0.67
Cd	111	115	1	183005	0.60
Cd	114	115	1	440467	0.97
Sn	118	72	1	503276	0.46
Sn	119	72	1	193335	1.19

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	806654	0.24
Sb	121	72	2	199762	0.18
Sb	123	72	1	615357	0.73
Ba	135	115	1	166132	0.66
Ba	137	115	1	285221	0.72
Tl	203	209	1	633068	3.58
Tl	205	209	1	1562927	6.80
Pb	206	209	1	560180	0.65
Pb	207	209	1	505294	0.73
Pb	208	209	1	2271984	0.66

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	232245	2.35	260477	89.2	70	125	
Ge	72	1	1824534	2.70	1952537	93.4	70	125	
Ge	72	2	236967	0.27	250522	94.6	70	125	
In	115	1	1961360	2.01	2043460	96.0	70	125	
Bi	209	1	1850514	2.11	1953091	94.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Calibration Standard Report

Sample Name	200/1000/20K
Data File Name	008CALS.D
DataPath	C:\ICPMH\1\DATA\17D26k00.B
AcqDateTime	4/26/2017 11:20
Type	CalStd
VialNumber	1106
Dilution	1
Comment	
Operator	[redacted] ICPMS04
ISTDRefDataFileName	003CALB.D
ISTD PassFail	Pass
Acq Method	ICP-ORS.m

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Li	7	6	1	794221	0.32
Be	9	6	1	370945	0.44
B	11	6	1	989244	3.25
Na	23	72	1	149889266	0.71
Na	23	72	2	3990669	0.36
Mg	24	72	1	109567861	0.27
Al	27	72	1	1652048	0.88
P	31	72	1	579852	0.27
K	39	72	1	164279533	0.42
Ca	44	72	1	5064710	0.39
Ca	44	72	2	107537	0.72
Ti	47	72	1	161451	0.48
Ti	47	72	2	8491	1.85
V	51	72	1	2510114	1.06
V	51	72	2	309819	0.40
Cr	52	72	1	2065911	0.98
Cr	52	72	2	391735	0.38
Mn	55	72	1	2698197	0.10
Mn	55	72	2	200196	0.37
Fe	56	72	1	228610063	0.52
Fe	56	72	2	32252805	0.59
Co	59	72	1	2273111	0.39
Co	59	72	2	591993	0.69
Ni	60	72	1	494484	0.21
Ni	60	72	2	159686	0.59
Cu	63	72	1	1223647	0.22
Cu	63	72	2	428315	0.14
Cu	65	72	1	585551	0.26
Zn	66	72	1	390934	0.50
Zn	68	72	1	277529	0.36
As	75	72	1	520255	0.17
As	75	72	2	74097	0.23
Se	78	72	1	78495	0.33
Se	78	72	2	3759	5.47
Se	82	72	1	24541	0.84
Sr	88	72	1	3374290	0.48
Mo	95	72	1	628553	0.61
Mo	97	72	1	385641	0.71
Ag	107	72	1	1685840	0.33
Ag	109	72	1	1637036	0.34
Cd	111	115	1	350325	0.48
Cd	114	115	1	846941	0.23
Sn	118	72	1	967652	0.54
Sn	119	72	1	371188	0.52

Calibration Standard Report

Element	m/z	ISTD	Tune Step	CPS	%RSD
Sb	121	72	1	1646795	0.80
Sb	121	72	2	386812	0.13
Sb	123	72	1	1190469	0.74
Ba	135	115	1	319579	1.19
Ba	137	115	1	548296	0.59
Tl	203	209	1	1237697	2.97
Tl	205	209	1	3120934	3.04
Pb	206	209	1	1081754	0.21
Pb	207	209	1	977053	0.25
Pb	208	209	1	4548702	0.33

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	205261	3.31	260477	78.8	70	125	
Ge	72	1	1728632	2.78	1952537	88.5	70	125	
Ge	72	2	231499	0.48	250522	92.4	70	125	
In	115	1	1833588	4.18	2043460	89.7	70	125	
Bi	209	1	1746517	5.78	1953091	89.4	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	009SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 11:25
Sample Name	ICV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	96.394	96.394	1.99
Be	9	6	1	ppb	107.997	107.997	1.60
B	11	6	1	ppb	484.996	484.996	5.00
Na	23	72	1	ppb	10037.841	10037.841	2.34
Na	23	72	2	ppb	10316.421	10316.421	0.86
Mg	24	72	1	ppb	9948.248	9948.248	2.73
Al	27	72	1	ppb	96.579	96.579	1.84
P	31	72	1	ppb	525.609	525.609	2.61
K	39	72	1	ppb	10017.494	10017.494	2.35
Ca	44	72	1	ppb	9949.170	9949.170	2.76
Ca	44	72	2	ppb	10042.859	10042.859	1.01
Ti	47	72	1	ppb	99.606	99.606	2.54
Ti	47	72	2	ppb	103.925	103.925	7.12
V	51	72	1	ppb	97.641	97.641	2.94
V	51	72	2	ppb	104.083	104.083	0.58
Cr	52	72	1	ppb	100.848	100.848	2.39
Cr	52	72	2	ppb	104.959	104.959	0.39
Mn	55	72	1	ppb	103.536	103.536	1.80
Mn	55	72	2	ppb	104.562	104.562	0.91
Fe	56	72	1	ppb	9984.322	9984.322	2.16
Fe	56	72	2	ppb	10178.620	10178.620	0.76
Co	59	72	1	ppb	103.863	103.863	4.14
Co	59	72	2	ppb	107.094	107.094	1.18
Ni	60	72	1	ppb	105.609	105.609	2.59
Ni	60	72	2	ppb	107.320	107.320	1.14
Cu	63	72	1	ppb	103.015	103.015	2.66
Cu	63	72	2	ppb	105.215	105.215	0.60
Cu	65	72	1	ppb	103.176	103.176	2.66
Zn	66	72	1	ppb	103.161	103.161	2.55
Zn	66	72	2	ppb	107.970	107.970	1.05
Zn	68	72	1	ppb	103.793	103.793	1.77
As	75	72	1	ppb	99.051	99.051	2.00
As	75	72	2	ppb	106.341	106.341	0.84
Se	78	72	1	ppb	100.957	100.957	4.07
Se	78	72	2	ppb	107.658	107.658	3.04
Se	82	72	1	ppb	103.308	103.308	2.15
Sr	88	72	1	ppb	100.773	100.773	2.16
Mo	95	72	1	ppb	100.927	100.927	2.43
Mo	97	72	1	ppb	101.250	101.250	2.61
Rh	103	115	1	ppb	-101.379	-101.379	-26.75
Pd	105	115	1	ppb	92.313	92.313	82.37
Ag	107	72	1	ppb	104.021	104.021	2.10
Ag	109	72	1	ppb	104.059	104.059	2.14
Cd	111	115	1	ppb	102.826	102.826	0.59

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	102.089	102.089	0.76
Sn	118	72	1	ppb	99.674	99.674	3.27
Sn	119	72	1	ppb	98.353	98.353	2.54
Sb	121	72	1	ppb	104.450	104.450	2.73
Sb	121	72	2	ppb	105.485	105.485	0.15
Sb	123	72	1	ppb	104.318	104.318	2.19
Ba	135	115	1	ppb	103.569	103.569	0.59
Ba	137	115	1	ppb	103.689	103.689	0.77
W	182	209	1	ppb	64.183	64.183	8.52
Pt	195	209	1	ppb	252.682	252.682	73.39
Au	197	209	1	ppb	212.498	212.498	113.02
Tl	203	209	1	ppb	110.164	110.164	4.30
Tl	205	209	1	ppb	113.560	113.560	4.31
Pb	206	209	1	ppb	104.769	104.769	1.87
Pb	207	209	1	ppb	96.187	96.187	1.51
Pb	208	209	1	ppb	97.446	97.446	1.42
U	238	209	1	ppb	101.261	101.261	2.51

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	228,713	2.05	260477	87.8	70	125	
1	Ge	72	1,850,916	2.77	1952537	94.8	70	125	
2	Ge	72	239,147	0.52	250522	95.5	70	125	
1	In	115	1,962,612	1.22	2043460	96.0	70	125	
1	Bi	209	1,906,820	1.87	1953091	97.6	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	010SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 11:29
Sample Name	LLICV5	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	5.003	5.003	6.20
Be	9	6	1	ppb	5.217	5.217	4.09
B	11	6	1	ppb	50.492	50.492	7.24
Na	23	72	1	ppb	547.918	547.918	4.34
Na	23	72	2	ppb	533.428	533.428	0.67
Mg	24	72	1	ppb	546.128	546.128	4.00
Al	27	72	1	ppb	7.936	7.936	28.79
P	31	72	1	ppb	30.418	30.418	10.36
K	39	72	1	ppb	545.863	545.863	7.01
Ca	44	72	1	ppb	547.562	547.562	7.28
Ca	44	72	2	ppb	552.572	552.572	3.25
Ti	47	72	1	ppb	5.302	5.302	6.95
Ti	47	72	2	ppb	4.968	4.968	4.28
V	51	72	1	ppb	0.719	0.719	119.52
V	51	72	2	ppb	4.621	4.621	1.30
Cr	52	72	1	ppb	5.203	5.203	5.06
Cr	52	72	2	ppb	5.362	5.362	1.74
Mn	55	72	1	ppb	5.289	5.289	6.47
Mn	55	72	2	ppb	5.476	5.476	2.55
Fe	56	72	1	ppb	523.064	523.064	5.42
Fe	56	72	2	ppb	527.637	527.637	0.34
Co	59	72	1	ppb	5.332	5.332	5.17
Co	59	72	2	ppb	5.375	5.375	2.19
Ni	60	72	1	ppb	5.587	5.587	5.05
Ni	60	72	2	ppb	5.493	5.493	2.83
Cu	63	72	1	ppb	5.295	5.295	5.19
Cu	63	72	2	ppb	5.192	5.192	4.33
Cu	65	72	1	ppb	5.269	5.269	6.90
Zn	66	72	1	ppb	5.416	5.416	6.18
Zn	66	72	2	ppb	4.594	4.594	4.46
Zn	68	72	1	ppb	5.589	5.589	5.91
As	75	72	1	ppb	3.242	3.242	38.56
As	75	72	2	ppb	5.286	5.286	5.78
Se	78	72	1	ppb	7.009	7.009	51.54
Se	78	72	2	ppb	5.483	5.483	21.86
Se	82	72	1	ppb	5.354	5.354	5.39
Sr	88	72	1	ppb	5.237	5.237	4.47
Mo	95	72	1	ppb	5.409	5.409	3.47
Mo	97	72	1	ppb	5.294	5.294	4.76
Rh	103	115	1	ppb	-177.112	-177.112	-9.55
Pd	105	115	1	ppb	-13.743	-13.743	-149.26
Ag	107	72	1	ppb	5.437	5.437	3.15
Ag	109	72	1	ppb	5.380	5.380	4.08
Cd	111	115	1	ppb	5.307	5.307	2.51

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	5.286	5.286	3.97
Sn	118	72	1	ppb	5.624	5.624	4.38
Sn	119	72	1	ppb	5.674	5.674	4.99
Sb	121	72	1	ppb	5.272	5.272	4.84
Sb	121	72	2	ppb	5.161	5.161	1.25
Sb	123	72	1	ppb	5.291	5.291	4.73
Ba	135	115	1	ppb	5.386	5.386	8.25
Ba	137	115	1	ppb	5.380	5.380	4.41
W	182	209	1	ppb	-5.831	-5.831	-461.03
Pt	195	209	1	ppb	315.747	315.747	57.66
Au	197	209	1	ppb	231.050	231.050	6.89
Tl	203	209	1	ppb	7.116	7.116	1.81
Tl	205	209	1	ppb	6.846	6.846	0.78
Pb	206	209	1	ppb	5.271	5.271	6.32
Pb	207	209	1	ppb	5.206	5.206	6.34
Pb	208	209	1	ppb	5.049	5.049	6.28
U	238	209	1	ppb	4.341	4.341	5.22

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	241,068	5.98	260477	92.5	70	125	
1	Ge	72	1,769,809	4.33	1952537	90.6	70	125	
2	Ge	72	240,059	0.38	250522	95.8	70	125	
1	In	115	1,893,639	4.72	2043460	92.7	70	125	
1	Bi	209	1,849,043	4.92	1953091	94.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	011SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 11:34
Sample Name	LLICV2	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	1.855	1.855	7.31
Be	9	6	1	ppb	1.987	1.987	2.18
B	11	6	1	ppb	27.328	27.328	7.30
Na	23	72	1	ppb	213.950	213.950	2.68
Na	23	72	2	ppb	212.977	212.977	1.12
Mg	24	72	1	ppb	212.218	212.218	3.37
Al	27	72	1	ppb	4.721	4.721	35.21
P	31	72	1	ppb	12.081	12.081	11.98
K	39	72	1	ppb	203.997	203.997	6.86
Ca	44	72	1	ppb	216.233	216.233	2.09
Ca	44	72	2	ppb	240.241	240.241	9.11
Ti	47	72	1	ppb	1.936	1.936	5.08
Ti	47	72	2	ppb	2.430	2.430	14.48
V	51	72	1	ppb	-2.171	-2.171	-11.66
V	51	72	2	ppb	1.503	1.503	3.93
Cr	52	72	1	ppb	1.895	1.895	4.94
Cr	52	72	2	ppb	2.067	2.067	3.70
Mn	55	72	1	ppb	2.005	2.005	0.68
Mn	55	72	2	ppb	2.016	2.016	5.13
Fe	56	72	1	ppb	195.160	195.160	4.73
Fe	56	72	2	ppb	210.497	210.497	0.73
Co	59	72	1	ppb	2.060	2.060	3.00
Co	59	72	2	ppb	2.205	2.205	0.97
Ni	60	72	1	ppb	2.137	2.137	2.74
Ni	60	72	2	ppb	2.267	2.267	3.87
Cu	63	72	1	ppb	1.876	1.876	1.01
Cu	63	72	2	ppb	1.989	1.989	3.30
Cu	65	72	1	ppb	1.855	1.855	4.52
Zn	66	72	1	ppb	2.047	2.047	2.42
Zn	66	72	2	ppb	1.239	1.239	9.82
Zn	68	72	1	ppb	2.195	2.195	6.34
As	75	72	1	ppb	-0.190	-0.190	-225.64
As	75	72	2	ppb	2.084	2.084	3.95
Se	78	72	1	ppb	1.393	1.393	93.67
Se	78	72	2	ppb	2.513	2.513	17.51
Se	82	72	1	ppb	1.883	1.883	18.66
Sr	88	72	1	ppb	2.037	2.037	2.68
Mo	95	72	1	ppb	2.052	2.052	2.32
Mo	97	72	1	ppb	2.044	2.044	5.78
Rh	103	115	1	ppb	-224.181	-224.181	-9.26
Pd	105	115	1	ppb	23.121	23.121	117.92
Ag	107	72	1	ppb	2.086	2.086	3.78
Ag	109	72	1	ppb	2.077	2.077	4.10
Cd	111	115	1	ppb	2.022	2.022	4.80

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	1.975	1.975	5.13
Sn	118	72	1	ppb	2.161	2.161	2.60
Sn	119	72	1	ppb	2.141	2.141	1.03
Sb	121	72	1	ppb	1.817	1.817	2.68
Sb	121	72	2	ppb	1.868	1.868	1.49
Sb	123	72	1	ppb	1.832	1.832	4.11
Ba	135	115	1	ppb	1.991	1.991	4.72
Ba	137	115	1	ppb	2.035	2.035	2.79
W	182	209	1	ppb	18.480	18.480	58.98
Pt	195	209	1	ppb	151.520	151.520	51.95
Au	197	209	1	ppb	90.890	90.890	225.96
Tl	203	209	1	ppb	2.676	2.676	8.96
Tl	205	209	1	ppb	2.588	2.588	9.83
Pb	206	209	1	ppb	1.917	1.917	2.26
Pb	207	209	1	ppb	1.974	1.974	2.97
Pb	208	209	1	ppb	1.884	1.884	2.18
U	238	209	1	ppb	1.636	1.636	1.02

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	253,822	1.64	260477	97.4	70	125	
1	Ge	72	1,858,916	2.68	1952537	95.2	70	125	
2	Ge	72	240,671	0.18	250522	96.1	70	125	
1	In	115	1,981,753	2.06	2043460	97.0	70	125	
1	Bi	209	1,927,029	1.51	1953091	98.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	012SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 11:38
Sample Name	ICB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.008	0.008	589.34
Be	9	6	1	ppb	0.034	0.034	11.11
B	11	6	1	ppb	15.793	15.793	10.49
Na	23	72	1	ppb	2.711	2.711	19.38
Na	23	72	2	ppb	2.396	2.396	12.36
Mg	24	72	1	ppb	-0.014	-0.014	-7132.84
Al	27	72	1	ppb	0.272	0.272	469.41
P	31	72	1	ppb	0.631	0.631	133.07
K	39	72	1	ppb	4.570	4.570	132.08
Ca	44	72	1	ppb	-7.604	-7.604	-124.73
Ca	44	72	2	ppb	11.370	11.370	58.93
Ti	47	72	1	ppb	-0.008	-0.008	-589.08
Ti	47	72	2	ppb	-0.047	-0.047	-92.25
V	51	72	1	ppb	-3.441	-3.441	-10.72
V	51	72	2	ppb	-0.560	-0.560	-1.81
Cr	52	72	1	ppb	-0.097	-0.097	-11.65
Cr	52	72	2	ppb	-0.032	-0.032	-74.63
Mn	55	72	1	ppb	-0.008	-0.008	-369.33
Mn	55	72	2	ppb	-0.097	-0.097	-37.41
Fe	56	72	1	ppb	-8.067	-8.067	-9.06
Fe	56	72	2	ppb	0.872	0.872	51.29
Co	59	72	1	ppb	0.000	0.000	-144.62
Co	59	72	2	ppb	0.007	0.007	152.32
Ni	60	72	1	ppb	0.024	0.024	64.55
Ni	60	72	2	ppb	-0.007	-0.007	-138.98
Cu	63	72	1	ppb	-0.170	-0.170	-15.74
Cu	63	72	2	ppb	-0.105	-0.105	-39.78
Cu	65	72	1	ppb	-0.193	-0.193	-12.57
Zn	66	72	1	ppb	-0.055	-0.055	-87.62
Zn	66	72	2	ppb	-0.662	-0.662	-13.75
Zn	68	72	1	ppb	0.102	0.102	31.52
As	75	72	1	ppb	-1.670	-1.670	-40.66
As	75	72	2	ppb	0.013	0.013	75.42
Se	78	72	1	ppb	-0.352	-0.352	-277.63
Se	78	72	2	ppb	0.014	0.014	492.01
Se	82	72	1	ppb	-0.078	-0.078	-232.65
Sr	88	72	1	ppb	0.022	0.022	82.00
Mo	95	72	1	ppb	0.044	0.044	63.85
Mo	97	72	1	ppb	0.029	0.029	117.34
Rh	103	115	1	ppb	-208.246	-208.246	-6.47
Pd	105	115	1	ppb	1.554	1.554	3409.15
Ag	107	72	1	ppb	0.014	0.014	34.84
Ag	109	72	1	ppb	0.013	0.013	21.40
Cd	111	115	1	ppb	0.004	0.004	177.81

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.005	0.005	219.40
Sn	118	72	1	ppb	0.161	0.161	32.30
Sn	119	72	1	ppb	0.154	0.154	14.69
Sb	121	72	1	ppb	-0.302	-0.302	-6.90
Sb	121	72	2	ppb	-0.269	-0.269	-4.22
Sb	123	72	1	ppb	-0.286	-0.286	-1.84
Ba	135	115	1	ppb	-0.011	-0.011	-175.49
Ba	137	115	1	ppb	0.003	0.003	310.86
W	182	209	1	ppb	-48.569	-48.569	-12.00
Pt	195	209	1	ppb	28.832	28.832	385.14
Au	197	209	1	ppb	117.218	117.218	197.08
Tl	203	209	1	ppb	0.546	0.546	19.00
Tl	205	209	1	ppb	0.516	0.516	19.20
Pb	206	209	1	ppb	-0.141	-0.141	-46.80
Pb	207	209	1	ppb	-0.137	-0.137	-47.72
Pb	208	209	1	ppb	-0.138	-0.138	-38.32
U	238	209	1	ppb	0.003	0.003	35.05

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	256,392	1.80	260477	98.4	70	125	
1	Ge	72	1,842,577	1.86	1952537	94.4	70	125	
2	Ge	72	240,215	0.66	250522	95.9	70	125	
1	In	115	1,974,104	0.83	2043460	96.6	70	125	
1	Bi	209	1,924,589	0.67	1953091	98.5	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	013SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 11:46
Sample Name	ICSA	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	0.595	0.595	1.91
Be	9	6	1	ppb	0.032	0.032	44.52
B	11	6	1	ppb	14.346	14.346	5.53
Na	23	72	1	ppb	100287.101	100287.101	1.22
Na	23	72	2	ppb	101293.532	101293.532	0.48
Mg	24	72	1	ppb	99733.117	99733.117	1.02
Al	27	72	1	ppb	91825.171	91825.171	1.16
P	31	72	1	ppb	97204.215	97204.215	0.84
K	39	72	1	ppb	99666.231	99666.231	0.77
Ca	44	72	1	ppb	98238.683	98238.683	0.58
Ca	44	72	2	ppb	96362.167	96362.167	0.98
Ti	47	72	1	ppb	2061.658	2061.658	1.15
Ti	47	72	2	ppb	2080.452	2080.452	0.47
V	51	72	1	ppb	0.811	0.811	65.04
V	51	72	2	ppb	-0.487	-0.487	-2.70
Cr	52	72	1	ppb	1.948	1.948	3.05
Cr	52	72	2	ppb	1.242	1.242	2.35
Mn	55	72	1	ppb	0.088	0.088	97.65
Mn	55	72	2	ppb	0.133	0.133	19.63
Fe	56	72	1	ppb	99029.720	99029.720	1.07
Fe	56	72	2	ppb	99058.238	99058.238	0.68
Co	59	72	1	ppb	0.082	0.082	1.66
Co	59	72	2	ppb	0.017	0.017	77.47
Ni	60	72	1	ppb	0.650	0.650	10.70
Ni	60	72	2	ppb	0.081	0.081	53.94
Cu	63	72	1	ppb	0.962	0.962	6.78
Cu	63	72	2	ppb	0.556	0.556	2.25
Cu	65	72	1	ppb	0.937	0.937	4.03
Zn	66	72	1	ppb	0.985	0.985	5.93
Zn	66	72	2	ppb	-0.232	-0.232	-30.51
Zn	68	72	1	ppb	0.500	0.500	8.20
As	75	72	1	ppb	3.477	3.477	21.68
As	75	72	2	ppb	0.083	0.083	35.28
Se	78	72	1	ppb	2.834	2.834	6.25
Se	78	72	2	ppb	0.166	0.166	351.19
Se	82	72	1	ppb	0.190	0.190	180.33
Sr	88	72	1	ppb	0.886	0.886	3.06
Mo	95	72	1	ppb	2050.260	2050.260	0.20
Mo	97	72	1	ppb	2073.111	2073.111	1.00
Rh	103	115	1	ppb	-221.228	-221.228	-10.35
Pd	105	115	1	ppb	-59.806	-59.806	-48.59
Ag	107	72	1	ppb	0.305	0.305	45.29
Ag	109	72	1	ppb	0.293	0.293	51.15
Cd	111	115	1	ppb	0.774	0.774	4.97

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	0.541	0.541	5.03
Sn	118	72	1	ppb	0.181	0.181	11.89
Sn	119	72	1	ppb	0.223	0.223	12.47
Sb	121	72	1	ppb	-0.201	-0.201	-5.17
Sb	121	72	2	ppb	-0.174	-0.174	-18.18
Sb	123	72	1	ppb	-0.209	-0.209	-8.89
Ba	135	115	1	ppb	0.025	0.025	58.34
Ba	137	115	1	ppb	0.041	0.041	54.24
W	182	209	1	ppb	1408.381	1408.381	5.24
Pt	195	209	1	ppb	303.844	303.844	96.13
Au	197	209	1	ppb	225.077	225.077	61.49
Tl	203	209	1	ppb	0.264	0.264	27.26
Tl	205	209	1	ppb	0.244	0.244	21.17
Pb	206	209	1	ppb	-0.031	-0.031	-237.15
Pb	207	209	1	ppb	-0.030	-0.030	-115.60
Pb	208	209	1	ppb	-0.023	-0.023	-249.49
U	238	209	1	ppb	0.007	0.007	40.57

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	238,527	0.93	260477	91.6	70	125	
1	Ge	72	1,776,915	1.58	1952537	91.0	70	125	
2	Ge	72	239,923	0.43	250522	95.8	70	125	
1	In	115	1,900,670	1.64	2043460	93.0	70	125	
1	Bi	209	1,810,082	1.75	1953091	92.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	014SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 11:50
Sample Name	ICSAB	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	92.362	92.362	2.08
Be	9	6	1	ppb	97.790	97.790	1.60
B	11	6	1	ppb	475.344	475.344	2.42
Na	23	72	1	ppb	109746.104	109746.104	2.42
Na	23	72	2	ppb	113185.438	113185.438	0.96
Mg	24	72	1	ppb	109387.988	109387.988	1.99
Al	27	72	1	ppb	91641.965	91641.965	2.43
P	31	72	1	ppb	97572.988	97572.988	2.34
K	39	72	1	ppb	109917.055	109917.055	2.15
Ca	44	72	1	ppb	108459.938	108459.938	2.25
Ca	44	72	2	ppb	106642.576	106642.576	0.26
Ti	47	72	1	ppb	2170.505	2170.505	1.76
Ti	47	72	2	ppb	2204.458	2204.458	0.70
V	51	72	1	ppb	105.671	105.671	1.00
V	51	72	2	ppb	98.387	98.387	0.54
Cr	52	72	1	ppb	95.156	95.156	1.28
Cr	52	72	2	ppb	97.733	97.733	1.39
Mn	55	72	1	ppb	96.386	96.386	1.48
Mn	55	72	2	ppb	97.127	97.127	0.53
Fe	56	72	1	ppb	109114.819	109114.819	1.81
Fe	56	72	2	ppb	110847.849	110847.849	0.73
Co	59	72	1	ppb	93.735	93.735	2.53
Co	59	72	2	ppb	98.909	98.909	0.95
Ni	60	72	1	ppb	96.511	96.511	2.94
Ni	60	72	2	ppb	97.695	97.695	1.77
Cu	63	72	1	ppb	95.892	95.892	2.08
Cu	63	72	2	ppb	96.360	96.360	0.22
Cu	65	72	1	ppb	95.947	95.947	2.18
Zn	66	72	1	ppb	98.046	98.046	2.30
Zn	66	72	2	ppb	100.253	100.253	0.44
Zn	68	72	1	ppb	97.834	97.834	1.75
As	75	72	1	ppb	102.179	102.179	1.15
As	75	72	2	ppb	98.948	98.948	0.51
Se	78	72	1	ppb	101.678	101.678	2.54
Se	78	72	2	ppb	102.053	102.053	5.83
Se	82	72	1	ppb	97.588	97.588	2.24
Sr	88	72	1	ppb	98.321	98.321	1.84
Mo	95	72	1	ppb	2150.248	2150.248	2.36
Mo	97	72	1	ppb	2177.771	2177.771	1.53
Rh	103	115	1	ppb	-176.063	-176.063	-11.67
Pd	105	115	1	ppb	79.392	79.392	27.12
Ag	107	72	1	ppb	93.210	93.210	2.20
Ag	109	72	1	ppb	92.838	92.838	1.91
Cd	111	115	1	ppb	97.936	97.936	0.92

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	97.614	97.614	1.28
Sn	118	72	1	ppb	97.327	97.327	1.25
Sn	119	72	1	ppb	97.000	97.000	1.66
Sb	121	72	1	ppb	98.473	98.473	1.74
Sb	121	72	2	ppb	96.136	96.136	0.44
Sb	123	72	1	ppb	98.054	98.054	1.71
Ba	135	115	1	ppb	97.077	97.077	0.83
Ba	137	115	1	ppb	98.063	98.063	1.33
W	182	209	1	ppb	1370.086	1370.086	4.95
Pt	195	209	1	ppb	568.066	568.066	16.42
Au	197	209	1	ppb	75.970	75.970	416.98
Tl	203	209	1	ppb	91.372	91.372	6.66
Tl	205	209	1	ppb	87.737	87.737	6.09
Pb	206	209	1	ppb	94.088	94.088	1.39
Pb	207	209	1	ppb	93.861	93.861	1.19
Pb	208	209	1	ppb	91.133	91.133	1.39
U	238	209	1	ppb	98.672	98.672	1.61

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	233,167	0.38	260477	89.5	70	125	
1	Ge	72	1,841,689	1.02	1952537	94.3	70	125	
2	Ge	72	246,164	0.39	250522	98.3	70	125	
1	In	115	1,930,971	0.86	2043460	94.5	70	125	
1	Bi	209	1,862,013	0.79	1953091	95.3	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	020SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 12:21
Sample Name	HS17041053-16SD	**Sample Type**	Sample
Total Dilution	25.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	2.513	62.831	37.10
Be	9	6	1	ppb	0.321	8.033	389.74
B	11	6	1	ppb	7.228	180.704	216.04
Na	23	72	1	ppb	19.666	491.662	98.21
Na	23	72	2	ppb	20.094	502.349	78.03
Mg	24	72	1	ppb	1442.904	36072.610	15.38
Al	27	72	1	ppb	3036.085	75902.129	23.52
P	31	72	1	ppb	109.679	2741.984	9.23
K	39	72	1	ppb	1053.795	26344.873	4.10
Ca	44	72	1	ppb	2624.536	65613.395	9.08
Ca	44	72	2	ppb	2573.882	64347.058	43.43
Ti	47	72	1	ppb	73.392	1834.795	41.85
Ti	47	72	2	ppb	78.126	1953.162	56.43
V	51	72	1	ppb	3.416	85.405	266.42
V	51	72	2	ppb	6.559	163.986	56.04
Cr	52	72	1	ppb	3.206	80.160	83.85
Cr	52	72	2	ppb	3.494	87.348	168.75
Mn	55	72	1	ppb	101.778	2544.448	25.87
Mn	55	72	2	ppb	102.911	2572.763	3.95
Fe	56	72	1	ppb	4790.640	119766.001	10.42
Fe	56	72	2	ppb	4863.753	121593.831	7.91
Co	59	72	1	ppb	1.956	48.905	44.34
Co	59	72	2	ppb	2.040	51.003	69.40
Ni	60	72	1	ppb	3.970	99.258	86.43
Ni	60	72	2	ppb	4.043	101.067	63.75
Cu	63	72	1	ppb	3.608	90.195	43.04
Cu	63	72	2	ppb	3.629	90.726	37.42
Cu	65	72	1	ppb	3.652	91.292	57.31
Zn	66	72	1	ppb	18.160	454.005	16.09
Zn	66	72	2	ppb	17.907	447.685	96.38
Zn	68	72	1	ppb	18.694	467.347	16.50
As	75	72	1	ppb	0.751	18.787	1684.18
As	75	72	2	ppb	1.888	47.203	192.29
Se	78	72	1	ppb	1.143	28.564	2981.49
Se	78	72	2	ppb	0.543	13.566	2041.95
Se	82	72	1	ppb	-0.174	-4.353	-1571.10
Sr	88	72	1	ppb	8.759	218.986	17.77
Mo	95	72	1	ppb	0.129	3.213	207.01
Mo	97	72	1	ppb	0.135	3.369	466.50
Rh	103	115	1	ppb	-255.088	-6377.195	-57.59
Pd	105	115	1	ppb	55.384	1384.590	294.67
Ag	107	72	1	ppb	0.011	0.271	1249.36
Ag	109	72	1	ppb	0.011	0.279	399.92
Cd	111	115	1	ppb	0.088	2.191	201.10
Cd	114	115	1	ppb	0.091	2.286	160.71
Sn	118	72	1	ppb	0.170	4.244	210.51
Sn	119	72	1	ppb	0.154	3.843	453.13

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sb	121	72	1	ppb	-0.314	-7.844	-31.64
Sb	121	72	2	ppb	-0.252	-6.304	-161.61
Sb	123	72	1	ppb	-0.323	-8.074	-42.52
Ba	135	115	1	ppb	28.478	711.940	42.56
Ba	137	115	1	ppb	28.751	718.764	15.18
W	182	209	1	ppb	117.267	2931.672	840.52
Pt	195	209	1	ppb	236.000	5900.008	4160.08
Au	197	209	1	ppb	203.533	5088.319	2619.58
Tl	203	209	1	ppb	0.132	3.289	461.33
Tl	205	209	1	ppb	0.125	3.130	588.40
Pb	206	209	1	ppb	5.307	132.667	72.56
Pb	207	209	1	ppb	4.793	119.817	52.79
Pb	208	209	1	ppb	4.874	121.855	73.83
U	238	209	1	ppb	0.108	2.696	120.56

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	260,150	1.07	260477	99.9	70	125	
1	Ge	72	1,914,544	0.83	1952537	98.1	70	125	
2	Ge	72	247,604	0.23	250522	98.8	70	125	
1	In	115	2,063,903	0.68	2043460	101.0	70	125	
1	Bi	209	1,981,871	0.56	1953091	101.5	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	021SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 12:26
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	94.279	94.279	1.93
Be	9	6	1	ppb	99.372	99.372	1.40
B	11	6	1	ppb	455.058	455.058	4.88
Na	23	72	1	ppb	9919.300	9919.300	1.46
Na	23	72	2	ppb	10372.761	10372.761	0.12
Mg	24	72	1	ppb	9977.708	9977.708	1.82
Al	27	72	1	ppb	112.681	112.681	0.72
P	31	72	1	ppb	490.100	490.100	1.81
K	39	72	1	ppb	9901.880	9901.880	1.23
Ca	44	72	1	ppb	10037.769	10037.769	0.98
Ca	44	72	2	ppb	10255.008	10255.008	1.12
Ti	47	72	1	ppb	98.574	98.574	1.97
Ti	47	72	2	ppb	103.935	103.935	1.43
V	51	72	1	ppb	100.712	100.712	1.98
V	51	72	2	ppb	100.943	100.943	1.35
Cr	52	72	1	ppb	97.231	97.231	1.61
Cr	52	72	2	ppb	101.538	101.538	0.79
Mn	55	72	1	ppb	99.620	99.620	1.78
Mn	55	72	2	ppb	102.715	102.715	0.49
Fe	56	72	1	ppb	9920.232	9920.232	1.22
Fe	56	72	2	ppb	10202.844	10202.844	0.15
Co	59	72	1	ppb	96.302	96.302	1.96
Co	59	72	2	ppb	102.158	102.158	0.90
Ni	60	72	1	ppb	100.020	100.020	1.67
Ni	60	72	2	ppb	103.018	103.018	0.56
Cu	63	72	1	ppb	99.157	99.157	0.81
Cu	63	72	2	ppb	102.350	102.350	0.56
Cu	65	72	1	ppb	99.295	99.295	1.12
Zn	66	72	1	ppb	99.548	99.548	1.48
Zn	66	72	2	ppb	102.216	102.216	0.57
Zn	68	72	1	ppb	99.911	99.911	1.27
As	75	72	1	ppb	98.821	98.821	0.58
As	75	72	2	ppb	100.561	100.561	0.65
Se	78	72	1	ppb	97.740	97.740	1.75
Se	78	72	2	ppb	105.312	105.312	2.08
Se	82	72	1	ppb	97.239	97.239	2.82
Sr	88	72	1	ppb	99.484	99.484	1.50
Mo	95	72	1	ppb	97.518	97.518	2.36
Mo	97	72	1	ppb	98.335	98.335	1.95
Rh	103	115	1	ppb	-164.458	-164.458	-6.35
Pd	105	115	1	ppb	82.440	82.440	108.17
Ag	107	72	1	ppb	99.845	99.845	1.93
Ag	109	72	1	ppb	99.512	99.512	1.55
Cd	111	115	1	ppb	98.872	98.872	1.73

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	98.243	98.243	1.67
Sn	118	72	1	ppb	98.393	98.393	1.24
Sn	119	72	1	ppb	98.179	98.179	1.56
Sb	121	72	1	ppb	99.688	99.688	1.81
Sb	121	72	2	ppb	99.969	99.969	0.73
Sb	123	72	1	ppb	99.698	99.698	1.76
Ba	135	115	1	ppb	98.596	98.596	1.19
Ba	137	115	1	ppb	98.216	98.216	1.00
W	182	209	1	ppb	90.250	90.250	18.81
Pt	195	209	1	ppb	55.868	55.868	275.03
Au	197	209	1	ppb	215.661	215.661	82.27
Tl	203	209	1	ppb	97.408	97.408	3.31
Tl	205	209	1	ppb	98.882	98.882	7.82
Pb	206	209	1	ppb	98.612	98.612	0.89
Pb	207	209	1	ppb	98.757	98.757	0.57
Pb	208	209	1	ppb	95.580	95.580	0.43
U	238	209	1	ppb	99.104	99.104	1.24

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	236,744	1.35	260477	90.9	70	125	
1	Ge	72	1,873,575	1.40	1952537	96.0	70	125	
2	Ge	72	241,944	0.17	250522	96.6	70	125	
1	In	115	2,004,361	1.14	2043460	98.1	70	125	
1	Bi	209	1,907,544	0.10	1953091	97.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**022CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D26k00.B**	**AcqDateTime**	**4/26/2017 12:30**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.14	42.80	ppb	2.5	
Be	9	6	1	0.09	4.88	ppb	1	
B	11	6	1	15.96	2.02	ppb	5	>2.2*DL
Na	23	72	1	9.74	8.25	ppb	250	
Na	23	72	2	9.94	10.15	ppb	250	
Mg	24	72	1	6.67	16.74	ppb	250	
Al	27	72	1	1.97	78.75	ppb	5	
P	31	72	1	0.84	20.76	ppb	5	
K	39	72	1	-3.16	-260.28	ppb	250	
Ca	44	72	1	-4.83	-217.85	ppb	250	
Ca	44	72	2	26.65	16.71	ppb	250	
Ti	47	72	1	0.09	12.21	ppb	2.5	
Ti	47	72	2	0.38	28.87	ppb	2.5	
V	51	72	1	-1.29	-21.44	ppb	2.5	
V	51	72	2	-0.45	-9.02	ppb	2.5	
Cr	52	72	1	-0.04	-60.81	ppb	2.5	
Cr	52	72	2	0.04	28.28	ppb	2.5	
Mn	55	72	1	-0.06	-103.01	ppb	2.5	
Mn	55	72	2	0.00	2231.05	ppb	2.5	
Fe	56	72	1	-12.74	-22.98	ppb	100	
Fe	56	72	2	7.05	0.97	ppb	100	
Co	59	72	1	0.03	26.38	ppb	2.5	
Co	59	72	2	0.04	20.76	ppb	2.5	
Ni	60	72	1	0.05	12.08	ppb	2.5	
Ni	60	72	2	0.03	43.57	ppb	2.5	
Cu	63	72	1	-0.23	-11.23	ppb	2.5	
Cu	63	72	2	-0.08	-60.02	ppb	2.5	
Cu	65	72	1	-0.22	-19.87	ppb	2.5	
Zn	66	72	1	0.02	158.09	ppb	2.5	
Zn	66	72	2	-0.66	-2.18	ppb	2.5	
Zn	68	72	1	0.13	25.29	ppb	2.5	
As	75	72	1	-0.19	-198.93	ppb	2.5	
As	75	72	2	0.06	26.35	ppb	2.5	
Se	78	72	1	-0.24	-770.34	ppb	2.5	
Se	78	72	2	0.20	188.21	ppb	2.5	
Se	82	72	1	-0.20	-21.65	ppb	2.5	
Sr	88	72	1	0.08	25.71	ppb	2.5	
Mo	95	72	1	0.18	4.74	ppb	2.5	
Mo	97	72	1	0.17	12.07	ppb	2.5	
Ag	107	72	1	0.05	11.44	ppb	2.5	
Ag	109	72	1	0.05	16.98	ppb	2.5	
Cd	111	115	1	0.04	33.13	ppb	2.5	
Cd	114	115	1	0.04	25.91	ppb	2.5	
Sn	118	72	1	0.13	28.75	ppb	2.5	
Sn	119	72	1	0.15	18.87	ppb	2.5	
Sb	121	72	1	-0.30	-1.77	ppb	2.5	
Sb	121	72	2	-0.24	-8.04	ppb	2.5	
Sb	123	72	1	-0.30	-1.91	ppb	2.5	
Ba	135	115	1	0.02	287.76	ppb	2.5	
Ba	137	115	1	0.05	12.29	ppb	2.5	
Tl	203	209	1	1.46	8.53	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.41	6.90	ppb	2.5	
Pb	206	209	1	-0.12	-38.08	ppb	2.5	
Pb	207	209	1	-0.11	-49.49	ppb	2.5	
Pb	208	209	1	-0.10	-48.05	ppb	2.5	
U	238	209	1	0.04	4.87	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	267905	2.42	260477	102.9	70	125	
Ge	72	1	1953841	2.36	1952537	100.1	70	125	
Ge	72	2	251401	0.27	250522	100.4	70	125	
In	115	1	2084059	1.82	2043460	102.0	70	125	
Bi	209	1	1986144	2.40	1953091	101.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	023SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 12:36
Sample Name	HS17041053-16MS	**Sample Type**	Sample
Total Dilution	5.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	36.670	183.352	12.00
Be	9	6	1	ppb	20.836	104.179	8.99
B	11	6	1	ppb	98.973	494.867	26.48
Na	23	72	1	ppb	2138.825	10694.124	9.07
Na	23	72	2	ppb	2148.497	10742.485	2.20
Mg	24	72	1	ppb	10391.309	51956.545	11.10
Al	27	72	1	ppb	23380.674	116903.370	8.73
P	31	72	1	ppb	636.328	3181.638	9.29
K	39	72	1	ppb	8507.787	42538.936	11.16
Ca	44	72	1	ppb	16160.907	80804.536	5.18
Ca	44	72	2	ppb	16308.018	81540.090	1.60
Ti	47	72	1	ppb	531.167	2655.833	7.77
Ti	47	72	2	ppb	555.002	2775.009	4.00
V	51	72	1	ppb	57.024	285.121	7.80
V	51	72	2	ppb	58.330	291.648	10.43
Cr	52	72	1	ppb	39.467	197.335	11.93
Cr	52	72	2	ppb	40.578	202.890	5.74
Mn	55	72	1	ppb	676.281	3381.406	8.02
Mn	55	72	2	ppb	695.028	3475.138	2.17
Fe	56	72	1	ppb	28882.021	144410.107	10.99
Fe	56	72	2	ppb	29060.134	145300.672	1.50
Co	59	72	1	ppb	30.201	151.006	11.66
Co	59	72	2	ppb	31.336	156.680	5.12
Ni	60	72	1	ppb	41.841	209.203	9.65
Ni	60	72	2	ppb	42.076	210.380	4.47
Cu	63	72	1	ppb	40.108	200.541	5.65
Cu	63	72	2	ppb	40.913	204.564	3.11
Cu	65	72	1	ppb	40.189	200.945	12.09
Zn	66	72	1	ppb	136.142	680.711	12.56
Zn	66	72	2	ppb	137.464	687.320	9.37
Zn	68	72	1	ppb	136.891	684.456	11.54
As	75	72	1	ppb	29.786	148.932	10.25
As	75	72	2	ppb	30.115	150.577	0.98
Se	78	72	1	ppb	18.860	94.302	30.27
Se	78	72	2	ppb	21.130	105.649	22.18
Se	82	72	1	ppb	19.342	96.708	15.37
Sr	88	72	1	ppb	69.351	346.753	7.74
Mo	95	72	1	ppb	18.714	93.571	8.73
Mo	97	72	1	ppb	18.643	93.213	14.17
Rh	103	115	1	ppb	-207.598	-1037.992	-56.82
Pd	105	115	1	ppb	302.309	1511.546	222.78
Ag	107	72	1	ppb	20.231	101.154	12.00
Ag	109	72	1	ppb	20.206	101.031	8.96
Cd	111	115	1	ppb	20.313	101.563	8.30
Cd	114	115	1	ppb	19.783	98.913	5.90
Sn	118	72	1	ppb	20.128	100.638	10.00
Sn	119	72	1	ppb	20.074	100.369	3.58

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sb	121	72	1	ppb	9.499	47.493	10.68
Sb	121	72	2	ppb	9.433	47.163	3.65
Sb	123	72	1	ppb	9.445	47.224	10.79
Ba	135	115	1	ppb	184.748	923.739	12.36
Ba	137	115	1	ppb	185.118	925.590	6.73
W	182	209	1	ppb	1274.210	6371.049	41.62
Pt	195	209	1	ppb	-24.090	-120.448	-805.50
Au	197	209	1	ppb	-49.216	-246.082	-3309.19
Tl	203	209	1	ppb	18.240	91.202	33.14
Tl	205	209	1	ppb	17.590	87.952	32.30
Pb	206	209	1	ppb	57.694	288.468	6.87
Pb	207	209	1	ppb	54.136	270.680	6.15
Pb	208	209	1	ppb	54.041	270.203	6.23
U	238	209	1	ppb	16.579	82.893	5.81

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	251,270	2.06	260477	96.5	70	125	
1	Ge	72	1,890,449	1.50	1952537	96.8	70	125	
2	Ge	72	245,843	0.29	250522	98.1	70	125	
1	In	115	2,018,087	1.30	2043460	98.8	70	125	
1	Bi	209	1,964,349	1.62	1953091	100.6	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	024SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 12:41
Sample Name	HS17041053-16MSD	**Sample Type**	Sample
Total Dilution	5.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	40.403	202.017	23.80
Be	9	6	1	ppb	22.976	114.881	17.69
B	11	6	1	ppb	109.056	545.282	5.68
Na	23	72	1	ppb	2281.385	11406.924	17.12
Na	23	72	2	ppb	2220.052	11100.262	2.83
Mg	24	72	1	ppb	11038.602	55193.008	14.54
Al	27	72	1	ppb	25390.644	126953.222	11.56
P	31	72	1	ppb	703.760	3518.802	15.31
K	39	72	1	ppb	9250.473	46252.365	16.28
Ca	44	72	1	ppb	16888.733	84443.664	17.06
Ca	44	72	2	ppb	16387.030	81935.151	1.29
Ti	47	72	1	ppb	595.017	2975.085	21.47
Ti	47	72	2	ppb	591.165	2955.823	6.76
V	51	72	1	ppb	63.983	319.913	22.16
V	51	72	2	ppb	60.522	302.610	0.81
Cr	52	72	1	ppb	41.651	208.254	18.05
Cr	52	72	2	ppb	41.384	206.918	1.11
Mn	55	72	1	ppb	609.106	3045.528	15.82
Mn	55	72	2	ppb	607.302	3036.511	2.38
Fe	56	72	1	ppb	30574.035	152870.173	17.92
Fe	56	72	2	ppb	29832.427	149162.135	0.28
Co	59	72	1	ppb	31.463	157.317	14.61
Co	59	72	2	ppb	31.845	159.227	4.55
Ni	60	72	1	ppb	44.964	224.821	16.14
Ni	60	72	2	ppb	44.243	221.213	11.65
Cu	63	72	1	ppb	42.828	214.138	15.27
Cu	63	72	2	ppb	41.739	208.693	5.57
Cu	65	72	1	ppb	42.744	213.718	19.24
Zn	66	72	1	ppb	137.345	686.724	15.05
Zn	66	72	2	ppb	135.745	678.723	2.10
Zn	68	72	1	ppb	138.618	693.092	10.62
As	75	72	1	ppb	33.286	166.432	35.78
As	75	72	2	ppb	30.576	152.882	5.79
Se	78	72	1	ppb	21.726	108.631	60.63
Se	78	72	2	ppb	22.860	114.302	10.57
Se	82	72	1	ppb	21.135	105.677	44.17
Sr	88	72	1	ppb	77.143	385.713	18.39
Mo	95	72	1	ppb	19.979	99.897	15.83
Mo	97	72	1	ppb	19.956	99.782	12.54
Rh	103	115	1	ppb	-225.713	-1128.564	-42.34
Pd	105	115	1	ppb	447.359	2236.796	116.89
Ag	107	72	1	ppb	21.232	106.161	16.67
Ag	109	72	1	ppb	21.233	106.164	12.04
Cd	111	115	1	ppb	21.268	106.340	18.58
Cd	114	115	1	ppb	21.172	105.859	16.87
Sn	118	72	1	ppb	21.114	105.569	12.59
Sn	119	72	1	ppb	21.249	106.243	25.58

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sb	121	72	1	ppb	10.600	53.002	21.13
Sb	121	72	2	ppb	10.332	51.659	2.28
Sb	123	72	1	ppb	10.605	53.024	16.68
Ba	135	115	1	ppb	195.627	978.137	17.11
Ba	137	115	1	ppb	197.225	986.127	12.92
W	182	209	1	ppb	1328.880	6644.400	34.30
Pt	195	209	1	ppb	288.388	1441.938	771.14
Au	197	209	1	ppb	124.275	621.376	816.81
Tl	203	209	1	ppb	19.997	99.986	7.92
Tl	205	209	1	ppb	19.287	96.434	10.81
Pb	206	209	1	ppb	53.809	269.043	20.49
Pb	207	209	1	ppb	50.727	253.637	20.64
Pb	208	209	1	ppb	50.605	253.023	20.57
U	238	209	1	ppb	17.783	88.917	21.63

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	239,692	4.66	260477	92.0	70	125	
1	Ge	72	1,831,999	3.87	1952537	93.8	70	125	
2	Ge	72	247,905	0.06	250522	99.0	70	125	
1	In	115	1,948,800	3.66	2043460	95.4	70	125	
1	Bi	209	1,866,232	3.94	1953091	95.6	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	025SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 12:45
Sample Name	HS17041053-16PDS	**Sample Type**	Sample
Total Dilution	5.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	13.292	66.459	2.68
Be	9	6	1	ppb	93.307	466.534	9.79
B	11	6	1	ppb	18.155	90.776	5.92
Na	23	72	1	ppb	9674.633	48373.165	7.48
Na	23	72	2	ppb	10051.813	50259.067	4.73
Mg	24	72	1	ppb	17029.962	85149.812	7.36
Al	27	72	1	ppb	15805.904	79029.522	4.79
P	31	72	1	ppb	575.394	2876.970	7.83
K	39	72	1	ppb	15098.437	75492.184	8.67
Ca	44	72	1	ppb	23104.393	115521.966	6.34
Ca	44	72	2	ppb	23121.445	115607.225	4.26
Ti	47	72	1	ppb	475.945	2379.724	7.94
Ti	47	72	2	ppb	505.192	2525.958	8.82
V	51	72	1	ppb	132.802	664.012	2.95
V	51	72	2	ppb	134.724	673.619	5.82
Cr	52	72	1	ppb	113.902	569.510	9.00
Cr	52	72	2	ppb	114.004	570.019	2.51
Mn	55	72	1	ppb	610.434	3052.170	9.79
Mn	55	72	2	ppb	636.573	3182.865	3.34
Fe	56	72	1	ppb	34271.405	171357.027	8.06
Fe	56	72	2	ppb	35220.545	176102.723	5.12
Co	59	72	1	ppb	108.928	544.638	9.91
Co	59	72	2	ppb	108.087	540.437	4.07
Ni	60	72	1	ppb	114.657	573.283	9.55
Ni	60	72	2	ppb	117.066	585.329	2.89
Cu	63	72	1	ppb	113.677	568.387	10.44
Cu	63	72	2	ppb	115.835	579.173	3.74
Cu	65	72	1	ppb	113.196	565.981	11.24
Zn	66	72	1	ppb	189.919	949.594	10.89
Zn	66	72	2	ppb	194.460	972.302	4.89
Zn	68	72	1	ppb	192.130	960.649	8.58
As	75	72	1	ppb	103.123	515.617	6.44
As	75	72	2	ppb	105.884	529.419	6.86
Se	78	72	1	ppb	93.859	469.293	10.73
Se	78	72	2	ppb	100.213	501.066	16.20
Se	82	72	1	ppb	94.253	471.266	3.32
Sr	88	72	1	ppb	45.299	226.493	8.15
Mo	95	72	1	ppb	95.299	476.495	10.82
Mo	97	72	1	ppb	95.517	477.585	12.07
Rh	103	115	1	ppb	-194.624	-973.122	-29.58
Pd	105	115	1	ppb	374.801	1874.003	60.12
Ag	107	72	1	ppb	94.496	472.482	9.03
Ag	109	72	1	ppb	94.639	473.193	8.83
Cd	111	115	1	ppb	93.591	467.957	13.03
Cd	114	115	1	ppb	90.505	452.525	11.87
Sn	118	72	1	ppb	0.963	4.816	13.48
Sn	119	72	1	ppb	0.996	4.979	53.82

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sb	121	72	1	ppb	94.096	470.479	10.38
Sb	121	72	2	ppb	95.626	478.132	3.93
Sb	123	72	1	ppb	93.529	467.644	8.98
Ba	135	115	1	ppb	244.220	1221.098	11.53
Ba	137	115	1	ppb	245.986	1229.930	7.39
W	182	209	1	ppb	954.703	4773.513	76.68
Pt	195	209	1	ppb	102.161	510.807	220.04
Au	197	209	1	ppb	117.628	588.140	174.32
Tl	203	209	1	ppb	96.966	484.832	12.70
Tl	205	209	1	ppb	99.914	499.568	16.07
Pb	206	209	1	ppb	119.525	597.623	8.14
Pb	207	209	1	ppb	116.636	583.180	9.24
Pb	208	209	1	ppb	119.115	595.573	9.41
U	238	209	1	ppb	0.576	2.878	9.98

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	253,925	0.99	260477	97.5	70	125	
1	Ge	72	1,904,421	1.34	1952537	97.5	70	125	
2	Ge	72	247,183	0.60	250522	98.7	70	125	
1	In	115	2,010,674	2.16	2043460	98.4	70	125	
1	Bi	209	1,927,189	1.07	1953091	98.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	026SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 12:50
Sample Name	HS17041053-14	**Sample Type**	Sample
Total Dilution	10.000	**Operator Name**	(b) (6) ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	6.212	62.120	18.10
Be	9	6	1	ppb	1.099	10.986	50.59
B	11	6	1	ppb	11.508	115.083	70.86
Na	23	72	1	ppb	62.702	627.015	26.72
Na	23	72	2	ppb	60.586	605.864	13.19
Mg	24	72	1	ppb	3409.352	34093.522	12.04
Al	27	72	1	ppb	7540.877	75408.768	16.13
P	31	72	1	ppb	246.681	2466.809	11.94
K	39	72	1	ppb	2728.776	27287.765	13.58
Ca	44	72	1	ppb	3262.806	32628.057	11.36
Ca	44	72	2	ppb	3243.584	32435.837	19.34
Ti	47	72	1	ppb	238.485	2384.854	4.16
Ti	47	72	2	ppb	245.743	2457.426	12.34
V	51	72	1	ppb	19.599	195.986	38.08
V	51	72	2	ppb	19.137	191.367	5.89
Cr	52	72	1	ppb	8.505	85.051	11.30
Cr	52	72	2	ppb	8.596	85.963	16.50
Mn	55	72	1	ppb	264.066	2640.662	9.14
Mn	55	72	2	ppb	262.958	2629.581	3.23
Fe	56	72	1	ppb	15001.927	150019.275	6.08
Fe	56	72	2	ppb	14633.653	146336.533	2.02
Co	59	72	1	ppb	5.649	56.492	5.82
Co	59	72	2	ppb	5.639	56.394	22.59
Ni	60	72	1	ppb	10.908	109.085	19.97
Ni	60	72	2	ppb	10.359	103.587	22.92
Cu	63	72	1	ppb	33.477	334.772	12.37
Cu	63	72	2	ppb	32.369	323.687	11.32
Cu	65	72	1	ppb	33.330	333.295	7.48
Zn	66	72	1	ppb	54.220	542.200	5.51
Zn	66	72	2	ppb	52.567	525.669	20.37
Zn	68	72	1	ppb	54.473	544.734	12.48
As	75	72	1	ppb	6.019	60.194	140.76
As	75	72	2	ppb	5.668	56.681	12.36
Se	78	72	1	ppb	1.134	11.344	708.34
Se	78	72	2	ppb	1.742	17.423	264.17
Se	82	72	1	ppb	0.592	5.921	803.68
Sr	88	72	1	ppb	22.355	223.546	16.52
Mo	95	72	1	ppb	0.582	5.816	38.27
Mo	97	72	1	ppb	0.585	5.851	107.34
Rh	103	115	1	ppb	-110.766	-1107.657	-125.05
Pd	105	115	1	ppb	271.778	2717.780	236.05
Ag	107	72	1	ppb	0.126	1.255	110.72
Ag	109	72	1	ppb	0.124	1.241	19.66
Cd	111	115	1	ppb	0.274	2.738	133.64
Cd	114	115	1	ppb	0.289	2.893	193.67
Sn	118	72	1	ppb	0.837	8.375	89.54

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	0.819	8.195	75.24
Sb	121	72	1	ppb	6.371	63.706	9.64
Sb	121	72	2	ppb	6.193	61.929	2.63
Sb	123	72	1	ppb	6.435	64.355	10.54
Ba	135	115	1	ppb	70.499	704.989	21.32
Ba	137	115	1	ppb	70.223	702.226	17.06
W	182	209	1	ppb	517.011	5170.108	112.63
Pt	195	209	1	ppb	143.696	1436.964	1494.78
Au	197	209	1	ppb	-72.885	-728.845	-2976.10
Tl	203	209	1	ppb	1.321	13.215	46.42
Tl	205	209	1	ppb	1.239	12.390	66.96
Pb	206	209	1	ppb	351.522	3515.219	17.85
Pb	207	209	1	ppb	329.624	3296.244	16.43
Pb	208	209	1	ppb	329.290	3292.902	15.28
U	238	209	1	ppb	0.315	3.154	56.49

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	263,100	0.21	260477	101.0	70	125	
1	Ge	72	1,899,143	0.35	1952537	97.3	70	125	
2	Ge	72	252,724	0.43	250522	100.9	70	125	
1	In	115	2,036,063	1.34	2043460	99.6	70	125	
1	Bi	209	1,968,451	1.26	1953091	100.8	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	027SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 12:54
Sample Name	HS17041053-15	**Sample Type**	Sample
Total Dilution	50.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	1.120	56.012	151.99
Be	9	6	1	ppb	0.199	9.946	186.65
B	11	6	1	ppb	9.100	455.004	181.48
Na	23	72	1	ppb	14.590	729.512	584.19
Na	23	72	2	ppb	13.818	690.908	249.12
Mg	24	72	1	ppb	722.373	36118.631	212.77
Al	27	72	1	ppb	1307.808	65390.381	210.98
P	31	72	1	ppb	87.468	4373.397	318.57
K	39	72	1	ppb	503.257	25162.871	272.69
Ca	44	72	1	ppb	708.149	35407.448	286.71
Ca	44	72	2	ppb	741.422	37071.097	196.00
Ti	47	72	1	ppb	38.310	1915.511	240.32
Ti	47	72	2	ppb	40.247	2012.331	287.60
V	51	72	1	ppb	2.051	102.562	2834.74
V	51	72	2	ppb	2.695	134.738	126.67
Cr	52	72	1	ppb	1.360	67.988	478.86
Cr	52	72	2	ppb	1.444	72.190	214.17
Mn	55	72	1	ppb	48.175	2408.744	229.26
Mn	55	72	2	ppb	50.140	2506.984	50.24
Fe	56	72	1	ppb	2397.261	119863.062	182.25
Fe	56	72	2	ppb	2417.281	120864.062	30.53
Co	59	72	1	ppb	1.049	52.470	373.41
Co	59	72	2	ppb	1.079	53.962	134.82
Ni	60	72	1	ppb	1.977	98.841	117.20
Ni	60	72	2	ppb	1.881	94.067	399.65
Cu	63	72	1	ppb	45.134	2256.678	217.53
Cu	63	72	2	ppb	44.554	2227.682	24.80
Cu	65	72	1	ppb	45.151	2257.528	157.13
Zn	66	72	1	ppb	15.287	764.330	170.24
Zn	66	72	2	ppb	15.037	751.874	109.95
Zn	68	72	1	ppb	15.378	768.898	278.77
As	75	72	1	ppb	0.884	44.177	6728.79
As	75	72	2	ppb	1.180	58.981	403.53
Se	78	72	1	ppb	1.260	63.024	9597.71
Se	78	72	2	ppb	-0.008	-0.412	-85565.54
Se	82	72	1	ppb	0.061	3.027	22702.56
Sr	88	72	1	ppb	6.281	314.064	248.88
Mo	95	72	1	ppb	0.119	5.941	341.54
Mo	97	72	1	ppb	0.128	6.408	1555.75
Rh	103	115	1	ppb	338.869	16943.470	542.28
Pd	105	115	1	ppb	53.579	2678.947	8784.74
Ag	107	72	1	ppb	0.070	3.524	103.16
Ag	109	72	1	ppb	0.072	3.577	50.01
Cd	111	115	1	ppb	0.081	4.041	648.55
Cd	114	115	1	ppb	0.096	4.780	1071.54
Sn	118	72	1	ppb	1.166	58.299	328.12

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	1.093	54.673	249.84
Sb	121	72	1	ppb	9.775	488.761	187.91
Sb	121	72	2	ppb	9.670	483.490	7.59
Sb	123	72	1	ppb	9.700	484.981	180.19
Ba	135	115	1	ppb	15.869	793.434	141.98
Ba	137	115	1	ppb	16.145	807.228	303.00
W	182	209	1	ppb	32.546	1627.291	8953.84
Pt	195	209	1	ppb	98.632	4931.614	9672.60
Au	197	209	1	ppb	376.588	18829.378	1466.95
Tl	203	209	1	ppb	0.402	20.109	825.29
Tl	205	209	1	ppb	0.386	19.324	802.65
Pb	206	209	1	ppb	1499.309	74965.437	185.64
Pb	207	209	1	ppb	1396.630	69831.490	165.06
Pb	208	209	1	ppb	1406.527	70326.366	181.98
U	238	209	1	ppb	0.056	2.782	268.53

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	262,545	2.78	260477	100.8	70	125	
1	Ge	72	1,896,418	3.37	1952537	97.1	70	125	
2	Ge	72	253,322	0.61	250522	101.1	70	125	
1	In	115	2,015,974	4.03	2043460	98.7	70	125	
1	Bi	209	1,968,900	2.87	1953091	100.8	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	028SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 12:59
Sample Name	HS17041053-17	**Sample Type**	Sample
Total Dilution	50.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	1.113	55.674	74.17
Be	9	6	1	ppb	0.220	11.018	17.92
B	11	6	1	ppb	7.614	380.712	688.28
Na	23	72	1	ppb	12.940	646.998	179.92
Na	23	72	2	ppb	13.662	683.091	520.28
Mg	24	72	1	ppb	719.818	35990.880	68.30
Al	27	72	1	ppb	1325.546	66277.317	47.02
P	31	72	1	ppb	92.830	4641.516	118.89
K	39	72	1	ppb	520.635	26031.729	254.83
Ca	44	72	1	ppb	721.641	36082.035	46.03
Ca	44	72	2	ppb	765.417	38270.828	178.10
Ti	47	72	1	ppb	37.214	1860.697	84.38
Ti	47	72	2	ppb	38.677	1933.872	294.53
V	51	72	1	ppb	2.044	102.199	1118.16
V	51	72	2	ppb	2.836	141.819	89.23
Cr	52	72	1	ppb	1.439	71.938	159.06
Cr	52	72	2	ppb	1.455	72.758	155.90
Mn	55	72	1	ppb	61.041	3052.026	82.45
Mn	55	72	2	ppb	64.681	3234.027	13.51
Fe	56	72	1	ppb	2437.089	121854.441	95.69
Fe	56	72	2	ppb	2543.119	127155.939	28.53
Co	59	72	1	ppb	1.619	80.965	136.39
Co	59	72	2	ppb	1.687	84.347	108.42
Ni	60	72	1	ppb	2.078	103.882	86.90
Ni	60	72	2	ppb	2.053	102.662	221.07
Cu	63	72	1	ppb	30.978	1548.917	82.87
Cu	63	72	2	ppb	31.475	1573.732	22.38
Cu	65	72	1	ppb	30.827	1541.349	106.38
Zn	66	72	1	ppb	14.237	711.863	137.55
Zn	66	72	2	ppb	13.826	691.299	68.80
Zn	68	72	1	ppb	14.447	722.338	53.40
As	75	72	1	ppb	0.759	37.945	3831.38
As	75	72	2	ppb	1.266	63.312	113.93
Se	78	72	1	ppb	-1.009	-50.466	-4505.04
Se	78	72	2	ppb	0.393	19.657	5318.32
Se	82	72	1	ppb	0.086	4.291	8590.00
Sr	88	72	1	ppb	6.040	301.988	73.61
Mo	95	72	1	ppb	0.092	4.625	494.17
Mo	97	72	1	ppb	0.082	4.115	1670.00
Rh	103	115	1	ppb	231.955	11597.728	1253.41
Pd	105	115	1	ppb	110.046	5502.292	878.73
Ag	107	72	1	ppb	0.056	2.779	243.37
Ag	109	72	1	ppb	0.063	3.135	490.01
Cd	111	115	1	ppb	0.083	4.168	912.62
Cd	114	115	1	ppb	0.114	5.706	717.27
Sn	118	72	1	ppb	1.074	53.706	76.68

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Sn	119	72	1	ppb	0.990	49.497	250.72
Sb	121	72	1	ppb	7.801	390.037	108.85
Sb	121	72	2	ppb	7.885	394.246	51.46
Sb	123	72	1	ppb	7.761	388.069	135.53
Ba	135	115	1	ppb	16.989	849.440	125.16
Ba	137	115	1	ppb	16.960	847.997	42.91
W	182	209	1	ppb	124.786	6239.320	2123.27
Pt	195	209	1	ppb	185.489	9274.471	6217.10
Au	197	209	1	ppb	-83.145	-4157.236	-13950.84
Tl	203	209	1	ppb	0.241	12.064	1366.84
Tl	205	209	1	ppb	0.232	11.614	1202.02
Pb	206	209	1	ppb	1287.861	64393.074	91.17
Pb	207	209	1	ppb	1199.523	59976.144	76.01
Pb	208	209	1	ppb	1203.652	60182.605	78.03
U	238	209	1	ppb	0.054	2.715	292.32

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	268,100	1.78	260477	102.9	70	125	
1	Ge	72	1,937,946	1.70	1952537	99.3	70	125	
2	Ge	72	252,508	0.64	250522	100.8	70	125	
1	In	115	2,058,360	1.16	2043460	100.7	70	125	
1	Bi	209	2,008,476	1.77	1953091	102.8	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	031SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 13:12
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	92.985	92.985	2.40
Be	9	6	1	ppb	98.909	98.909	0.95
B	11	6	1	ppb	445.572	445.572	5.09
Na	23	72	1	ppb	9912.233	9912.233	1.37
Na	23	72	2	ppb	10255.468	10255.468	0.69
Mg	24	72	1	ppb	9931.883	9931.883	1.57
Al	27	72	1	ppb	133.893	133.893	1.30
P	31	72	1	ppb	487.261	487.261	1.57
K	39	72	1	ppb	9861.266	9861.266	1.12
Ca	44	72	1	ppb	10028.709	10028.709	1.77
Ca	44	72	2	ppb	10282.831	10282.831	0.92
Ti	47	72	1	ppb	97.456	97.456	1.69
Ti	47	72	2	ppb	99.731	99.731	3.54
V	51	72	1	ppb	99.579	99.579	1.23
V	51	72	2	ppb	99.902	99.902	0.51
Cr	52	72	1	ppb	96.609	96.609	1.81
Cr	52	72	2	ppb	100.359	100.359	0.88
Mn	55	72	1	ppb	100.765	100.765	2.50
Mn	55	72	2	ppb	103.111	103.111	0.48
Fe	56	72	1	ppb	9934.894	9934.894	2.24
Fe	56	72	2	ppb	10228.259	10228.259	0.12
Co	59	72	1	ppb	97.488	97.488	1.75
Co	59	72	2	ppb	101.054	101.054	0.48
Ni	60	72	1	ppb	99.075	99.075	2.50
Ni	60	72	2	ppb	101.010	101.010	0.79
Cu	63	72	1	ppb	98.210	98.210	2.03
Cu	63	72	2	ppb	100.277	100.277	0.37
Cu	65	72	1	ppb	98.449	98.449	2.36
Zn	66	72	1	ppb	99.032	99.032	1.93
Zn	66	72	2	ppb	100.748	100.748	1.59
Zn	68	72	1	ppb	99.103	99.103	1.79
As	75	72	1	ppb	97.474	97.474	1.54
As	75	72	2	ppb	99.549	99.549	0.64
Se	78	72	1	ppb	96.304	96.304	4.30
Se	78	72	2	ppb	104.351	104.351	2.69
Se	82	72	1	ppb	96.704	96.704	1.40
Sr	88	72	1	ppb	98.724	98.724	1.60
Mo	95	72	1	ppb	97.302	97.302	2.35
Mo	97	72	1	ppb	97.856	97.856	2.99
Rh	103	115	1	ppb	-187.023	-187.023	-11.62
Pd	105	115	1	ppb	73.532	73.532	94.88
Ag	107	72	1	ppb	98.302	98.302	2.26
Ag	109	72	1	ppb	98.459	98.459	1.38
Cd	111	115	1	ppb	97.427	97.427	1.80

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	97.144	97.144	1.71
Sn	118	72	1	ppb	97.176	97.176	1.73
Sn	119	72	1	ppb	97.526	97.526	1.76
Sb	121	72	1	ppb	99.078	99.078	1.85
Sb	121	72	2	ppb	98.806	98.806	0.13
Sb	123	72	1	ppb	98.537	98.537	1.95
Ba	135	115	1	ppb	97.988	97.988	2.16
Ba	137	115	1	ppb	97.982	97.982	1.85
W	182	209	1	ppb	60.931	60.931	28.98
Pt	195	209	1	ppb	285.875	285.875	131.79
Au	197	209	1	ppb	275.914	275.914	77.45
Tl	203	209	1	ppb	96.338	96.338	3.58
Tl	205	209	1	ppb	99.490	99.490	4.19
Pb	206	209	1	ppb	97.428	97.428	0.73
Pb	207	209	1	ppb	97.335	97.335	0.25
Pb	208	209	1	ppb	94.506	94.506	0.37
U	238	209	1	ppb	98.401	98.401	0.87

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	247,790	1.65	260477	95.1	70	125	
1	Ge	72	1,928,560	1.49	1952537	98.8	70	125	
2	Ge	72	248,201	0.21	250522	99.1	70	125	
1	In	115	2,062,813	1.71	2043460	100.9	70	125	
1	Bi	209	1,966,848	0.40	1953091	100.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**032CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D26k00.B**	**AcqDateTime**	**4/26/2017 13:17**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	(b) (6) **ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.18	33.47	ppb	2.5	
Be	9	6	1	0.10	8.72	ppb	1	
B	11	6	1	15.79	2.54	ppb	5	>2.2*DL
Na	23	72	1	11.32	10.99	ppb	250	
Na	23	72	2	10.94	7.97	ppb	250	
Mg	24	72	1	8.20	12.44	ppb	250	
Al	27	72	1	4.43	26.47	ppb	5	
P	31	72	1	-0.85	-167.00	ppb	5	
K	39	72	1	0.33	1479.86	ppb	250	
Ca	44	72	1	1.63	429.03	ppb	250	
Ca	44	72	2	29.66	66.81	ppb	250	
Ti	47	72	1	0.16	42.71	ppb	2.5	
Ti	47	72	2	0.00	-3695.27	ppb	2.5	
V	51	72	1	-3.17	-5.74	ppb	2.5	
V	51	72	2	-0.48	-2.68	ppb	2.5	
Cr	52	72	1	-0.12	-17.49	ppb	2.5	
Cr	52	72	2	0.06	30.67	ppb	2.5	
Mn	55	72	1	0.08	68.68	ppb	2.5	
Mn	55	72	2	0.14	5.63	ppb	2.5	
Fe	56	72	1	-12.22	-11.05	ppb	100	
Fe	56	72	2	11.76	4.04	ppb	100	
Co	59	72	1	0.04	11.89	ppb	2.5	
Co	59	72	2	0.06	26.29	ppb	2.5	
Ni	60	72	1	0.09	21.14	ppb	2.5	
Ni	60	72	2	0.03	75.82	ppb	2.5	
Cu	63	72	1	-0.33	-4.24	ppb	2.5	
Cu	63	72	2	-0.16	-5.76	ppb	2.5	
Cu	65	72	1	-0.36	-15.43	ppb	2.5	
Zn	66	72	1	0.04	234.52	ppb	2.5	
Zn	66	72	2	-0.55	-6.24	ppb	2.5	
Zn	68	72	1	0.15	26.24	ppb	2.5	
As	75	72	1	-1.41	-47.32	ppb	2.5	
As	75	72	2	0.08	41.52	ppb	2.5	
Se	78	72	1	-0.42	-186.91	ppb	2.5	
Se	78	72	2	0.15	1.64	ppb	2.5	
Se	82	72	1	0.02	1229.42	ppb	2.5	
Sr	88	72	1	0.10	22.20	ppb	2.5	
Mo	95	72	1	0.18	17.53	ppb	2.5	
Mo	97	72	1	0.17	2.84	ppb	2.5	
Ag	107	72	1	0.07	17.06	ppb	2.5	
Ag	109	72	1	0.07	12.97	ppb	2.5	
Cd	111	115	1	0.06	25.04	ppb	2.5	
Cd	114	115	1	0.06	0.75	ppb	2.5	
Sn	118	72	1	0.18	28.58	ppb	2.5	
Sn	119	72	1	0.19	15.10	ppb	2.5	
Sb	121	72	1	-0.30	-2.76	ppb	2.5	
Sb	121	72	2	-0.24	-6.67	ppb	2.5	
Sb	123	72	1	-0.29	-4.11	ppb	2.5	
Ba	135	115	1	0.09	38.26	ppb	2.5	
Ba	137	115	1	0.08	11.61	ppb	2.5	
Tl	203	209	1	1.44	5.96	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.35	5.54	ppb	2.5	
Pb	206	209	1	-0.01	-798.52	ppb	2.5	
Pb	207	209	1	-0.02	-398.03	ppb	2.5	
Pb	208	209	1	-0.02	-419.15	ppb	2.5	
U	238	209	1	0.04	8.00	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	271869	1.62	260477	104.4	70	125	
Ge	72	1	1950766	1.07	1952537	99.9	70	125	
Ge	72	2	255545	0.26	250522	102.0	70	125	
In	115	1	2121654	1.92	2043460	103.8	70	125	
Bi	209	1	2006260	1.45	1953091	102.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	038SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 13:46
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	95.383	95.383	0.03
Be	9	6	1	ppb	99.909	99.909	0.55
B	11	6	1	ppb	451.926	451.926	2.89
Na	23	72	1	ppb	10137.816	10137.816	0.87
Na	23	72	2	ppb	10269.992	10269.992	0.75
Mg	24	72	1	ppb	10114.610	10114.610	0.96
Al	27	72	1	ppb	131.749	131.749	1.16
P	31	72	1	ppb	494.790	494.790	0.90
K	39	72	1	ppb	9971.878	9971.878	1.35
Ca	44	72	1	ppb	10107.707	10107.707	0.36
Ca	44	72	2	ppb	10215.122	10215.122	0.69
Ti	47	72	1	ppb	97.771	97.771	0.88
Ti	47	72	2	ppb	102.144	102.144	5.08
V	51	72	1	ppb	103.459	103.459	2.67
V	51	72	2	ppb	99.753	99.753	0.07
Cr	52	72	1	ppb	97.285	97.285	1.45
Cr	52	72	2	ppb	99.952	99.952	0.44
Mn	55	72	1	ppb	100.825	100.825	0.86
Mn	55	72	2	ppb	101.694	101.694	0.88
Fe	56	72	1	ppb	9902.961	9902.961	0.64
Fe	56	72	2	ppb	10165.972	10165.972	0.52
Co	59	72	1	ppb	96.151	96.151	1.48
Co	59	72	2	ppb	101.521	101.521	0.28
Ni	60	72	1	ppb	99.182	99.182	1.55
Ni	60	72	2	ppb	101.006	101.006	0.47
Cu	63	72	1	ppb	98.710	98.710	0.97
Cu	63	72	2	ppb	100.903	100.903	0.79
Cu	65	72	1	ppb	99.058	99.058	0.74
Zn	66	72	1	ppb	99.686	99.686	0.24
Zn	66	72	2	ppb	101.210	101.210	2.47
Zn	68	72	1	ppb	99.683	99.683	0.95
As	75	72	1	ppb	99.819	99.819	2.36
As	75	72	2	ppb	100.035	100.035	0.62
Se	78	72	1	ppb	98.775	98.775	1.83
Se	78	72	2	ppb	103.730	103.730	2.89
Se	82	72	1	ppb	99.159	99.159	0.82
Sr	88	72	1	ppb	100.333	100.333	1.11
Mo	95	72	1	ppb	97.588	97.588	0.77
Mo	97	72	1	ppb	98.267	98.267	0.50
Rh	103	115	1	ppb	-201.563	-201.563	-13.09
Pd	105	115	1	ppb	-6.243	-6.243	-611.96
Ag	107	72	1	ppb	99.515	99.515	0.40
Ag	109	72	1	ppb	99.457	99.457	0.52
Cd	111	115	1	ppb	97.517	97.517	1.67

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	97.501	97.501	0.97
Sn	118	72	1	ppb	98.412	98.412	0.89
Sn	119	72	1	ppb	97.991	97.991	1.18
Sb	121	72	1	ppb	100.340	100.340	0.99
Sb	121	72	2	ppb	98.892	98.892	0.58
Sb	123	72	1	ppb	99.765	99.765	1.09
Ba	135	115	1	ppb	98.117	98.117	0.86
Ba	137	115	1	ppb	98.314	98.314	0.53
W	182	209	1	ppb	71.407	71.407	14.37
Pt	195	209	1	ppb	76.956	76.956	288.86
Au	197	209	1	ppb	370.624	370.624	48.22
Tl	203	209	1	ppb	97.224	97.224	2.48
Tl	205	209	1	ppb	101.016	101.016	4.04
Pb	206	209	1	ppb	99.354	99.354	1.27
Pb	207	209	1	ppb	98.208	98.208	1.52
Pb	208	209	1	ppb	95.950	95.950	1.22
U	238	209	1	ppb	99.052	99.052	0.90

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	261,489	0.79	260477	100.4	70	125	
1	Ge	72	1,921,165	1.04	1952537	98.4	70	125	
2	Ge	72	254,645	0.13	250522	101.6	70	125	
1	In	115	2,050,474	1.01	2043460	100.3	70	125	
1	Bi	209	1,936,956	1.68	1953091	99.2	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**039CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D26k00.B**	**AcqDateTime**	**4/26/2017 13:50**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.28	33.42	ppb	2.5	
Be	9	6	1	0.11	17.91	ppb	1	
B	11	6	1	18.82	1.63	ppb	5	>2.2*DL
Na	23	72	1	15.11	2.99	ppb	250	
Na	23	72	2	14.47	4.69	ppb	250	
Mg	24	72	1	8.50	7.67	ppb	250	
Al	27	72	1	3.63	29.90	ppb	5	
P	31	72	1	-0.11	-406.95	ppb	5	
K	39	72	1	5.22	191.87	ppb	250	
Ca	44	72	1	5.65	106.91	ppb	250	
Ca	44	72	2	30.14	54.48	ppb	250	
Ti	47	72	1	0.15	28.25	ppb	2.5	
Ti	47	72	2	0.06	215.65	ppb	2.5	
V	51	72	1	-1.81	-1.86	ppb	2.5	
V	51	72	2	-0.45	-2.06	ppb	2.5	
Cr	52	72	1	-0.03	-35.30	ppb	2.5	
Cr	52	72	2	0.06	45.58	ppb	2.5	
Mn	55	72	1	0.02	92.61	ppb	2.5	
Mn	55	72	2	0.05	97.49	ppb	2.5	
Fe	56	72	1	-5.57	-44.26	ppb	100	
Fe	56	72	2	11.71	1.55	ppb	100	
Co	59	72	1	0.06	3.37	ppb	2.5	
Co	59	72	2	0.08	2.17	ppb	2.5	
Ni	60	72	1	0.09	19.30	ppb	2.5	
Ni	60	72	2	0.05	33.46	ppb	2.5	
Cu	63	72	1	-0.34	-9.71	ppb	2.5	
Cu	63	72	2	-0.16	-11.75	ppb	2.5	
Cu	65	72	1	-0.35	-9.12	ppb	2.5	
Zn	66	72	1	0.06	52.50	ppb	2.5	
Zn	66	72	2	-0.62	-7.39	ppb	2.5	
Zn	68	72	1	0.18	13.30	ppb	2.5	
As	75	72	1	-0.45	-70.61	ppb	2.5	
As	75	72	2	0.12	7.11	ppb	2.5	
Se	78	72	1	-0.68	-283.86	ppb	2.5	
Se	78	72	2	0.36	62.46	ppb	2.5	
Se	82	72	1	-0.19	-139.56	ppb	2.5	
Sr	88	72	1	0.12	11.35	ppb	2.5	
Mo	95	72	1	0.18	6.56	ppb	2.5	
Mo	97	72	1	0.21	9.08	ppb	2.5	
Ag	107	72	1	0.07	18.37	ppb	2.5	
Ag	109	72	1	0.07	14.14	ppb	2.5	
Cd	111	115	1	0.07	3.93	ppb	2.5	
Cd	114	115	1	0.06	22.51	ppb	2.5	
Sn	118	72	1	0.20	14.37	ppb	2.5	
Sn	119	72	1	0.17	19.81	ppb	2.5	
Sb	121	72	1	-0.28	-6.44	ppb	2.5	
Sb	121	72	2	-0.21	-6.75	ppb	2.5	
Sb	123	72	1	-0.29	-2.51	ppb	2.5	
Ba	135	115	1	0.19	123.61	ppb	2.5	
Ba	137	115	1	0.07	17.75	ppb	2.5	
Tl	203	209	1	1.69	8.75	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.59	7.67	ppb	2.5	
Pb	206	209	1	-0.05	-91.69	ppb	2.5	
Pb	207	209	1	-0.05	-61.21	ppb	2.5	
Pb	208	209	1	-0.05	-78.90	ppb	2.5	
U	238	209	1	0.06	4.15	ppb	2.5	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	298854	1.92	260477	114.7	70	125	
Ge	72	1	2022209	2.76	1952537	103.6	70	125	
Ge	72	2	267569	0.44	250522	106.8	70	125	
In	115	1	2170122	1.43	2043460	106.2	70	125	
Bi	209	1	2050086	2.25	1953091	105.0	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Sample QC Report

File Name	046SMPL.D	**File Path**	C:\ICPMH\1\DATA\17D26k00.B
Method File	ICP-ORS.m	**Acq Time**	4/26/2017 14:22
Sample Name	CCV	**Sample Type**	Sample
Total Dilution	1.000	**Operator Name**	[redacted] ICPMS04

FullQuant Table

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Li	7	6	1	ppb	93.642	93.642	2.58
Be	9	6	1	ppb	98.207	98.207	3.22
B	11	6	1	ppb	447.537	447.537	5.83
Na	23	72	1	ppb	9928.004	9928.004	2.35
Na	23	72	2	ppb	10313.774	10313.774	0.39
Mg	24	72	1	ppb	9953.871	9953.871	2.25
Al	27	72	1	ppb	124.135	124.135	2.83
P	31	72	1	ppb	484.080	484.080	2.30
K	39	72	1	ppb	9748.677	9748.677	2.32
Ca	44	72	1	ppb	9889.657	9889.657	2.64
Ca	44	72	2	ppb	10273.528	10273.528	0.53
Ti	47	72	1	ppb	95.904	95.904	2.46
Ti	47	72	2	ppb	101.251	101.251	2.71
V	51	72	1	ppb	98.416	98.416	1.92
V	51	72	2	ppb	99.465	99.465	0.46
Cr	52	72	1	ppb	94.802	94.802	2.22
Cr	52	72	2	ppb	99.359	99.359	0.18
Mn	55	72	1	ppb	98.938	98.938	2.51
Mn	55	72	2	ppb	101.610	101.610	0.93
Fe	56	72	1	ppb	9751.771	9751.771	2.42
Fe	56	72	2	ppb	10120.493	10120.493	0.09
Co	59	72	1	ppb	94.474	94.474	2.41
Co	59	72	2	ppb	99.619	99.619	0.20
Ni	60	72	1	ppb	96.831	96.831	2.74
Ni	60	72	2	ppb	100.127	100.127	0.25
Cu	63	72	1	ppb	96.206	96.206	2.21
Cu	63	72	2	ppb	99.675	99.675	0.30
Cu	65	72	1	ppb	95.879	95.879	2.24
Zn	66	72	1	ppb	97.560	97.560	2.26
Zn	66	72	2	ppb	100.744	100.744	1.61
Zn	68	72	1	ppb	97.317	97.317	1.85
As	75	72	1	ppb	96.595	96.595	1.67
As	75	72	2	ppb	99.800	99.800	0.89
Se	78	72	1	ppb	93.770	93.770	3.61
Se	78	72	2	ppb	102.532	102.532	2.42
Se	82	72	1	ppb	96.203	96.203	3.28
Sr	88	72	1	ppb	97.544	97.544	2.54
Mo	95	72	1	ppb	95.662	95.662	3.08
Mo	97	72	1	ppb	96.025	96.025	3.53
Rh	103	115	1	ppb	-224.176	-224.176	-3.90
Pd	105	115	1	ppb	53.144	53.144	158.15
Ag	107	72	1	ppb	97.918	97.918	2.51
Ag	109	72	1	ppb	97.889	97.889	2.83
Cd	111	115	1	ppb	97.567	97.567	1.93

Sample QC Report

Element	Mass	ISTD	Tune	Units	Raw Conc	Corr. Conc.	Conc RSD
Cd	114	115	1	ppb	96.671	96.671	1.19
Sn	118	72	1	ppb	96.710	96.710	2.73
Sn	119	72	1	ppb	96.967	96.967	2.59
Sb	121	72	1	ppb	98.839	98.839	2.66
Sb	121	72	2	ppb	98.937	98.937	0.83
Sb	123	72	1	ppb	98.711	98.711	2.20
Ba	135	115	1	ppb	96.284	96.284	1.78
Ba	137	115	1	ppb	96.776	96.776	2.30
W	182	209	1	ppb	8.225	8.225	406.39
Pt	195	209	1	ppb	-25.335	-25.335	-590.70
Au	197	209	1	ppb	279.390	279.390	40.30
Tl	203	209	1	ppb	94.815	94.815	5.42
Tl	205	209	1	ppb	98.336	98.336	5.79
Pb	206	209	1	ppb	96.342	96.342	1.64
Pb	207	209	1	ppb	95.906	95.906	1.40
Pb	208	209	1	ppb	93.415	93.415	1.53
U	238	209	1	ppb	97.234	97.234	1.74

ISTD Table

Tune	Element	Mass	CPS	% RSD	Ref CPS	%Rec	QC low	QC High	QC Flag
1	Li	6	268,168	2.10	260477	103.0	70	125	
1	Ge	72	1,949,574	2.32	1952537	99.8	70	125	
2	Ge	72	255,479	0.57	250522	102.0	70	125	
1	In	115	2,078,572	1.78	2043460	101.7	70	125	
1	Bi	209	1,994,654	1.86	1953091	102.1	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Continuing Calibration Blank (CCB) - US EPA Method 6020

Sample Name	**CCB**	**Data File Name**	**047CCB.D**
DataPath	**C:\ICPMH\1\DATA\17D26k00.B**	**AcqDateTime**	**4/26/2017 14:26**
Type	**CCB**	**VialNumber**	**1306**
Dilution	**1**	**Comment**	
Operator	[redacted] **ICPMS04**	**ISTDRefDataFileName**	**003CALB.D**
SamplePassFail	**Fail**	**ISTD PassFail**	**Pass**

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Li	7	6	1	0.27	16.60	ppb	2.5	
Be	9	6	1	0.12	14.93	ppb	1	
B	11	6	1	25.59	1.99	ppb	5	>2.2*DL
Na	23	72	1	18.20	7.91	ppb	250	
Na	23	72	2	17.05	3.95	ppb	250	
Mg	24	72	1	7.43	11.81	ppb	250	
Al	27	72	1	3.63	45.57	ppb	5	
P	31	72	1	0.86	104.68	ppb	5	
K	39	72	1	9.85	63.11	ppb	250	
Ca	44	72	1	0.81	1220.59	ppb	250	
Ca	44	72	2	23.62	21.09	ppb	250	
Ti	47	72	1	0.12	25.75	ppb	2.5	
Ti	47	72	2	0.06	187.37	ppb	2.5	
V	51	72	1	-2.25	-12.80	ppb	2.5	
V	51	72	2	-0.47	-2.60	ppb	2.5	
Cr	52	72	1	-0.04	-52.66	ppb	2.5	
Cr	52	72	2	0.03	148.29	ppb	2.5	
Mn	55	72	1	0.05	180.83	ppb	2.5	
Mn	55	72	2	0.10	34.37	ppb	2.5	
Fe	56	72	1	-5.57	-30.29	ppb	100	
Fe	56	72	2	10.88	3.61	ppb	100	
Co	59	72	1	0.05	10.00	ppb	2.5	
Co	59	72	2	0.07	15.23	ppb	2.5	
Ni	60	72	1	0.10	10.31	ppb	2.5	
Ni	60	72	2	0.07	57.48	ppb	2.5	
Cu	63	72	1	-0.37	-8.87	ppb	2.5	
Cu	63	72	2	-0.19	-6.82	ppb	2.5	
Cu	65	72	1	-0.37	-14.36	ppb	2.5	
Zn	66	72	1	0.07	80.05	ppb	2.5	
Zn	66	72	2	-0.64	-7.16	ppb	2.5	
Zn	68	72	1	0.19	28.99	ppb	2.5	
As	75	72	1	-0.63	-88.30	ppb	2.5	
As	75	72	2	0.10	26.35	ppb	2.5	
Se	78	72	1	-1.53	-95.16	ppb	2.5	
Se	78	72	2	0.17	160.10	ppb	2.5	
Se	82	72	1	-0.15	-73.31	ppb	2.5	
Sr	88	72	1	0.11	14.76	ppb	2.5	
Mo	95	72	1	0.21	16.40	ppb	2.5	
Mo	97	72	1	0.20	17.46	ppb	2.5	
Ag	107	72	1	0.07	13.95	ppb	2.5	
Ag	109	72	1	0.07	12.53	ppb	2.5	
Cd	111	115	1	0.05	4.70	ppb	2.5	
Cd	114	115	1	0.06	4.02	ppb	2.5	
Sn	118	72	1	0.26	10.74	ppb	2.5	
Sn	119	72	1	0.23	17.74	ppb	2.5	
Sb	121	72	1	-0.18	-16.39	ppb	2.5	
Sb	121	72	2	-0.08	-16.48	ppb	2.5	
Sb	123	72	1	-0.17	-4.96	ppb	2.5	
Ba	135	115	1	0.07	7.50	ppb	2.5	
Ba	137	115	1	0.08	27.53	ppb	2.5	
Tl	203	209	1	1.63	7.24	ppb	2.5	

Continuing Calibration Blank (CCB) - US EPA Method 6020

Element	m/z	ISTD	Tune Step	Meas Value	%RSD	Units	QC High	QC Flag
Tl	205	209	1	1.57	6.41	ppb	2.5	
Pb	206	209	1	-0.08	-78.46	ppb	2.5	
Pb	207	209	1	-0.07	-71.50	ppb	2.5	
Pb	208	209	1	-0.07	-81.79	ppb	2.5	
U	238	209	1	0.05	2.77	ppb	2.5	

QC ISTD Table

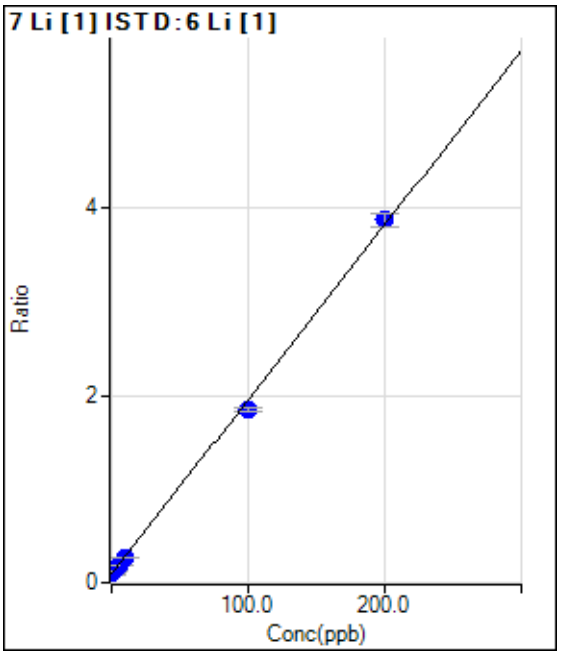
Element	m/z	Tune Step	CPS	%RSD	Ref CPS	%Rec	QC Low	QC High	QC Flag
Li	6	1	302246	1.19	260477	116.0	70	125	
Ge	72	1	2009837	1.24	1952537	102.9	70	125	
Ge	72	2	267113	0.36	250522	106.6	70	125	
In	115	1	2167154	1.20	2043460	106.1	70	125	
Bi	209	1	2064549	1.82	1953091	105.7	70	125	

TuneStep	TuneFile
1	042617a5.u
2	042617he.u

Calibration for 009SMPL.D

Batch Folder:	C:¥ICPMH¥1¥DATA¥17D26k00.B¥
Analysis File:	17D26k00.batch.xml
DA Date-Time:	4/26/2017 11:27:57 AM
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	
Tune Step:	#1 042617a5.u
	#2 042617he.u

Level	Standard Data File	Sample Name	Acq. Date-Time
1	003CALB.D	CAL BLK	4/26/2017 10:58:11 AM
2	004CALS.D	2/10/200	4/26/2017 11:02:47 AM
3	005CALS.D	5/25/500	4/26/2017 11:07:21 AM
4	006CALS.D	10/50/1000	4/26/2017 11:11:57 AM
5	007CALS.D	100/500/10K	4/26/2017 11:16:32 AM
6	008CALS.D	200/1000/20K	4/26/2017 11:20:59 AM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	24125.58	0.0926	P	1.2
2	☐	2.000	1.782	32537.28	0.1258	P	0.8
3	☐	5.000	4.584	45615.46	0.1780	P	0.5
4	☐	10.000	9.222	67767.49	0.2643	P	1.8
5	☐	100.000	94.115	428355.16	1.8451	P	2.5
6	☐	200.000	202.994	794221.34	3.8724	P	3.7
7	☐	1.000					

y = 0.0186 * x + 0.0926

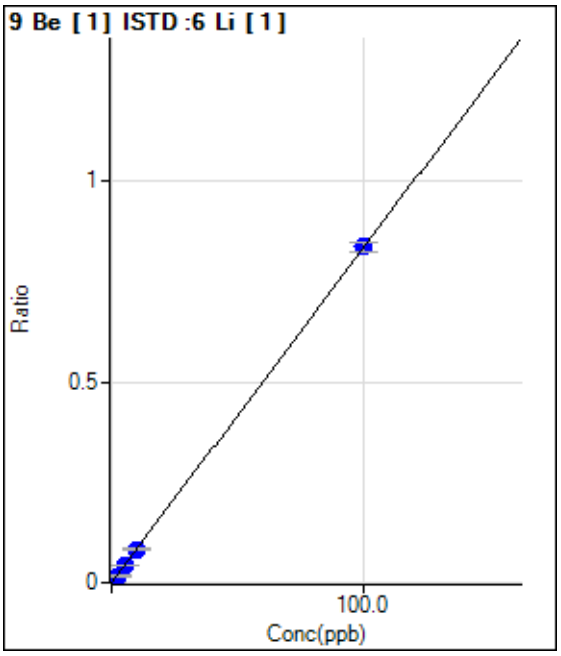
R = 0.9994

DL = 0.172

BEC = 4.973

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	35.56	0.0001	P	34.5
2	☐	2.000	1.935	4220.68	0.0163	P	6.4
3	☐	5.000	4.881	10504.64	0.0410	P	0.7
4	☐	10.000	9.933	21340.13	0.0833	P	4.2
5	☐	100.000	100.014	194333.47	0.8371	P	2.8
6	☐			370944.56	1.8084	P	3.0
7	☐	1.000					

y = 0.0084 * x + 1.3711E-004

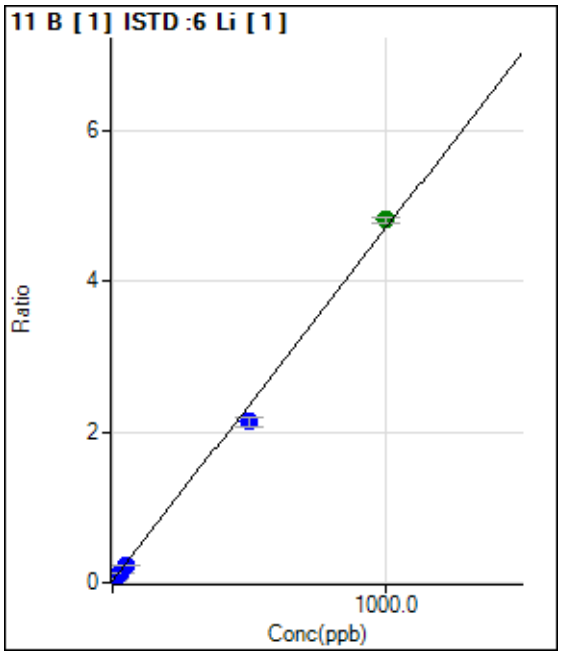
R = 1.0000

DL = 0.01697

BEC = 0.01638

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6102.42	0.0234	P	3.5
2	☐	10.000	8.239	16026.65	0.0620	P	5.6
3	☐	25.000	21.339	31604.64	0.1233	P	3.6
4	☐	50.000	43.251	57886.06	0.2259	P	3.9
5	☐	500.000	451.084	495349.21	2.1345	P	5.1
6	☐	1000.000	1024.905	989244.31	4.8201	A	1.8
7	☐	5.000					

y = 0.0047 * x + 0.0234

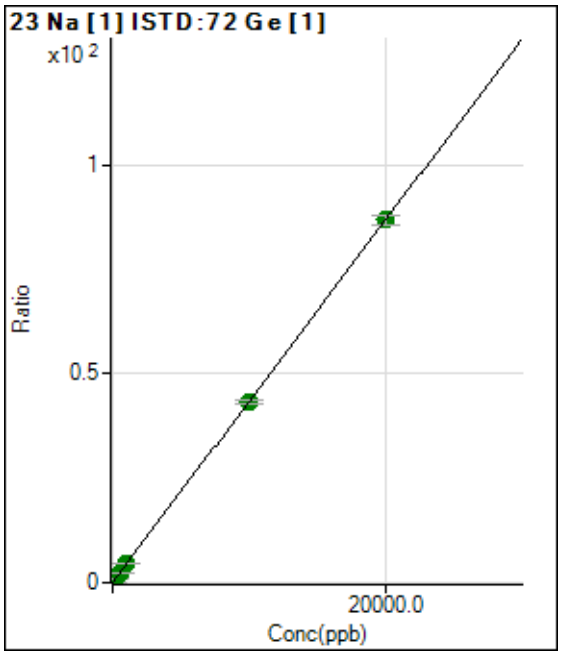
R = 0.9984

DL = 0.5246

BEC = 5.008

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	97904.59	0.0501	P	3.8
2	☐	200.000	210.432	1866258.62	0.9620	A	2.3
3	☐	500.000	525.685	4440217.43	2.3281	A	1.1
4	☐	1000.000	1048.261	8748134.66	4.5925	A	2.1
5	☐	10000.00	9979.025	78952510.49	43.2923	A	2.6
6	☐	20000.00	20007.32	149889265.5	86.7481	A	2.4
7	☐	100.000					

y = 0.0043 * x + 0.0501

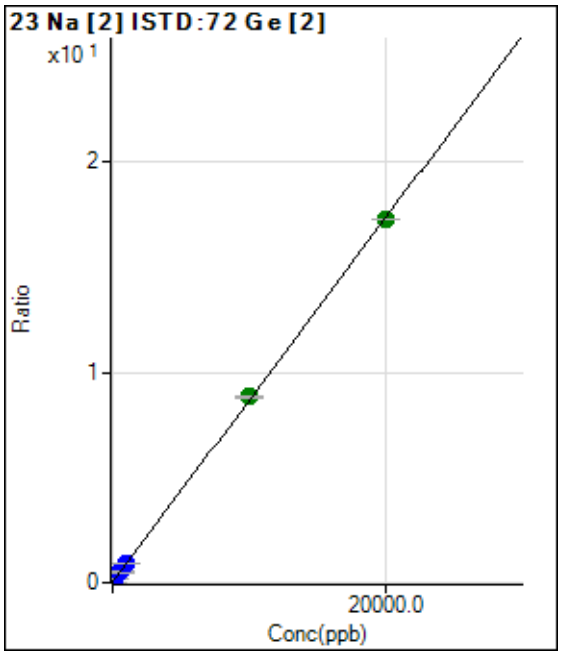
R = 1.0000

DL = 1.318

BEC = 11.56

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3807.24	0.0152	P	5.8
2	☐	200.000	209.196	49155.01	0.1963	P	1.0
3	☐	500.000	602.107	118173.89	0.5364	P	17.0
4	☐	1000.000	1071.156	232313.74	0.9424	P	1.8
5	☐	10000.00	10191.62	2094008.96	8.8368	A	1.1
6	☐	20000.00	19897.98	3990668.73	17.2385	A	0.1
7	☐	100.000					

y = 8.6558E−004 * x + 0.0152

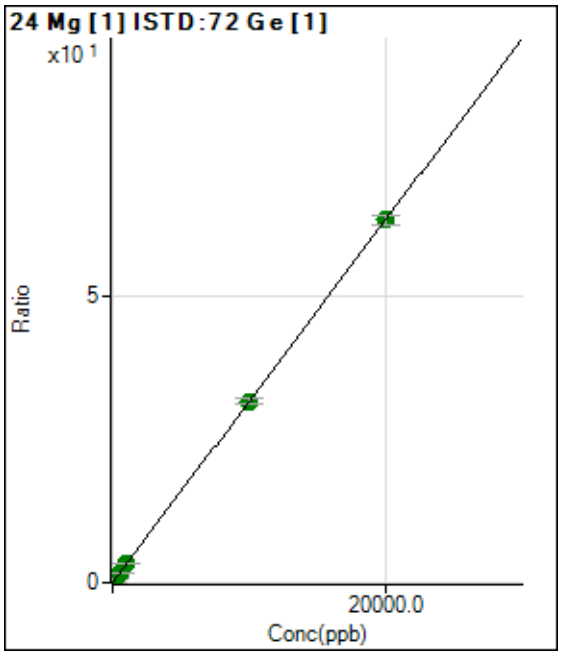
R = 0.9999

DL = 3.051

BEC = 17.56

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30746.61	0.0157	P	18.1
2	☐	200.000	211.373	1330013.88	0.6856	A	2.5
3	☐	500.000	529.733	3231889.85	1.6945	A	1.2
4	☐	1000.000	1049.782	6367196.01	3.3427	A	2.2
5	☐	10000.00	9984.231	57730778.03	31.6581	A	3.0
6	☐	20000.00	20004.53	109567860.5	63.4148	A	2.6
7	☐	100.000					

y = 0.0032 * x + 0.0157

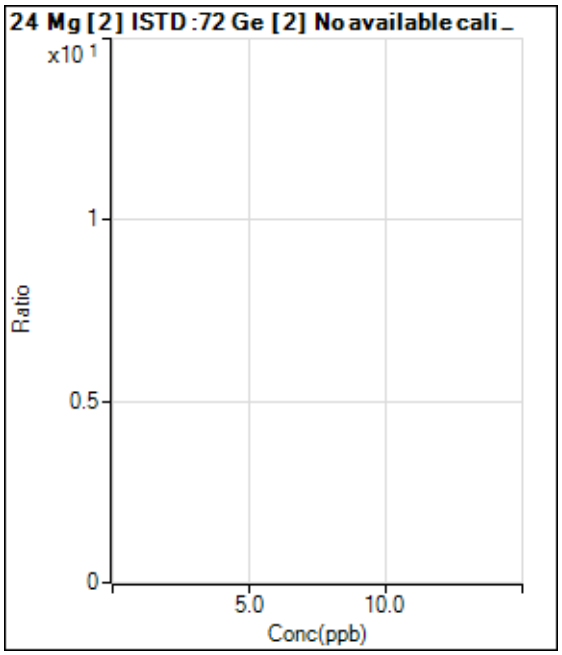
R = 1.0000

DL = 2.685

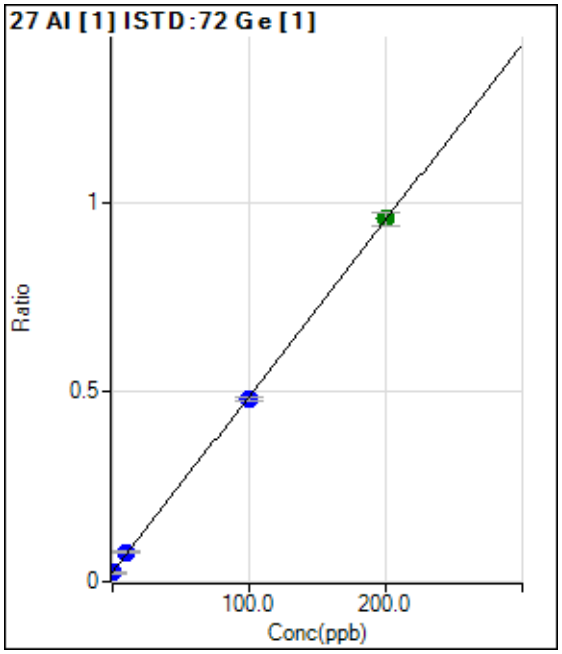
BEC = 4.951

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.00					
6	☐	20000.00					
7	☐	100.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.306	46289.59	0.0236	P	23.0
2	☐			84706.64	0.0436	P	15.8
3	☐			106464.25	0.0558	P	11.7
4	☐	10.000	11.199	146827.83	0.0770	P	6.0
5	☐	100.000	98.333	877542.50	0.4812	P	2.2
6	☐	200.000	200.774	1652047.75	0.9563	A	3.7
7	☐	1.000					

y = 0.0046 * x + 0.0250

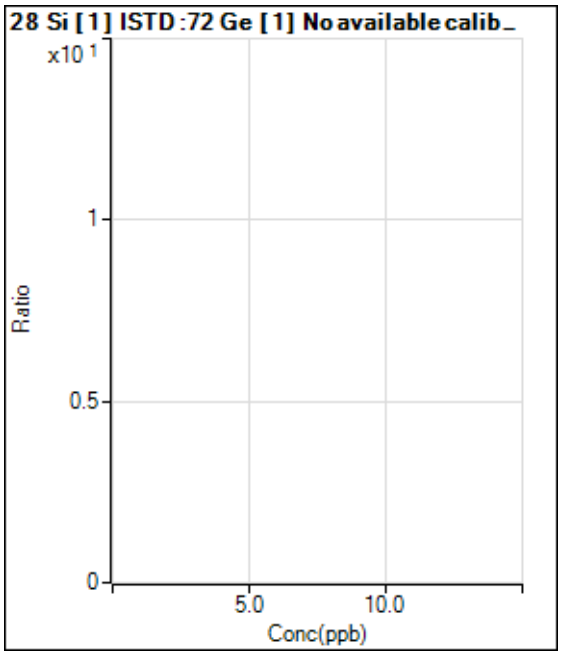
R = 0.9999

DL = 3.518

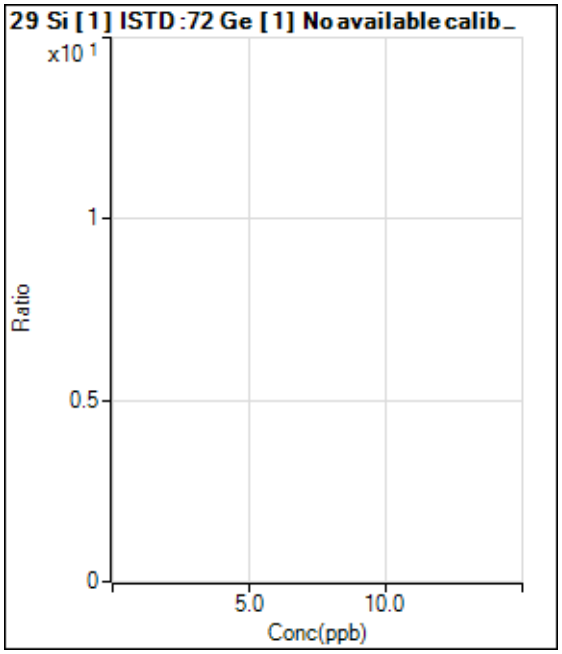
BEC = 5.394

Weight: None

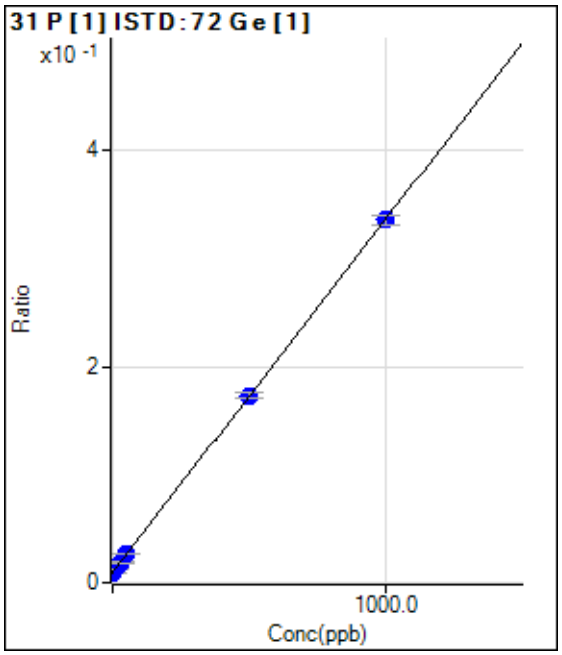
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	10.000					
3	☐	25.000					
4	☐	50.000					
5	☐	500.000					
6	☐	1000.000					
7	☐	5.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18402.56	0.0094	P	4.0
2	☐	10.000	10.961	25247.90	0.0130	P	1.6
3	☐	25.000	28.279	35606.03	0.0187	P	2.4
4	☐	50.000	53.852	51455.25	0.0270	P	2.8
5	☐	500.000	501.440	315749.39	0.1732	P	3.4
6	☐	1000.000	998.996	579852.41	0.3356	P	3.0
7	☐	5.000					

y = 3.2652E−004 * x + 0.0094

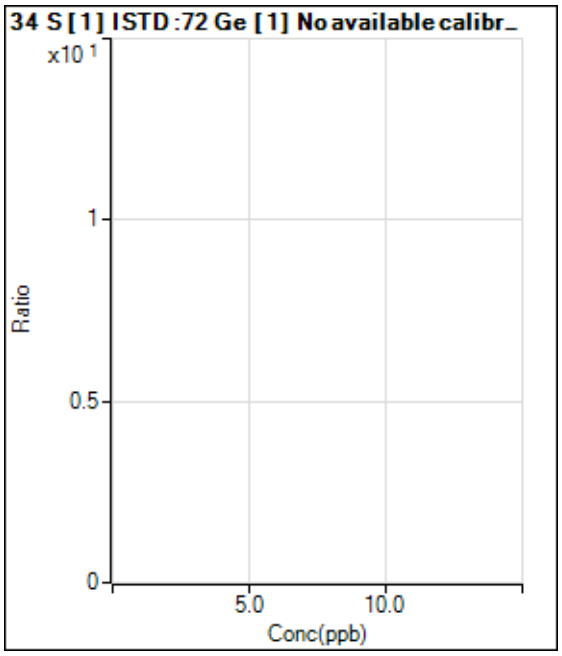
R = 1.0000

DL = 3.492

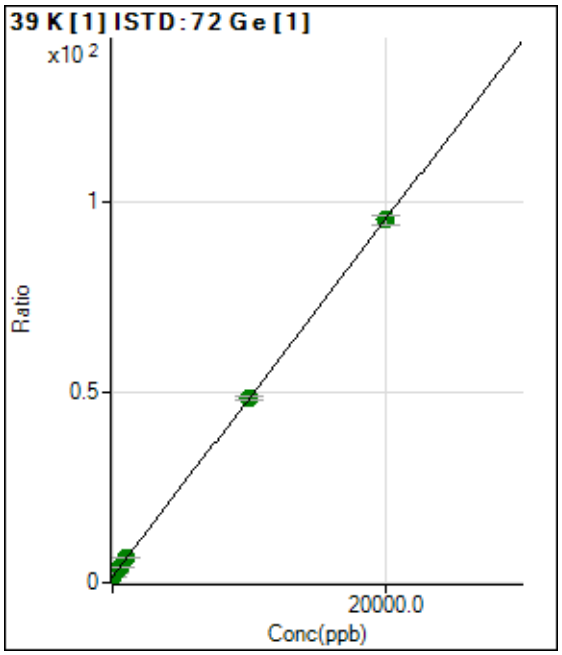
BEC = 28.89

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.00					
6	☐	40000.00					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2983105.16	1.5286	A	2.7
2	☐	200.000	206.059	4836941.87	2.4932	A	2.1
3	☐	500.000	526.034	7611988.36	3.9910	A	0.9
4	☐	1000.000	1043.346	12213752.59	6.4126	A	2.7
5	☐	10000.00	10025.38	88371637.57	48.4583	A	2.7
6	☐	20000.00	19984.42	164279533.1	95.0773	A	2.4
7	☐	100.000					

y = 0.0047 * x + 1.5286

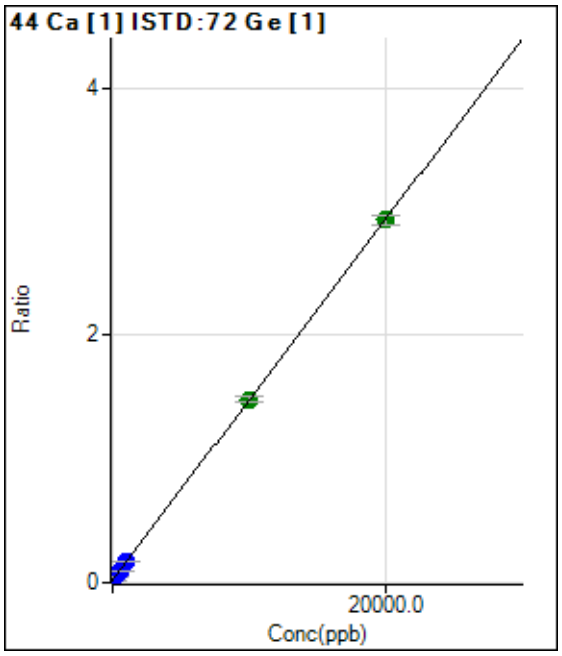
R = 1.0000

DL = 26.01

BEC = 326.5

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40272.28	0.0206	P	2.5
2	☐	200.000	221.336	102573.87	0.0529	P	1.4
3	☐	500.000	531.815	187079.07	0.0981	P	1.2
4	☐	1000.000	1044.261	329041.77	0.1727	P	1.7
5	☐	10000.00	10030.11	2702014.61	1.4816	A	2.7
6	☐	20000.00	19981.71	5064710.41	2.9312	A	2.4
7	☐	100.000					

y = 1.4566E-004 * x + 0.0206

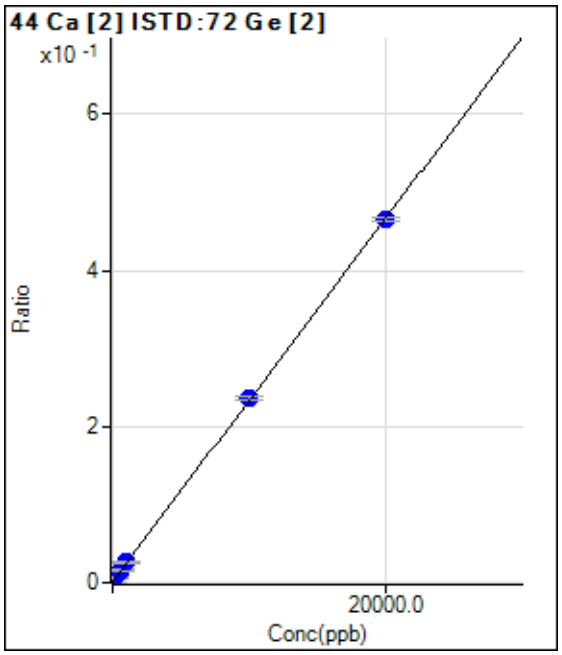
R = 1.0000

DL = 10.58

BEC = 141.5

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	250.01	0.0010	P	7.1
2	☐	200.000	229.125	1584.60	0.0063	P	9.7
3	☐	500.000	608.820	3353.81	0.0152	P	12.4
4	☐	1000.000	1089.604	6491.51	0.0263	P	4.0
5	☐	10000.00	10112.30	55953.47	0.2361	P	1.7
6	☐	20000.00	19936.35	107536.54	0.4645	P	1.2
7	☐	100.000					

y = 2.3251E-005 * x + 9.9819E-004

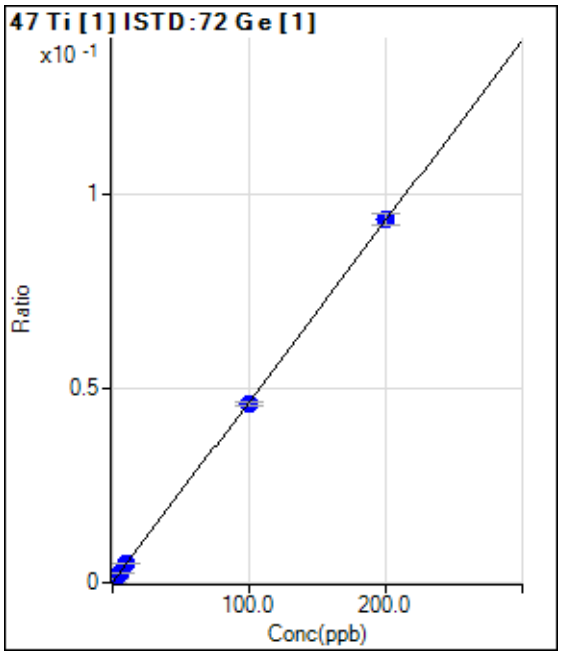
R = 1.0000

DL = 9.192

BEC = 42.93

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	143.34	0.0001	P	26.0
2	☐	2.000	1.989	1939.09	0.0010	P	2.6
3	☐	5.000	5.068	4641.94	0.0024	P	3.4
4	☐	10.000	10.059	9065.01	0.0048	P	1.1
5	☐	100.000	98.900	84128.57	0.0461	P	1.6
6	☐	200.000	200.545	161451.02	0.0935	P	3.0
7	☐	1.000					

y = 4.6561E-004 * x + 7.3503E-005

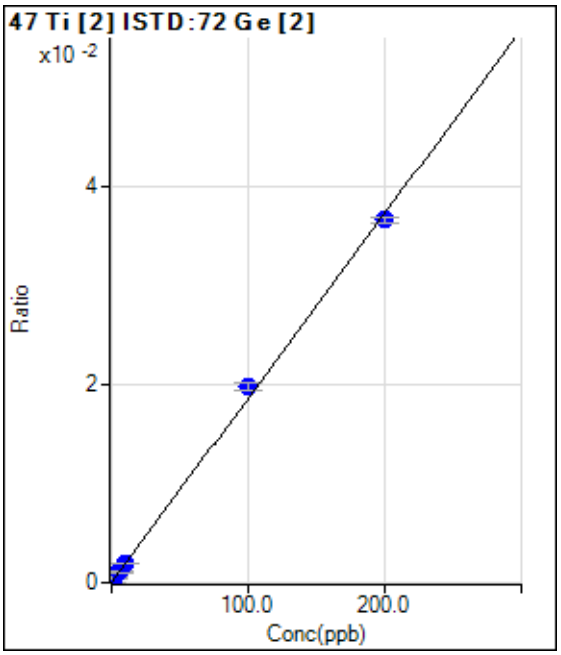
R = 1.0000

DL = 0.1232

BEC = 0.1579

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.
2	☐	2.000	2.284	110.01	0.0004	P	25.8
3	☐	5.000	5.717	241.12	0.0011	P	10.5
4	☐	10.000	10.445	483.36	0.0020	P	7.7
5	☐	100.000	106.533	4708.90	0.0199	P	3.9
6	☐	200.000	196.691	8491.39	0.0367	P	1.6
7	☐	1.000					

y = 1.8641E-004 * x + 1.3397E-005

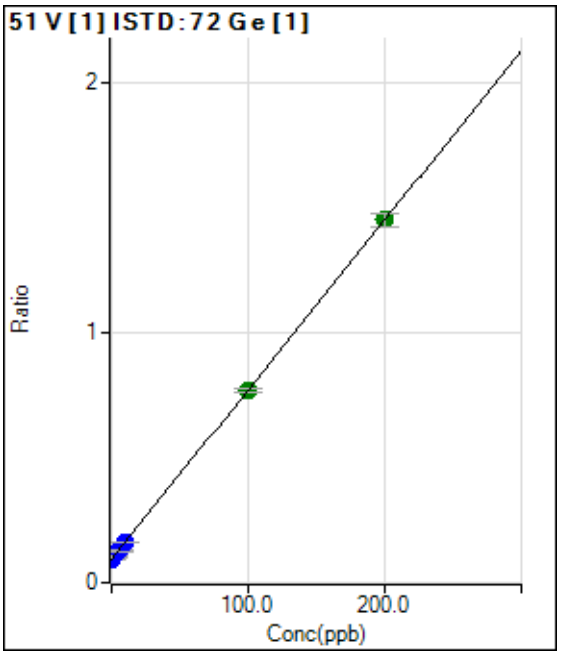
R = 0.9993

DL = 0.3734

BEC = 0.07187

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.065	184915.09	0.0947	P	2.3
2	☐	2.000	1.680	205053.02	0.1056	P	3.9
3	☐	5.000	5.161	246620.88	0.1293	P	4.0
4	☐	10.000	10.290	312726.12	0.1641	P	0.9
5	☐	100.000	99.637	1405588.90	0.7707	A	1.9
6	☐	200.000	200.166	2510113.88	1.4531	A	3.9
7	☐	1.000					

y = 0.0068 * x + 0.0942

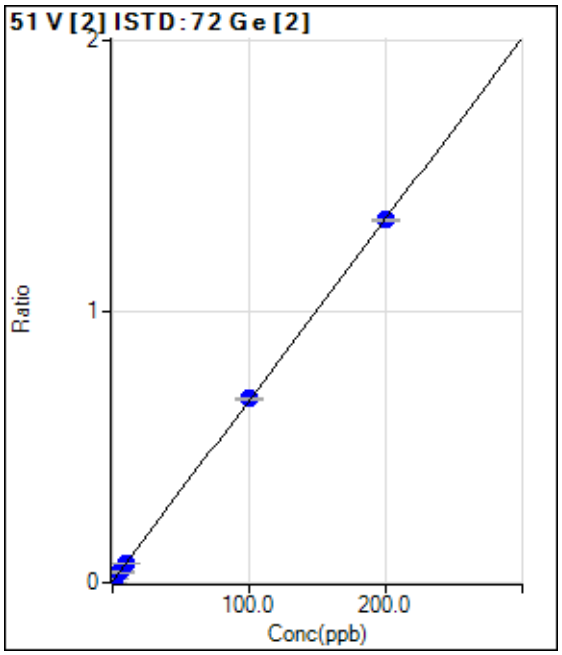
R = 1.0000

DL = 0.9556

BEC = 13.88

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.520	304.46	0.0012	P	5.5
2	☐	2.000	1.557	3780.59	0.0151	P	1.6
3	☐	5.000	5.349	8894.92	0.0404	P	18.5
4	☐	10.000	10.224	18000.14	0.0730	P	2.1
5	☐	100.000	100.812	160745.06	0.6784	P	1.0
6	☐	200.000	199.578	309818.63	1.3383	P	0.8
7	☐	1.000					

y = 0.0067 * x + 0.0047

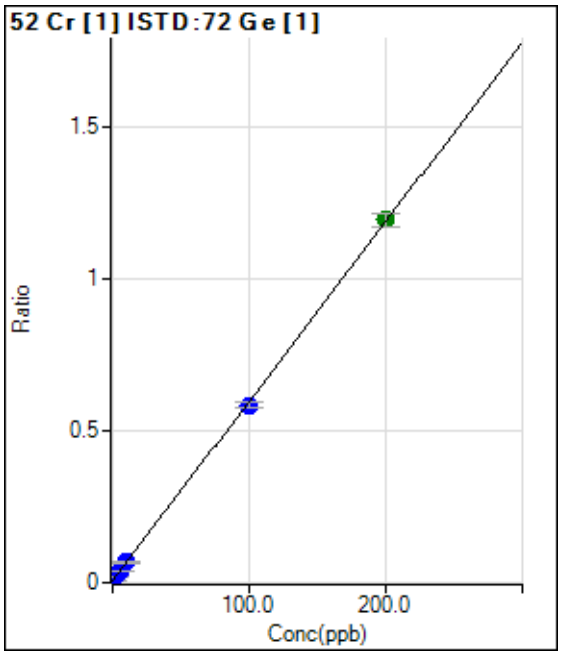
R = 1.0000

DL = 0.03001

BEC = 0.7023

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12696.37	0.0065	P	3.9
2	☐	2.000	2.036	35959.86	0.0185	P	1.7
3	☐	5.000	5.172	70726.75	0.0371	P	0.5
4	☐	10.000	10.273	128070.86	0.0672	P	2.9
5	☐	100.000	97.643	1064638.08	0.5838	P	3.1
6	☐	200.000	201.160	2065910.75	1.1959	A	3.7
7	☐	1.000					

y = 0.0059 * x + 0.0065

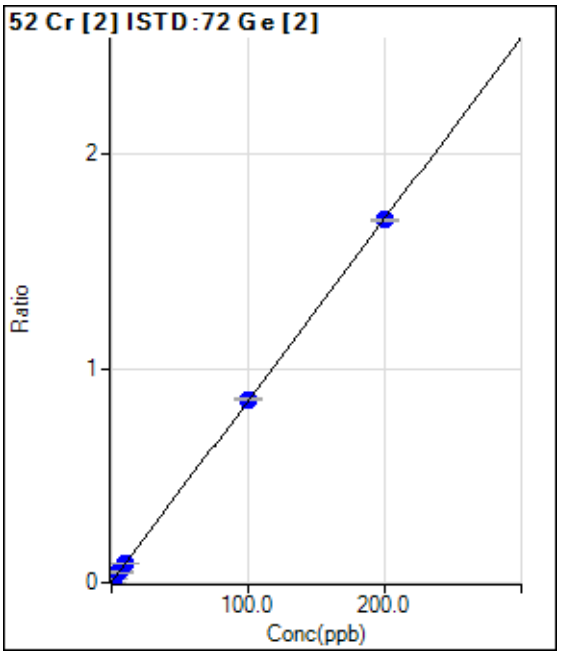
R = 0.9999

DL = 0.1276

BEC = 1.099

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	528.92	0.0021	P	8.2
2	☐	2.000	2.083	4947.60	0.0198	P	0.6
3	☐	5.000	5.923	11535.47	0.0523	P	15.8
4	☐	10.000	10.646	22746.89	0.0923	P	0.9
5	☐	100.000	100.772	202736.02	0.8556	P	1.1
6	☐	200.000	199.558	391735.24	1.6922	P	0.5
7	☐	1.000					

y = 0.0085 * x + 0.0021

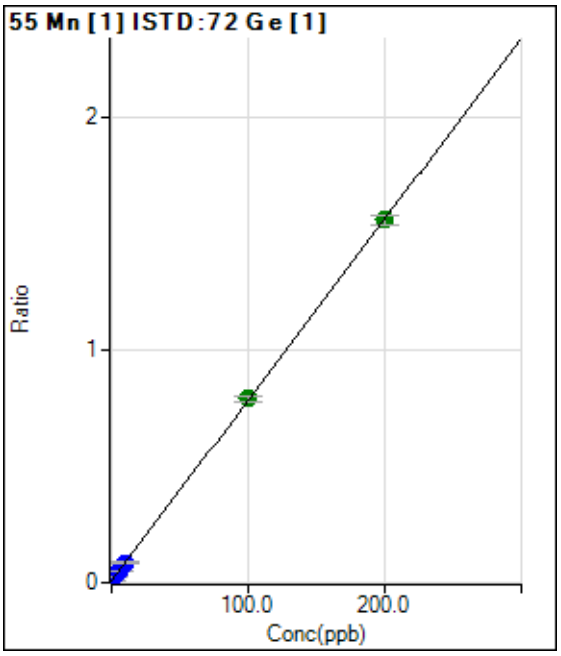
R = 1.0000

DL = 0.06137

BEC = 0.2493

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15280.71	0.0078	P	0.9
2	☐	2.000	2.029	45834.15	0.0236	P	2.0
3	☐	5.000	5.080	90333.28	0.0474	P	0.8
4	☐	10.000	10.075	164248.21	0.0862	P	2.5
5	☐	100.000	100.652	1442549.53	0.7911	A	3.5
6	☐	200.000	199.668	2698196.66	1.5617	A	2.9
7	☐	1.000					

y = 0.0078 * x + 0.0078

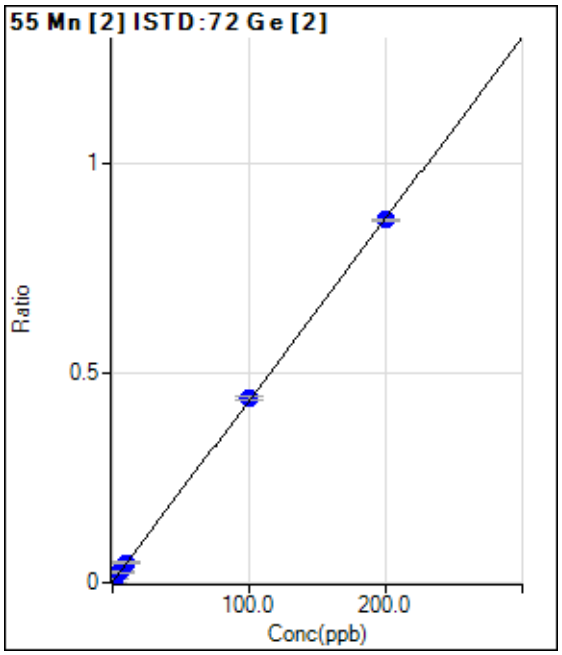
R = 1.0000

DL = 0.02788

BEC = 1.006

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	328.91	0.0013	P	8.2
2	☐	2.000	2.144	2653.66	0.0106	P	4.9
3	☐	5.000	5.928	5959.08	0.0270	P	14.5
4	☐	10.000	10.800	11853.50	0.0481	P	1.5
5	☐	100.000	101.082	104036.28	0.4390	P	2.1
6	☐	200.000	199.394	200195.71	0.8648	P	0.5
7	☐	1.000					

y = 0.0043 * x + 0.0013

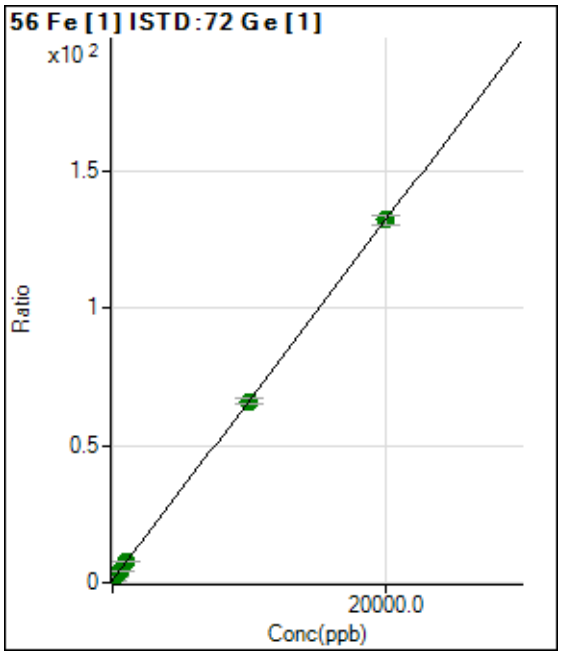
R = 1.0000

DL = 0.07413

BEC = 0.3031

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1649630.67	0.8452	A	2.3
2	☐	200.000	208.107	4290523.83	2.2114	A	1.8
3	☐	500.000	523.025	8160723.63	4.2788	A	1.2
4	☐	1000.000	1039.815	14609688.39	7.6714	A	3.4
5	☐	10000.00	9940.294	120545347.0	66.1012	A	2.7
6	☐	20000.00	20027.20	228610063.2	132.319	A	2.9
7	☐	100.000					

y = 0.0066 * x + 0.8452

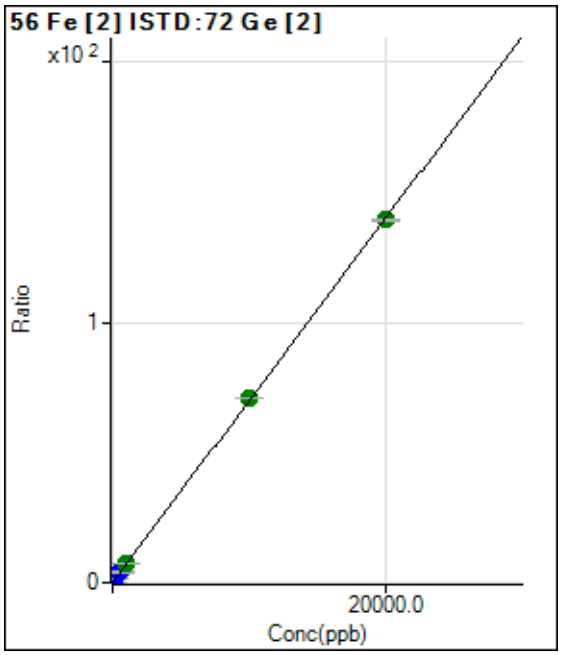
R = 1.0000

DL = 8.887

BEC = 128.8

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7644.30	0.0305	P	7.1
2	☐	200.000	208.437	372516.11	1.4874	P	0.6
3	☐	500.000	590.726	916645.42	4.1595	P	16.6
4	☐	1000.000	1096.187	1896395.14	7.6925	A	0.8
5	☐	10000.00	10129.23	16784455.17	70.8309	A	0.4
6	☐	20000.00	19928.21	32252804.52	139.322	A	0.6
7	☐	100.000					

y = 0.0070 * x + 0.0305

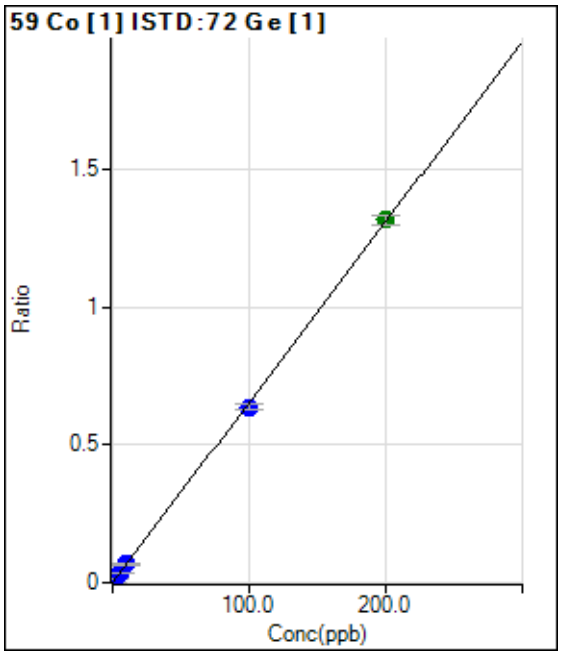
R = 1.0000

DL = 0.9281

BEC = 4.366

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	406.69	0.0002	P	25.5
2	☐	2.000	2.008	25861.64	0.0133	P	3.3
3	☐	5.000	5.112	64112.65	0.0336	P	0.5
4	☐	10.000	10.245	127899.51	0.0672	P	3.6
5	☐	100.000	97.399	1161185.82	0.6367	P	2.6
6	☐	200.000	201.285	2273110.83	1.3156	A	2.7
7	☐	1.000					

y = 0.0065 * x + 2.0726E-004

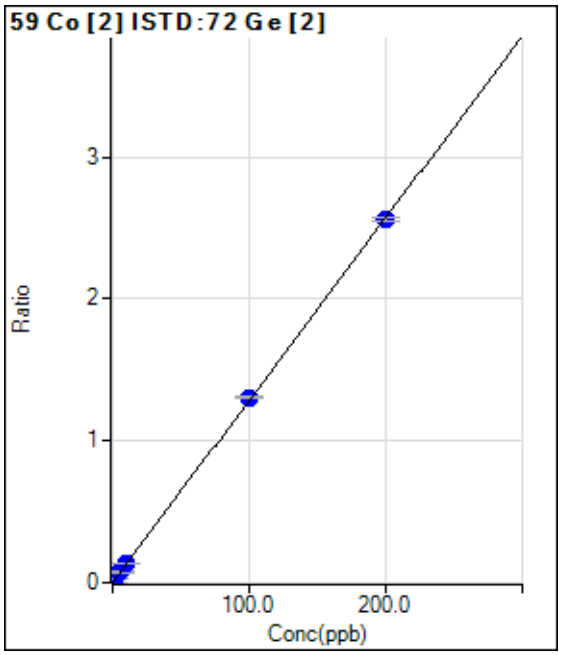
R = 0.9999

DL = 0.02427

BEC = 0.03171

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	54.45	0.0002	P	7.3
2	☐	2.000	2.141	6941.71	0.0277	P	3.8
3	☐	5.000	6.134	17431.77	0.0790	P	15.4
4	☐	10.000	10.958	34747.31	0.1410	P	1.6
5	☐	100.000	101.649	309407.40	1.3057	P	1.0
6	☐	200.000	199.098	591993.34	2.5573	P	0.9
7	☐	1.000					

y = 0.0128 * x + 2.1736E-004

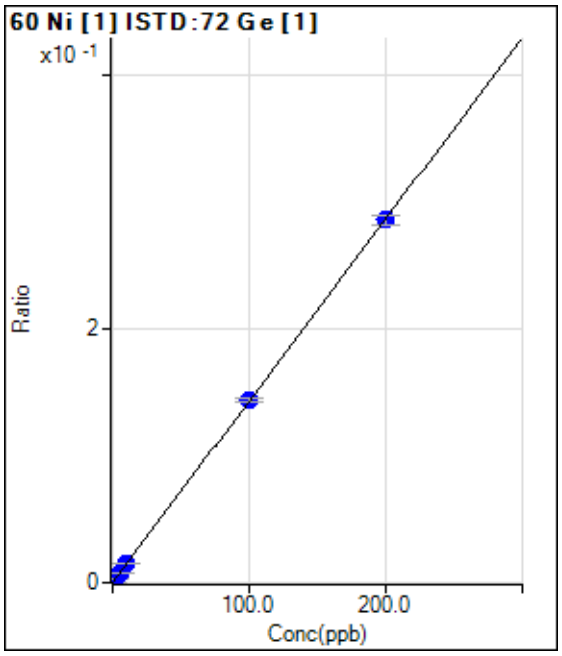
R = 0.9999

DL = 0.003689

BEC = 0.01692

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	134.45	0.0001	P	9.8
2	☐	2.000	2.132	6060.22	0.0031	P	1.8
3	☐	5.000	5.422	14948.22	0.0078	P	2.0
4	☐	10.000	10.683	29286.05	0.0154	P	3.2
5	☐	100.000	100.549	262897.39	0.1442	P	2.7
6	☐	200.000	199.680	494484.28	0.2862	P	3.0
7	☐	1.000					

y = 0.0014 * x + 6.8956E-005

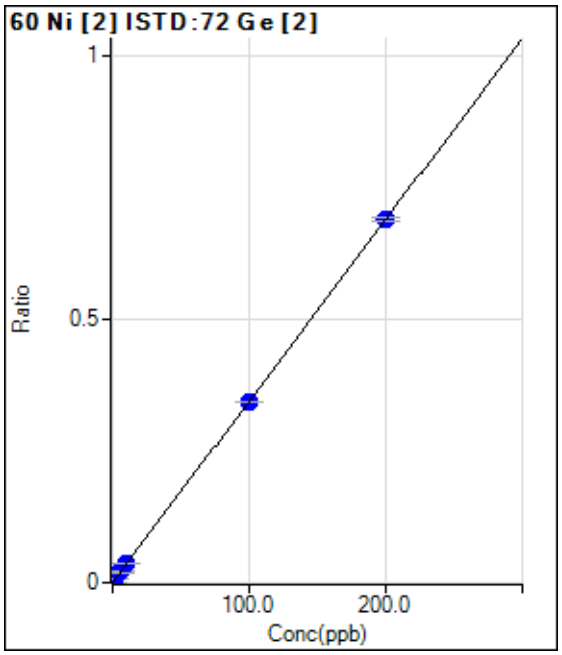
R = 1.0000

DL = 0.01418

BEC = 0.04812

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	73.34	0.0003	P	35.7
2	☐	2.000	2.046	1840.19	0.0073	P	4.1
3	☐	5.000	5.968	4605.26	0.0209	P	15.7
4	☐	10.000	10.816	9266.20	0.0376	P	1.9
5	☐	100.000	99.914	81704.67	0.3448	P	0.3
6	☐	200.000	199.977	159686.15	0.6898	P	1.0
7	☐	1.000					

y = 0.0034 * x + 2.9253E-004

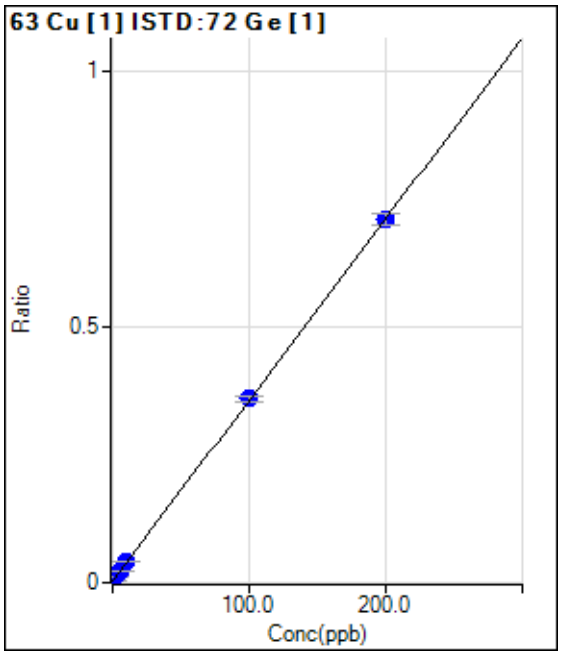
R = 1.0000

DL = 0.09077

BEC = 0.08484

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5358.86	0.0027	P	8.5
2	☐	2.000	2.024	19199.24	0.0099	P	2.3
3	☐	5.000	5.239	40543.39	0.0213	P	2.1
4	☐	10.000	10.622	76714.61	0.0403	P	3.7
5	☐	100.000	100.717	654180.11	0.3587	P	3.0
6	☐	200.000	199.604	1223646.78	0.7083	P	3.0
7	☐	1.000					

y = 0.0035 * x + 0.0027

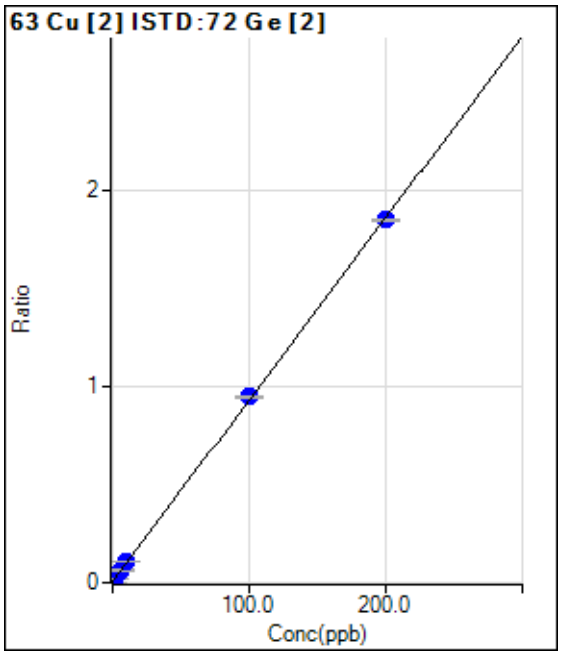
R = 1.0000

DL = 0.1967

BEC = 0.7754

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1172.32	0.0047	P	6.7
2	☐	2.000	2.070	5977.97	0.0239	P	4.1
3	☐	5.000	5.992	13283.50	0.0602	P	15.8
4	☐	10.000	10.806	25850.43	0.1049	P	1.4
5	☐	100.000	101.740	224624.41	0.9479	P	0.7
6	☐	200.000	199.064	428315.15	1.8502	P	0.6
7	☐	1.000					

y = 0.0093 * x + 0.0047

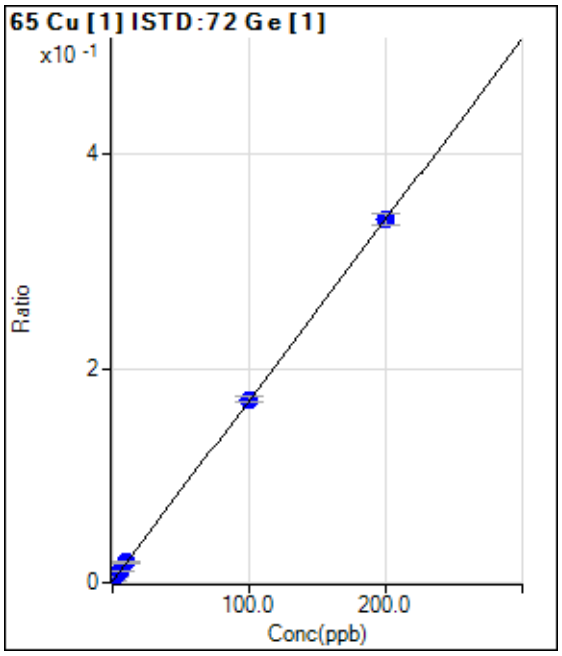
R = 0.9999

DL = 0.1018

BEC = 0.5048

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2591.43	0.0013	P	6.8
2	☐	2.000	2.019	9189.54	0.0047	P	3.2
3	☐	5.000	5.195	19271.62	0.0101	P	0.8
4	☐	10.000	10.430	36097.94	0.0190	P	2.4
5	☐	100.000	100.373	311704.20	0.1709	P	3.2
6	☐	200.000	199.787	585551.24	0.3389	P	3.0
7	☐	1.000					

y = 0.0017 * x + 0.0013

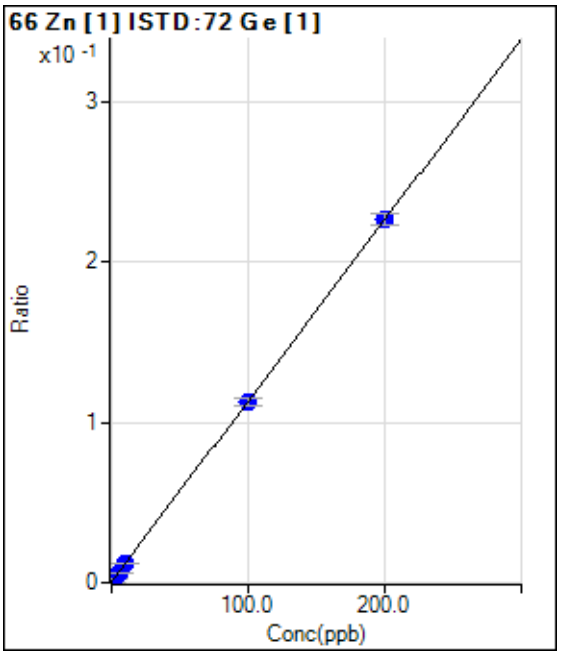
R = 1.0000

DL = 0.1609

BEC = 0.7846

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.158	693.38	0.0004	P	8.8
2	☐	2.000	1.986	5382.22	0.0028	P	2.4
3	☐	5.000	5.128	12054.77	0.0063	P	2.0
4	☐	10.000	10.188	22907.15	0.0120	P	2.6
5	☐	100.000	99.736	206107.02	0.1130	P	4.0
6	☐	200.000	200.119	390934.45	0.2263	P	3.3
7	☐	1.000					

y = 0.0011 * x + 5.3359E-004

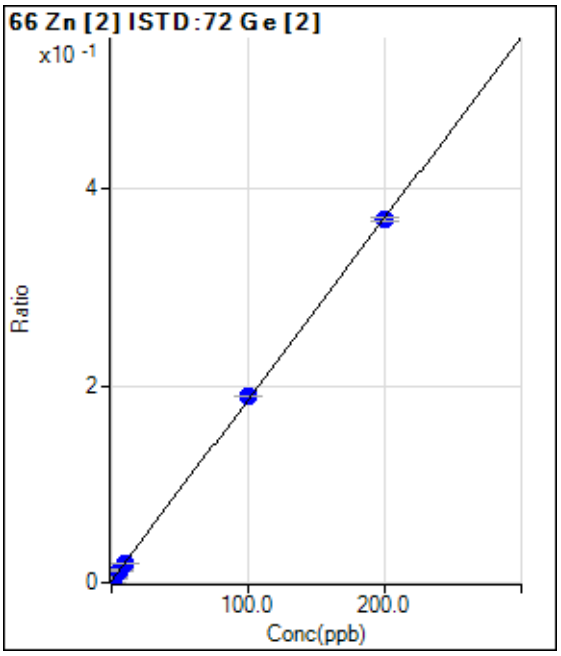
R = 1.0000

DL = 0.08307

BEC = 0.473

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.771	150.01	0.0006	P	15.8
2	☐	2.000	1.538	1215.66	0.0049	P	6.9
3	☐	5.000	5.455	2649.22	0.0121	P	20.7
4	☐	10.000	9.880	4986.52	0.0202	P	0.6
5	☐	100.000	101.798	44931.21	0.1896	P	0.5
6	☐	200.000	199.100	85400.36	0.3689	P	1.2
7	☐	1.000					

y = 0.0018 * x + 0.0020

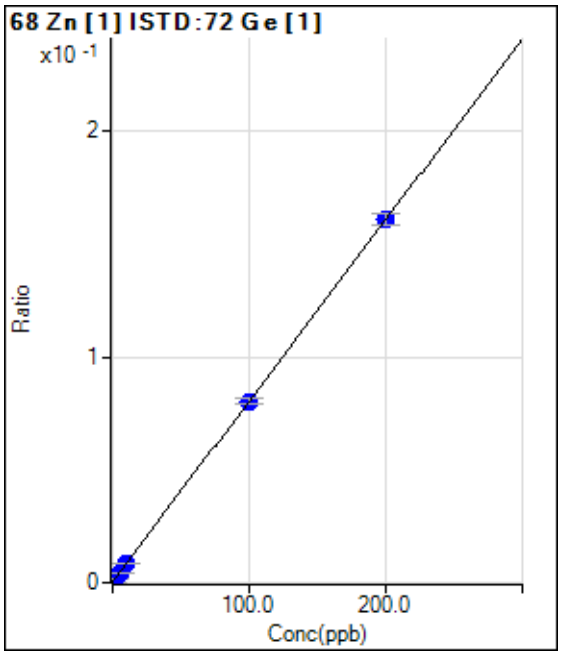
R = 0.9999

DL = 0.1539

BEC = 1.096

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	630.04	0.0003	P	2.7
2	☐	2.000	2.151	3971.76	0.0020	P	1.9
3	☐	5.000	5.162	8506.91	0.0045	P	2.1
4	☐	10.000	10.354	16416.33	0.0086	P	3.3
5	☐	100.000	99.838	146483.31	0.0803	P	3.2
6	☐	200.000	200.058	277529.06	0.1606	P	3.2
7	☐	1.000					

y = 8.0137E-004 * x + 3.2268E-004

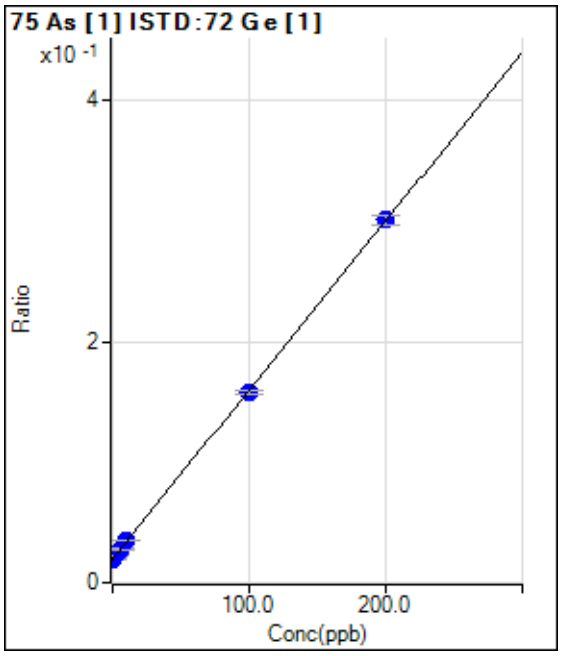
R = 1.0000

DL = 0.03294

BEC = 0.4027

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38918.59	0.0199	P	1.7
2	☐	2.000	1.651	43172.23	0.0222	P	3.8
3	☐	5.000	5.405	52463.95	0.0275	P	3.7
4	☐	10.000	10.820	66874.31	0.0351	P	0.8
5	☐	100.000	98.551	288200.19	0.1580	P	2.4
6	☐	200.000	200.677	520254.64	0.3011	P	2.9
7	☐	1.000					

y = 0.0014 * x + 0.0199

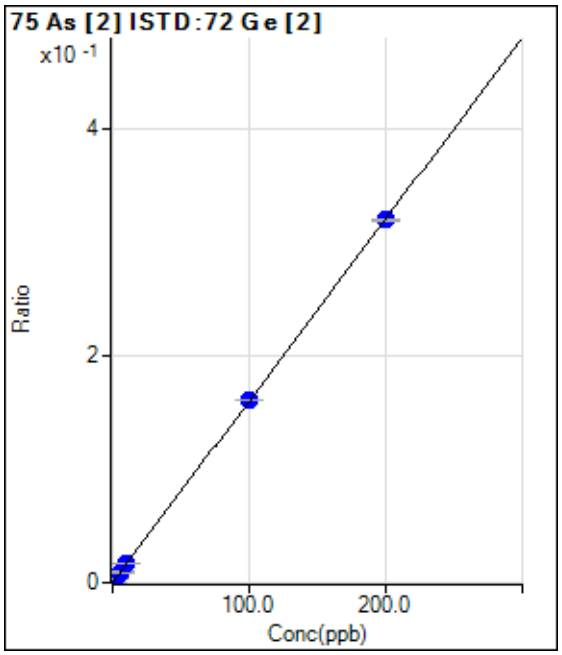
R = 0.9999

DL = 0.7433

BEC = 14.22

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22.96	0.0001	P	50.3
2	☐	2.000	2.098	864.85	0.0035	P	5.6
3	☐	5.000	5.645	2024.60	0.0091	P	11.4
4	☐	10.000	10.394	4128.71	0.0167	P	0.8
5	☐	100.000	100.580	38216.21	0.1613	P	0.8
6	☐	200.000	199.673	74096.70	0.3201	P	0.3
7	☐	1.000					

y = 0.0016 * x + 9.1824E-005

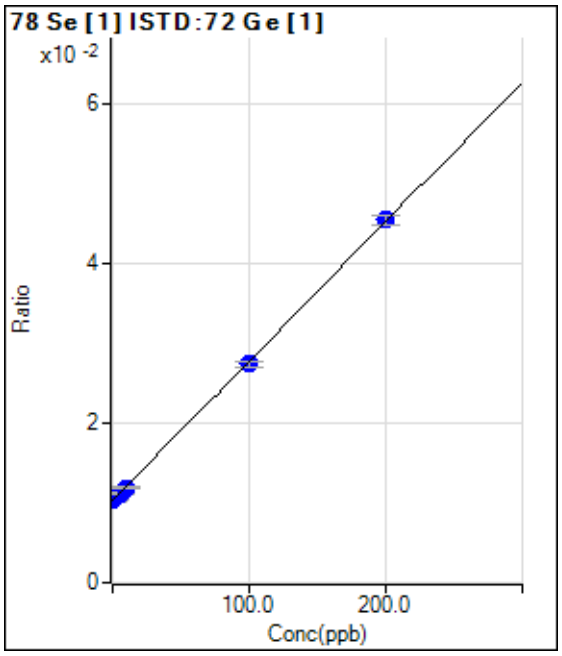
R = 1.0000

DL = 0.08643

BEC = 0.0573

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20089.07	0.0103	P	3.3
2	☐	2.000	1.101	20346.80	0.0105	P	2.1
3	☐	5.000	4.987	21298.33	0.0112	P	1.2
4	☐	10.000	9.133	22647.47	0.0119	P	2.9
5	☐	100.000	97.917	49971.73	0.0274	P	3.0
6	☐	200.000	201.094	78495.28	0.0454	P	2.5
7	☐	1.000					

y = 1.7472E-004 * x + 0.0103

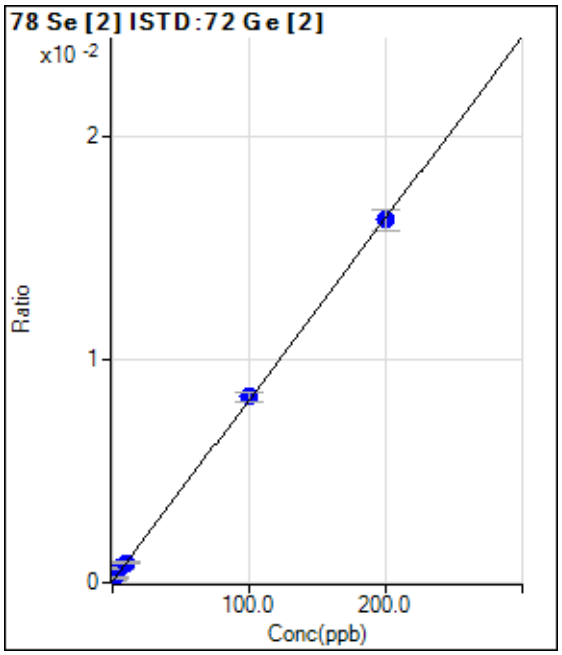
R = 0.9999

DL = 5.787

BEC = 58.92

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15.55	0.0001	P	25.4
2	☐	2.000	2.385	64.08	0.0003	P	34.4
3	☐	5.000	7.443	147.78	0.0007	P	12.9
4	☐	10.000	10.051	216.67	0.0009	P	6.0
5	☐	100.000	101.751	1974.22	0.0083	P	4.9
6	☐	200.000	199.057	3758.62	0.0162	P	5.9
7	☐	1.000					

y = 8.1267E-005 * x + 6.2055E-005

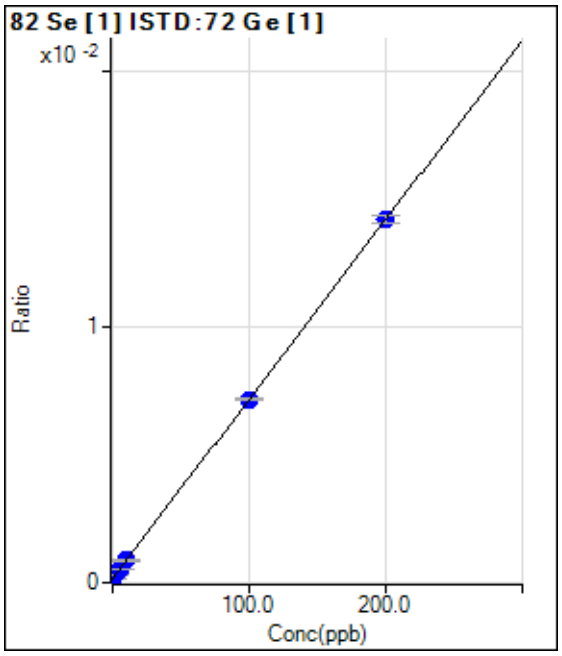
R = 0.9999

DL = 0.5823

BEC = 0.7636

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	308.90	0.0002	P	8.3
2	☐	2.000	1.824	555.20	0.0003	P	7.3
3	☐	5.000	5.189	997.45	0.0005	P	4.0
4	☐	10.000	10.112	1654.92	0.0009	P	0.8
5	☐	100.000	100.063	13108.54	0.0072	P	1.3
6	☐	200.000	199.960	24541.30	0.0142	P	2.1
7	☐	1.000					

y = 7.0235E-005 * x + 1.5827E-004

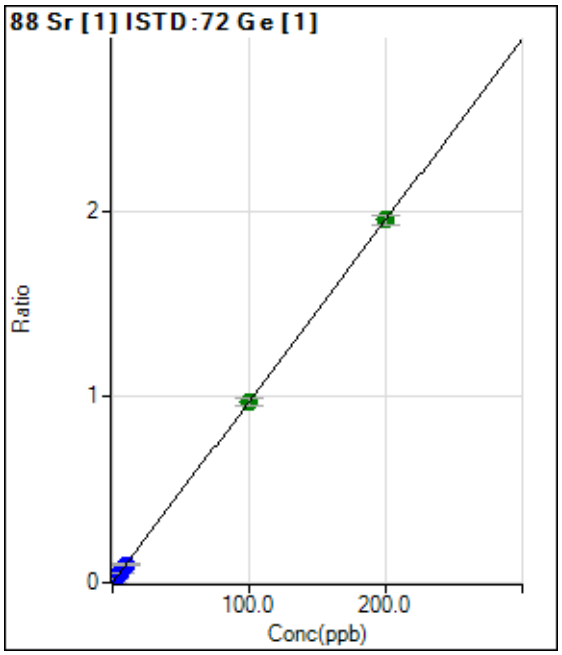
R = 1.0000

DL = 0.559

BEC = 2.253

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1327.89	0.0007	P	27.0
2	☐	2.000	1.994	39049.89	0.0201	P	2.3
3	☐	5.000	4.974	93820.13	0.0492	P	1.4
4	☐	10.000	9.971	186528.00	0.0979	P	2.8
5	☐	100.000	99.705	1774477.59	0.9732	A	3.5
6	☐	200.000	200.150	3374289.95	1.9529	A	2.5
7	☐	1.000					

y = 0.0098 * x + 6.7664E-004

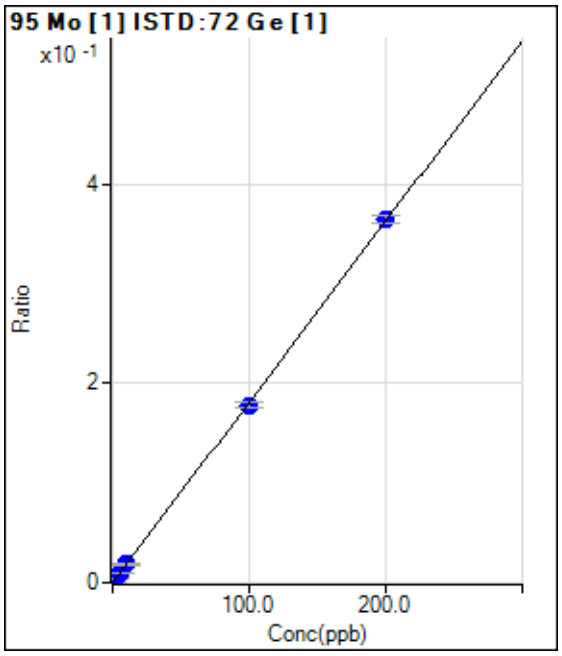
R = 1.0000

DL = 0.05629

BEC = 0.06937

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	170.01	0.0001	P	32.4
2	☐	2.000	1.991	7160.76	0.0037	P	0.7
3	☐	5.000	5.017	17485.36	0.0092	P	0.7
4	☐	10.000	10.088	34935.30	0.0183	P	4.4
5	☐	100.000	98.132	324031.82	0.1777	P	3.3
6	☐	200.000	200.929	628552.99	0.3638	P	2.3
7	☐	1.000					

y = 0.0018 * x + 8.6522E-005

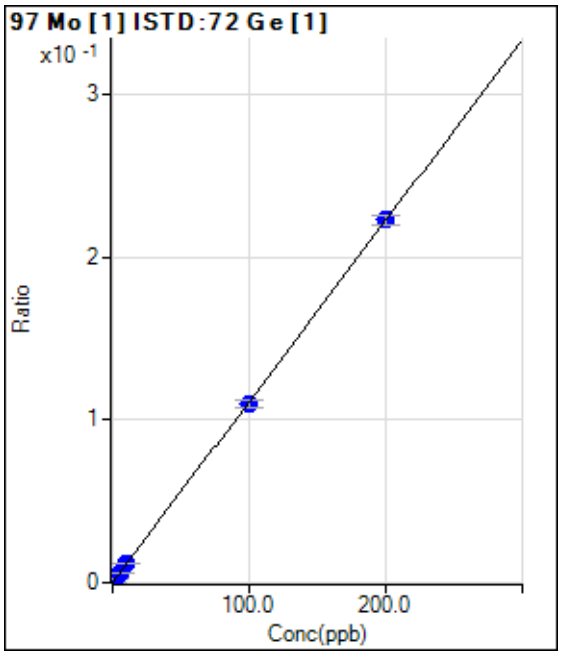
R = 0.9999

DL = 0.04651

BEC = 0.0478

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	136.67	0.0001	P	56.2
2	☐	2.000	1.978	4404.13	0.0023	P	3.5
3	☐	5.000	5.068	10894.05	0.0057	P	2.7
4	☐	10.000	10.193	21747.24	0.0114	P	1.4
5	☐	100.000	99.057	201149.06	0.1103	P	3.8
6	☐	200.000	200.460	385641.11	0.2232	P	2.3
7	☐	1.000					

y = 0.0011 * x + 6.9251E-005

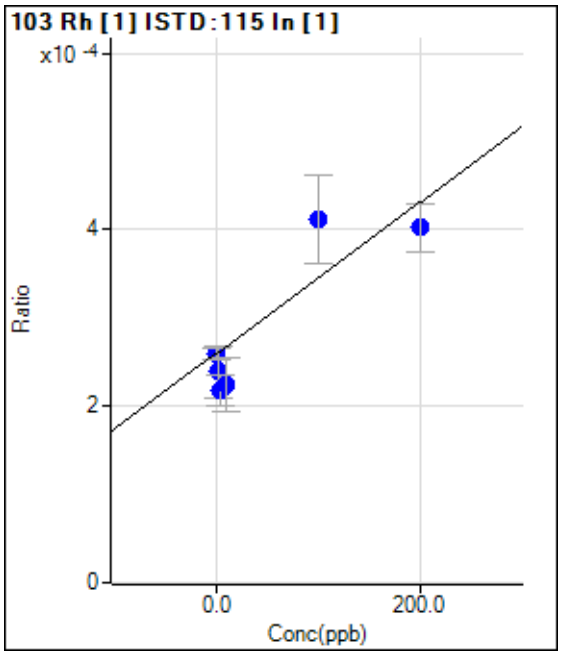
R = 1.0000

DL = 0.1048

BEC = 0.06222

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	531.14	0.0003	P	4.8
2	☐	2.000	-24.044	481.14	0.0002	P	25.0
3	☐	5.000	-49.294	435.58	0.0002	P	16.0
4	☐	10.000	-41.700	448.92	0.0002	P	27.0
5	☐	100.000	176.431	804.50	0.0004	P	24.3
6	☐	200.000	165.987	740.05	0.0004	P	13.8
7	☐	1.000					

y = 8.5768E-007 * x + 2.5971E-004

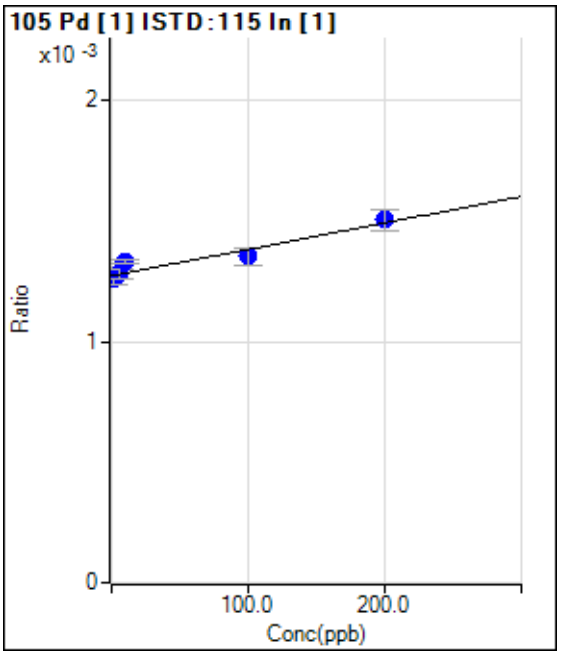
R = 0.8911

DL = 43.29

BEC = 302.8

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2598.10	0.0013	P	5.2
2	☐	2.000	-13.541	2535.86	0.0013	P	3.2
3	☐	5.000	6.393	2565.87	0.0013	P	3.7
4	☐	10.000	54.404	2673.67	0.0013	P	1.2
5	☐	100.000	73.429	2652.57	0.0014	P	5.1
6	☐	200.000	211.186	2757.04	0.0015	P	5.6
7	☐	1.000					

y = 1.0949E-006 * x + 0.0013

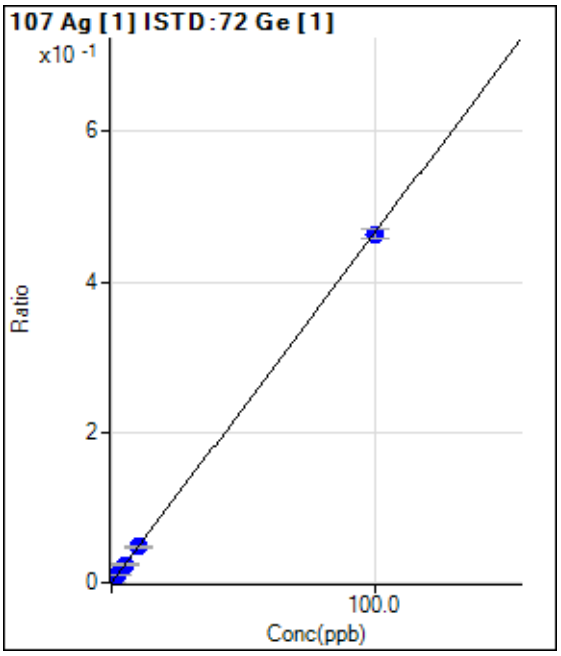
R = 0.9561

DL = 182

BEC = 1162

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	134.45	0.0001	P	31.7
2	☐	2.000	2.001	18131.79	0.0093	P	2.6
3	☐	5.000	5.134	45529.34	0.0239	P	3.5
4	☐	10.000	10.237	90546.77	0.0475	P	2.1
5	☐	100.000	99.970	845431.46	0.4636	P	2.8
6	☐			1685840.15	0.9758	A	3.0
7	☐	1.000					

y = 0.0046 * x + 6.9166E-005

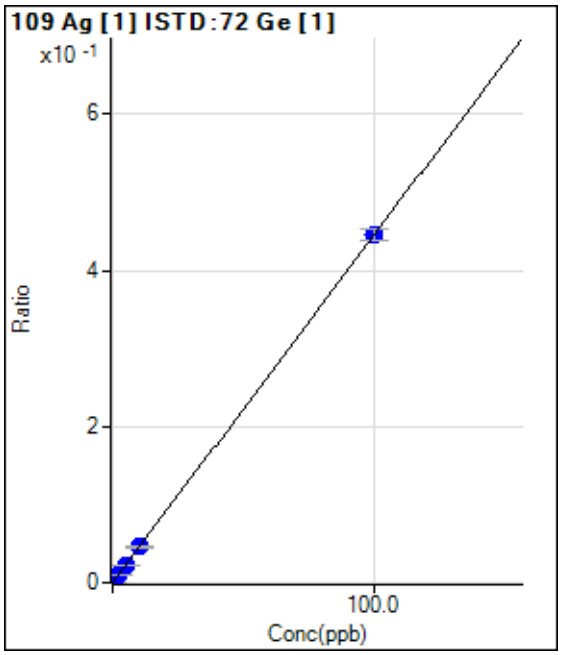
R = 1.0000

DL = 0.01417

BEC = 0.01492

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	135.56	0.0001	P	24.3
2	☐	2.000	2.000	17456.56	0.0090	P	4.3
3	☐	5.000	5.132	43831.58	0.0230	P	2.2
4	☐	10.000	10.244	87243.89	0.0458	P	3.2
5	☐	100.000	99.969	814086.75	0.4464	P	3.0
6	☐			1637035.93	0.9474	A	2.5
7	☐	1.000					

y = 0.0045 * x + 6.9131E-005

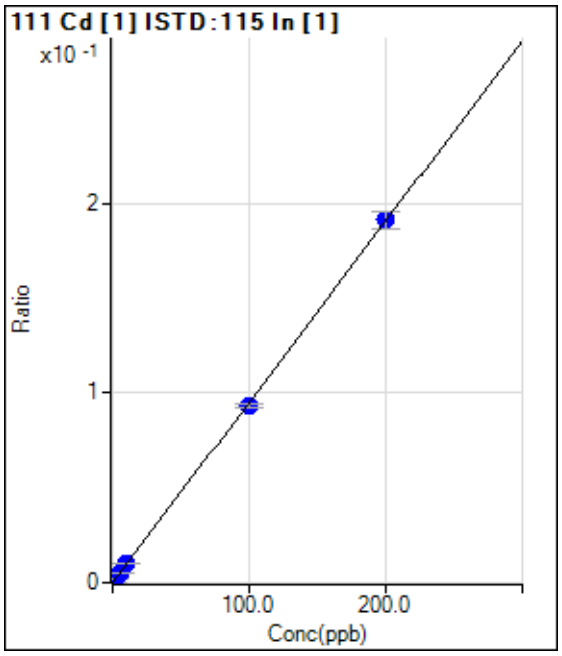
R = 1.0000

DL = 0.0113

BEC = 0.01548

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8.89	0.0000	P	55.8
2	☐	2.000	2.025	3897.32	0.0019	P	3.2
3	☐	5.000	5.153	9844.49	0.0049	P	2.6
4	☐	10.000	10.302	19691.44	0.0098	P	1.5
5	☐	100.000	98.032	183004.86	0.0933	P	1.6
6	☐	200.000	200.965	350324.71	0.1913	P	4.7
7	☐	1.000					

y = 9.5194E-004 * x + 4.3227E-006

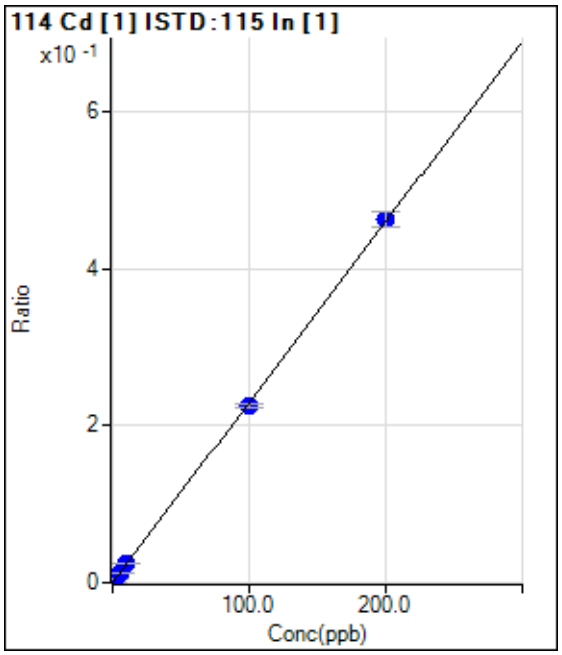
R = 0.9999

DL = 0.007599

BEC = 0.004541

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	51.11	0.0000	P	22.3
2	☐	2.000	2.026	9442.01	0.0047	P	3.5
3	☐	5.000	5.129	23701.29	0.0118	P	0.3
4	☐	10.000	10.264	47407.22	0.0236	P	2.8
5	☐	100.000	97.690	440467.30	0.2246	P	2.0
6	☐	200.000	201.138	846941.34	0.4625	P	4.3
7	☐	1.000					

y = 0.0023 * x + 2.5112E-005

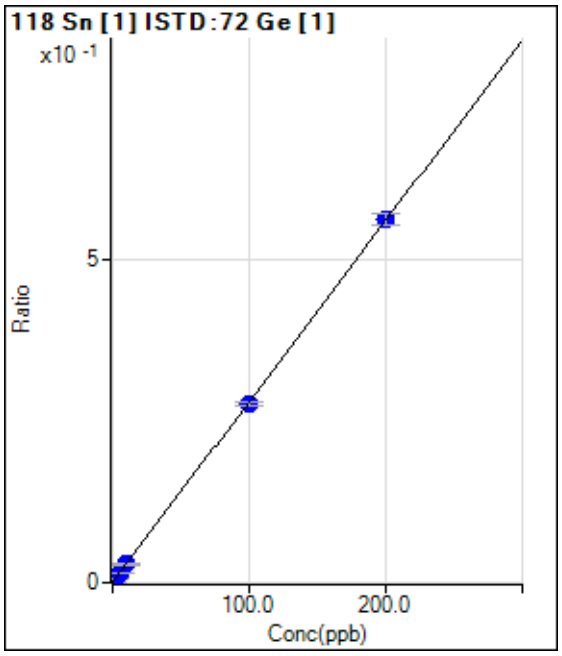
R = 0.9999

DL = 0.007291

BEC = 0.01092

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	975.64	0.0005	P	8.9
2	☐	2.000	1.902	11262.14	0.0058	P	4.5
3	☐	5.000	4.994	27519.90	0.0144	P	1.8
4	☐	10.000	10.017	54167.67	0.0284	P	3.0
5	☐	100.000	98.750	503275.53	0.2759	P	2.2
6	☐	200.000	200.625	967652.19	0.5601	P	3.2
7	☐	1.000					

y = 0.0028 * x + 4.9901E-004

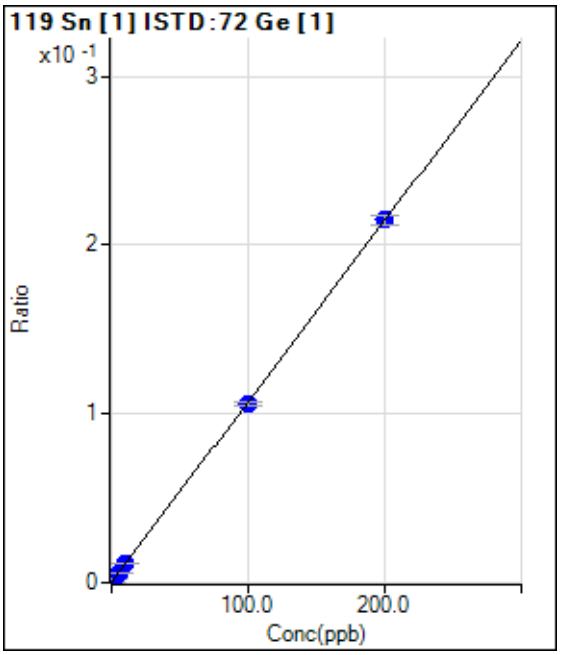
R = 1.0000

DL = 0.04782

BEC = 0.1789

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	352.24	0.0002	P	16.4
2	☐	2.000	1.956	4410.80	0.0023	P	2.0
3	☐	5.000	5.004	10558.30	0.0055	P	1.5
4	☐	10.000	10.242	21219.07	0.0111	P	3.6
5	☐	100.000	98.877	193335.41	0.1060	P	2.6
6	☐	200.000	200.550	371187.51	0.2148	P	2.6
7	☐	1.000					

y = 0.0011 * x + 1.8024E-004

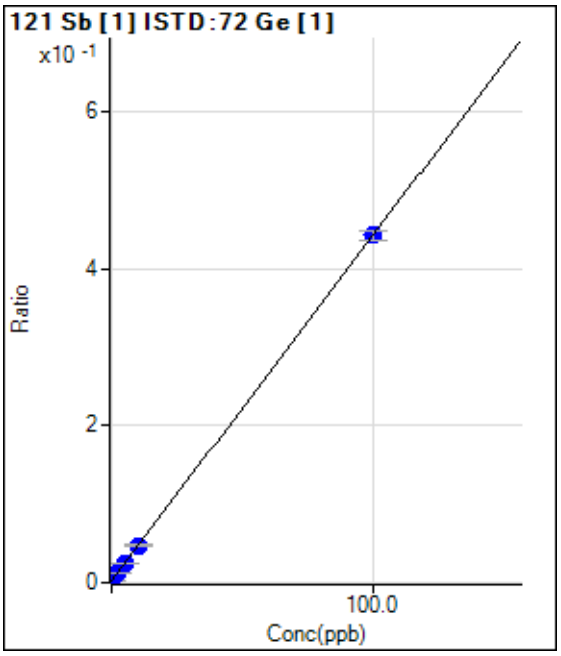
R = 1.0000

DL = 0.08277

BEC = 0.1684

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5180.52	0.0027	P	2.7
2	☐	2.000	2.025	22421.37	0.0116	P	3.6
3	☐	5.000	5.079	47663.00	0.0250	P	1.7
4	☐	10.000	10.188	90389.71	0.0475	P	3.0
5	☐	100.000	99.977	806654.17	0.4423	P	2.9
6	☐			1646795.20	0.9531	A	2.6
7	☐	1.000					

y = 0.0044 * x + 0.0027

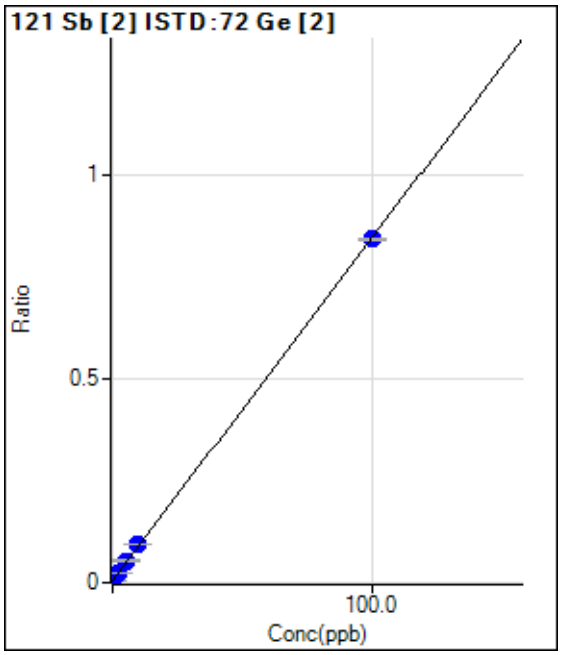
R = 1.0000

DL = 0.04911

BEC = 0.6033

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1117.46	0.0045	P	0.9
2	☐	2.000	2.121	5575.84	0.0223	P	1.3
3	☐	5.000	5.928	11946.69	0.0542	P	16.8
4	☐	10.000	10.456	22735.51	0.0922	P	0.4
5	☐	100.000	99.906	199762.36	0.8430	P	0.4
6	☐			386811.68	1.6709	P	0.4
7	☐	1.000					

y = 0.0084 * x + 0.0045

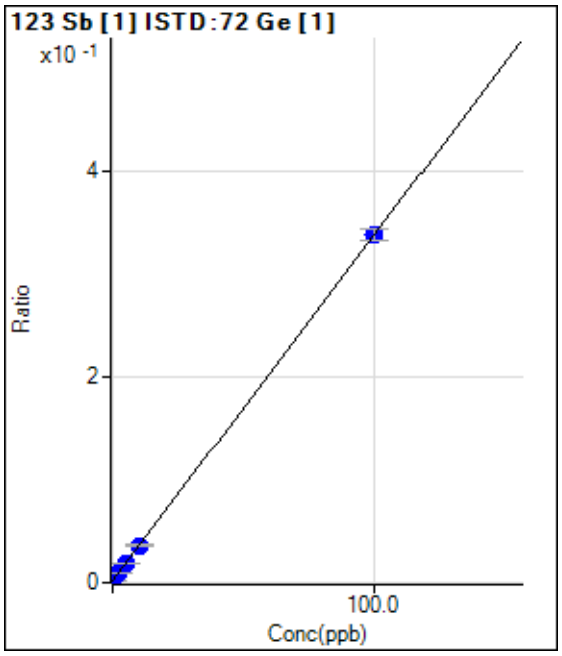
R = 1.0000

DL = 0.01483

BEC = 0.5314

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3949.06	0.0020	P	3.4
2	☐	2.000	2.045	17234.78	0.0089	P	1.8
3	☐	5.000	5.078	36356.23	0.0191	P	1.3
4	☐	10.000	10.176	68885.81	0.0362	P	2.6
5	☐	100.000	99.978	615357.36	0.3375	P	3.4
6	☐			1190468.97	0.6890	P	2.6
7	☐	1.000					

y = 0.0034 * x + 0.0020

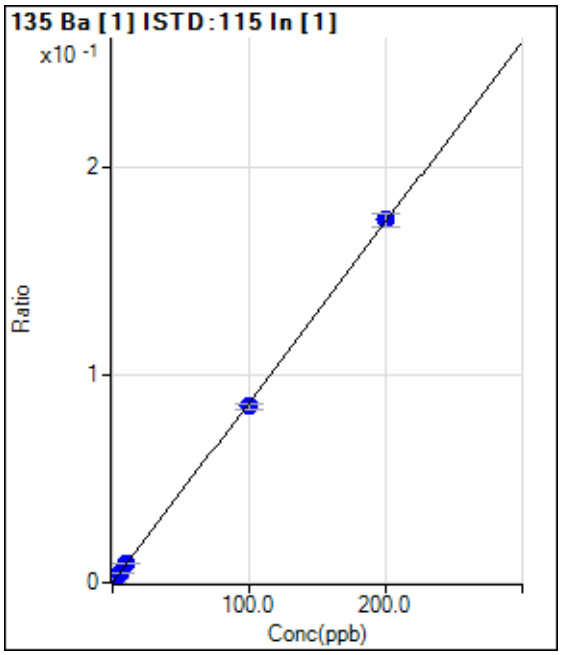
R = 1.0000

DL = 0.0619

BEC = 0.6027

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	183.34	0.0001	P	13.5
2	☐	2.000	2.015	3703.93	0.0018	P	1.4
3	☐	5.000	5.134	9105.22	0.0045	P	4.3
4	☐	10.000	10.288	18077.56	0.0090	P	3.1
5	☐	100.000	97.642	166132.01	0.0847	P	2.6
6	☐	200.000	201.161	319579.06	0.1745	P	3.8
7	☐	1.000					

y = 8.6687E-004 * x + 8.9939E-005

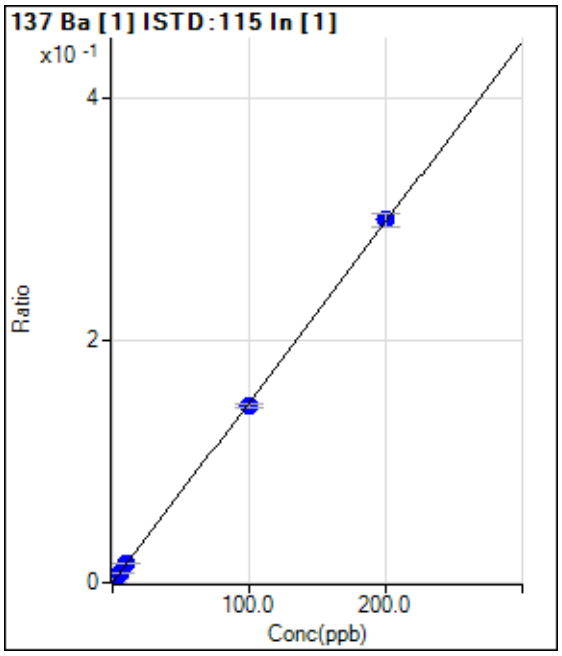
R = 0.9999

DL = 0.04206

BEC = 0.1038

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	300.02	0.0001	P	22.8
2	☐	2.000	2.020	6355.99	0.0032	P	1.6
3	☐	5.000	5.124	15577.07	0.0078	P	2.8
4	☐	10.000	10.268	30948.34	0.0154	P	1.7
5	☐	100.000	97.691	285221.23	0.1455	P	2.2
6	☐	200.000	201.138	548295.74	0.2993	P	3.7
7	☐	1.000					

y = 0.0015 * x + 1.4637E-004

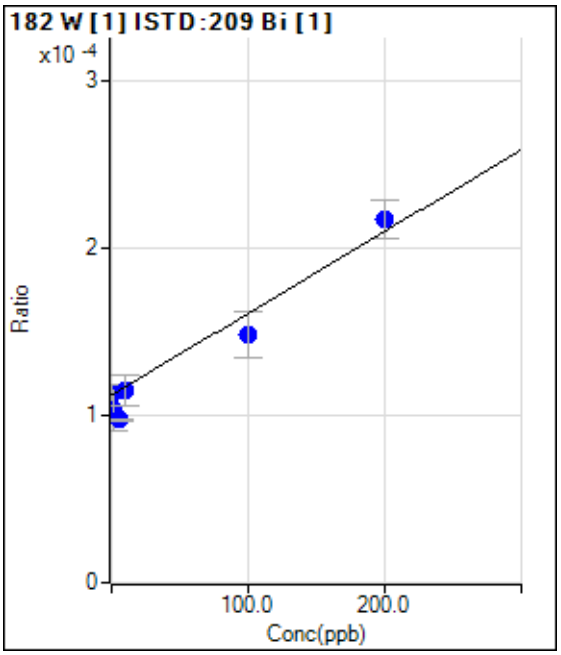
R = 0.9999

DL = 0.06731

BEC = 0.0984

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	218.90	0.0001	P	10.7
2	☐	2.000	-18.988	201.12	0.0001	P	23.5
3	☐	5.000	-30.334	187.79	0.0001	P	1.7
4	☐	10.000	5.581	221.12	0.0001	P	15.8
5	☐	100.000	74.455	274.46	0.0001	P	18.3
6	☐	200.000	214.086	376.69	0.0002	P	10.8
7	☐	1.000					

y = 4.8827E-007 * x + 1.1205E-004

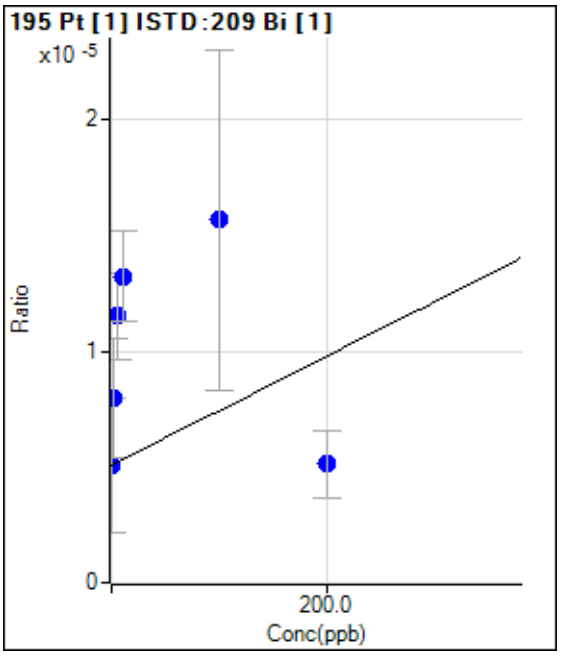
R = 0.9852

DL = 73.41

BEC = 229.5

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.00	0.0000	P	114.
2	☐	2.000	121.987	15.56	0.0000	P	65.4
3	☐	5.000	272.681	22.22	0.0000	P	32.2
4	☐	10.000	344.864	25.56	0.0000	P	29.5
5	☐	100.000	448.123	28.89	0.0000	P	93.9
6	☐	200.000	1.303	8.89	0.0000	P	56.6
7	☐	1.000					

y = 2.3634E-008 * x + 5.0856E-006

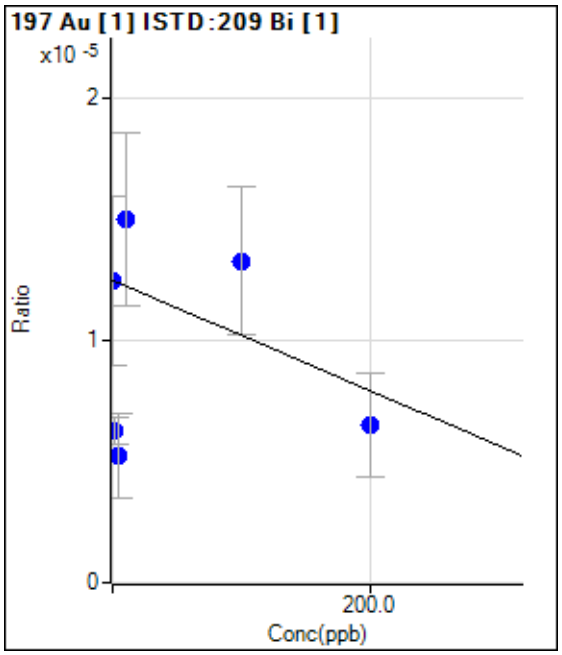
R = -0.1668

DL = 741.4

BEC = 215.2

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	24.44	0.0000	P	56.0
2	☐	2.000	273.457	12.22	0.0000	P	16.6
3	☐	5.000	320.165	10.00	0.0000	P	67.0
4	☐	10.000	-109.428	28.89	0.0000	P	47.8
5	☐	100.000	-35.562	24.45	0.0000	P	45.5
6	☐	200.000	263.159	11.11	0.0000	P	65.7
7	☐	1.000					

y = −2.2717E−008 * x + 1.2470E−005

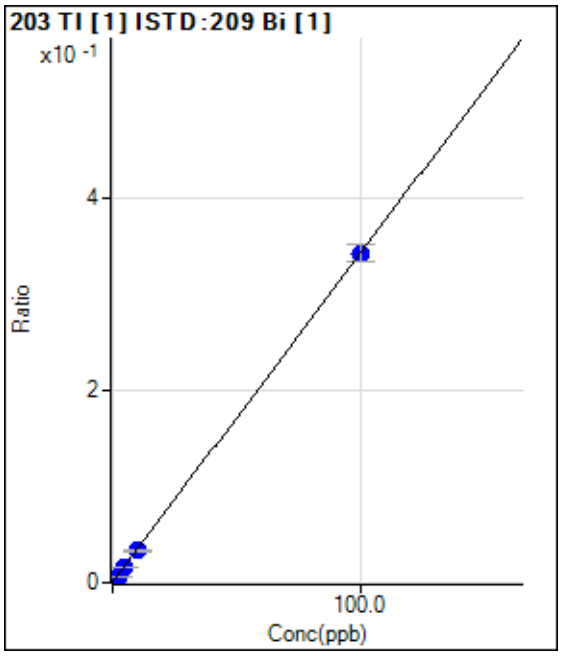
R = −0.1637

DL = −922.3

BEC = −548.9

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1125.61	0.0006	P	9.3
2	☐	2.000	1.773	12963.75	0.0066	P	5.0
3	☐	5.000	4.614	31540.85	0.0163	P	5.7
4	☐	10.000	9.546	63936.92	0.0332	P	6.2
5	☐	100.000	100.069	633068.07	0.3424	P	5.5
6	☐			1237697.31	0.7095	P	3.4
7	☐	1.000					

y = 0.0034 * x + 5.7681E−004

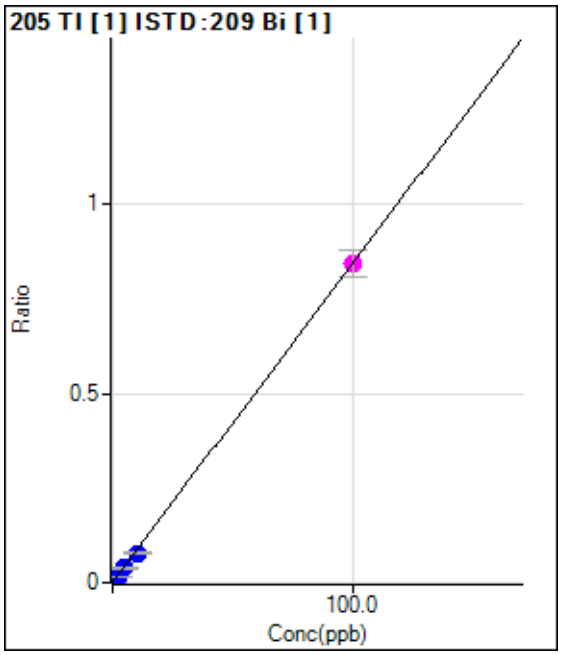
R = 1.0000

DL = 0.04711

BEC = 0.1689

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2723.24	0.0014	P	6.6
2	☐	2.000	1.700	30735.54	0.0157	P	5.4
3	☐	5.000	4.472	75489.16	0.0391	P	5.8
4	☐	10.000	9.153	151394.88	0.0786	P	5.6
5	☐	100.000	100.117	1562927.19	0.8455	M	8.6
6	☐			3120934.30	1.7891	A	3.3
7	☐	1.000					

y = 0.0084 * x + 0.0014

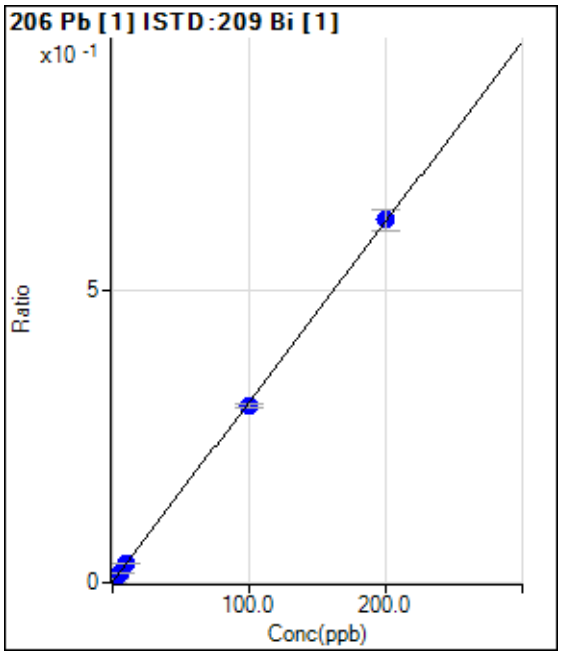
R = 1.0000

DL = 0.03292

BEC = 0.1654

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2584.79	0.0013	P	16.2
2	☐	2.000	1.980	14515.23	0.0074	P	2.6
3	☐	5.000	5.062	32677.00	0.0169	P	0.3
4	☐	10.000	10.349	64006.41	0.0332	P	1.8
5	☐	100.000	97.857	560179.87	0.3028	P	2.6
6	☐	200.000	201.053	1081753.66	0.6208	P	5.8
7	☐	1.000					

y = 0.0031 * x + 0.0013

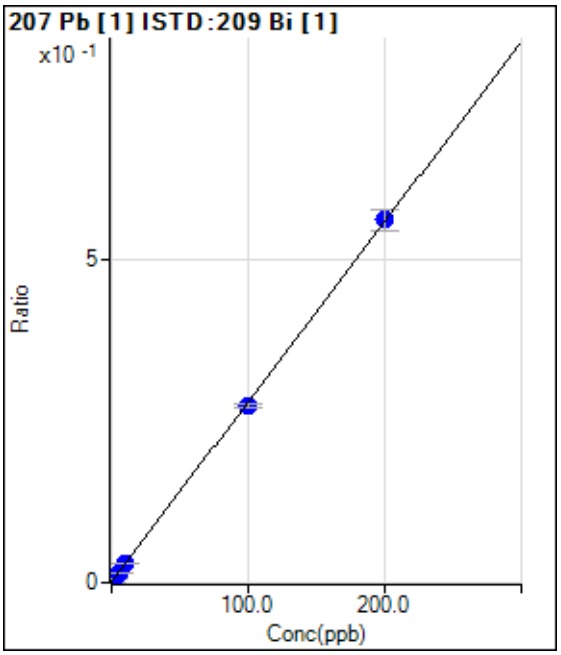
R = 0.9999

DL = 0.209

BEC = 0.429

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2214.72	0.0011	P	11.7
2	☐	2.000	1.964	12895.97	0.0066	P	2.3
3	☐	5.000	4.987	28983.89	0.0150	P	2.6
4	☐	10.000	10.308	57468.39	0.0298	P	2.0
5	☐	100.000	97.755	505294.37	0.2731	P	2.3
6	☐	200.000	201.108	977052.80	0.5607	P	6.0
7	☐	1.000					

y = 0.0028 * x + 0.0011

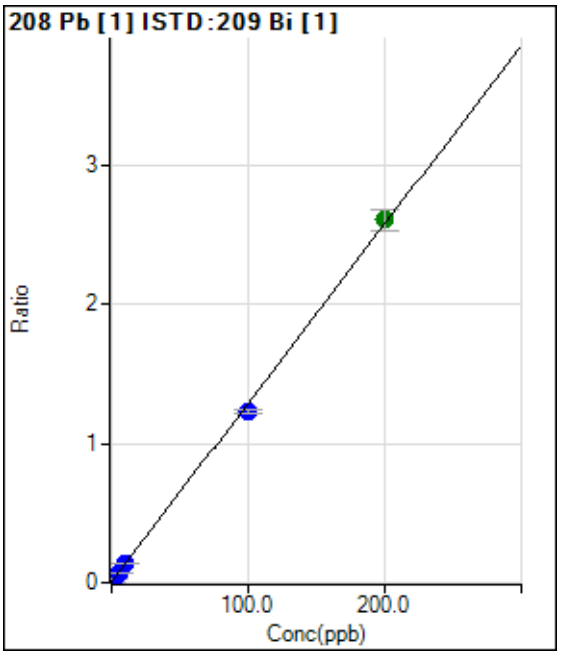
R = 0.9999

DL = 0.143

BEC = 0.4073

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10134.06	0.0052	P	13.4
2	☐	2.000	1.916	58333.37	0.0298	P	0.8
3	☐	5.000	4.876	131179.06	0.0679	P	0.9
4	☐	10.000	10.048	259225.83	0.1345	P	1.4
5	☐	100.000	95.048	2271983.69	1.2282	P	2.6
6	☐	200.000	202.478	4548701.56	2.6105	A	6.1
7	☐	1.000					

y = 0.0129 * x + 0.0052

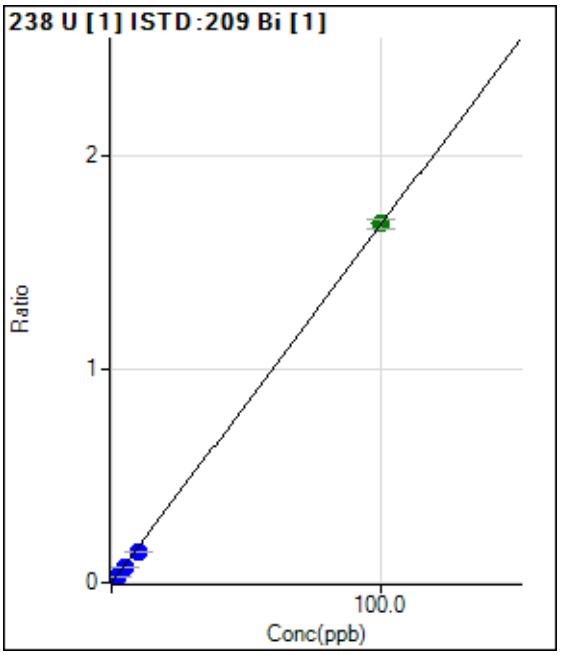
R = 0.9996

DL = 0.1613

BEC = 0.4029

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	173.34	0.0001	P	42.3
2	☐	2.000	1.640	54028.31	0.0276	P	2.9
3	☐	5.000	4.177	135724.70	0.0703	P	2.1
4	☐	10.000	8.464	274352.19	0.1423	P	0.8
5	☐	100.000	100.202	3114893.84	1.6839	A	2.6
6	☐			6075134.98	3.4862	A	5.8
7	☐	1.000					

y = 0.0168 * x + 8.8549E-005

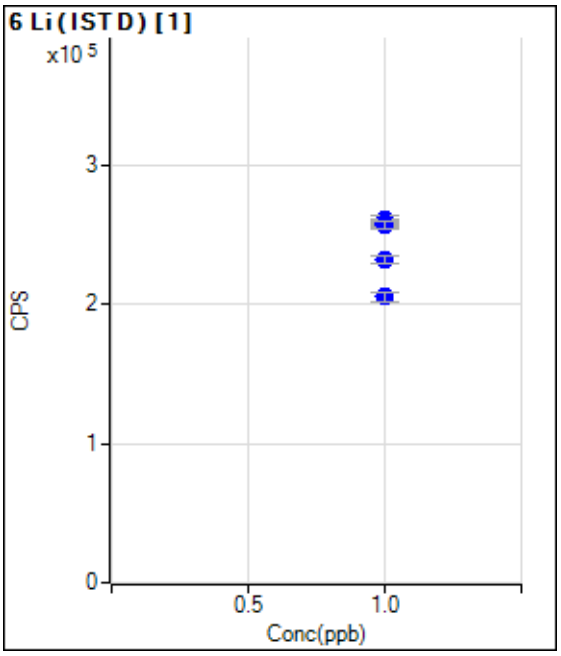
R = 0.9999

DL = 0.006695

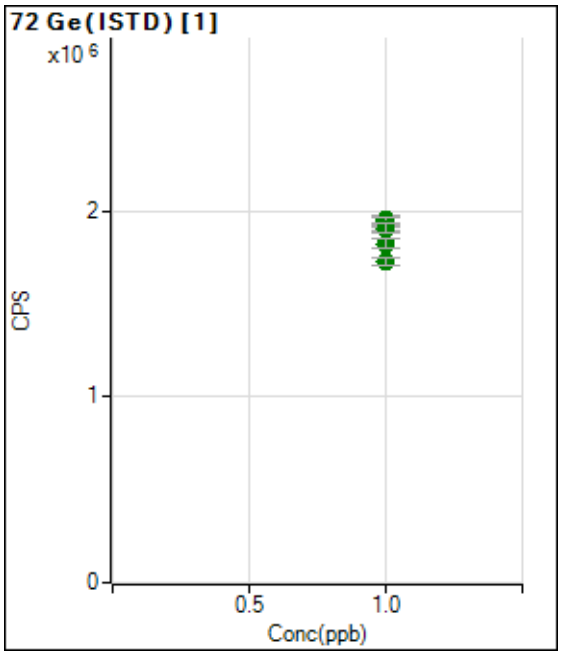
BEC = 0.00527

Weight: None

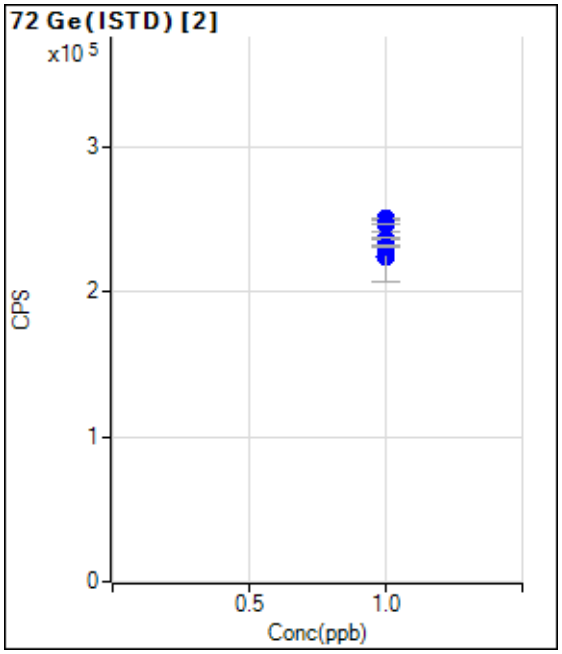
Min Conc: <None>



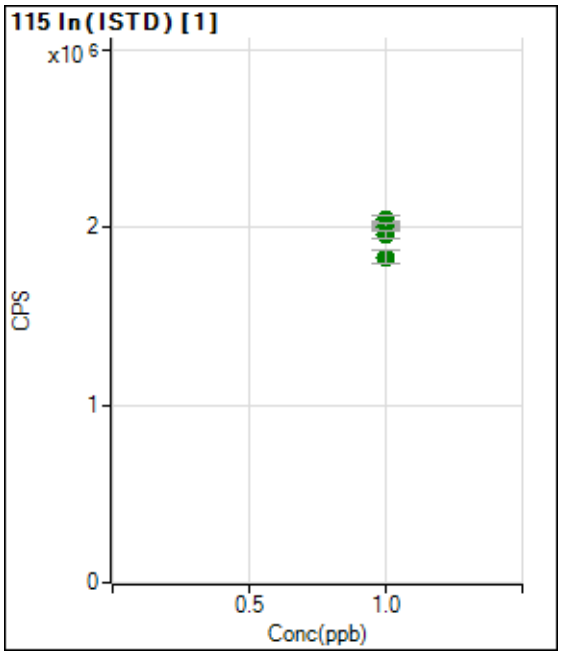
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		260476.71		P	2.0
2	☐	1.000		258641.57		P	1.5
3	☐	1.000		256315.13		P	0.2
4	☐	1.000		256434.25		P	2.0
5	☐	1.000		232244.91		P	2.3
6	☐	1.000		205261.29		P	3.3
7	☐	1.000					



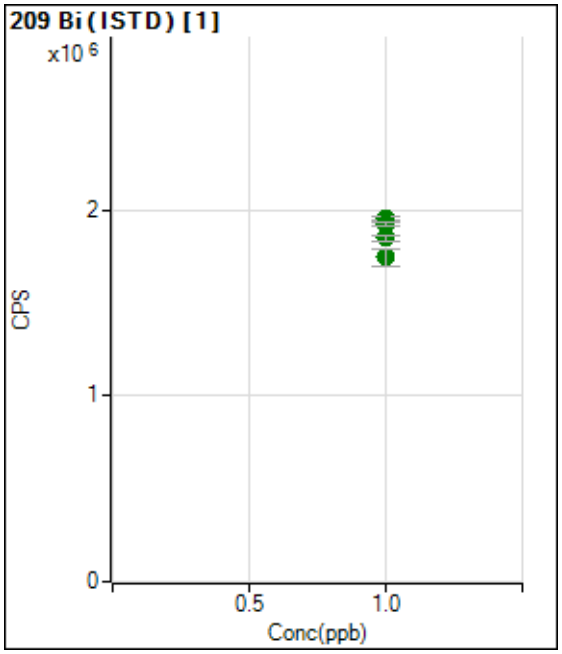
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1952536.68		A	2.9
2	☐	1.000		1940674.48		A	2.2
3	☐	1.000		1907451.80		A	1.4
4	☐	1.000		1905566.73		A	2.7
5	☐	1.000		1824534.47		A	2.7
6	☐	1.000		1728632.08		A	2.8
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		250522.01		P	0.6
2	☐	1.000		250446.50		P	0.5
3	☐	1.000		224115.22		P	15.1
4	☐	1.000		246522.25		P	0.1
5	☐	1.000		236966.64		P	0.3
6	☐	1.000		231498.90		P	0.5
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2043460.22		A	2.7
2	☐	1.000		2016991.25		A	1.7
3	☐	1.000		2005752.58		A	1.4
4	☐	1.000		2007328.33		A	1.4
5	☐	1.000		1961360.01		A	2.0
6	☐	1.000		1833588.12		A	4.2
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1953090.71		A	1.5
2	☐	1.000		1954995.13		A	1.2
3	☐	1.000		1931468.39		A	1.1
4	☐	1.000		1927762.87		A	1.0
5	☐	1.000		1850514.32		A	2.1
6	☐	1.000		1746517.46		A	5.8
7	☐	1.000					

Form 2 - Initial and Continuing Calibration Verification

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS05_293996
Instrument: ICPMS05
Method: SW6020

ICV	Date: 02-May-2017 11:02		Seq: 4075768	ICV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	99.743	100	90-110	

CCV1	Date: 02-May-2017 11:41		Seq: 4075793	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	101.369	101	90-110	

CCV2	Date: 02-May-2017 12:18		Seq: 4075922	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	100.132	100	90-110	

CCV3	Date: 02-May-2017 12:53		Seq: 4076022	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	99.159	99	90-110	

CCV4	Date: 02-May-2017 13:29		Seq: 4076034	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	102.145	102	90-110	

CCV5	Date: 02-May-2017 14:04		Seq: 4076128	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	101.545	102	90-110	

CCV6	Date: 02-May-2017 14:40		Seq: 4076140	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	100.809	101	90-110	

CCV7	Date: 02-May-2017 15:22		Seq: 4076714	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	101.62	102	90-110	

CCV8	Date: 02-May-2017 15:55		Seq: 4076677	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	101.83	102	90-110	

CCV9	Date: 02-May-2017 16:31		Seq: 4076689	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	99.909	100	90-110	

CCV10	Date: 02-May-2017 17:07		Seq: 4076701	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	99.211	99	90-110	

CCV11	Date: 02-May-2017 17:34		Seq: 4076722	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Lead	100	100.093	100	90-110	

Form 3 - BLANKS

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS05_293996
Instrument: ICPMS05
Method: SW6020

ICB	Date: 02-May-2017 11:11		Seq: 4075771	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB1	Date: 02-May-2017 11:45		Seq: 4075794	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB2	Date: 02-May-2017 12:21		Seq: 4075923	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

MBLKT1-115813	Date: 02-May-2017 12:41		Seq: 4076018	MBLK	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	50	6	50	U	

MBLK-115813	Date: 02-May-2017 12:44		Seq: 4076019	MBLK	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB3	Date: 02-May-2017 12:56		Seq: 4076023	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB4	Date: 02-May-2017 13:32		Seq: 4076035	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB5	Date: 02-May-2017 14:07		Seq: 4076129	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB6	Date: 02-May-2017 14:43		Seq: 4076141	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB7	Date: 02-May-2017 15:19		Seq: 4076713	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB8	Date: 02-May-2017 15:58		Seq: 4076678	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB9	Date: 02-May-2017 16:34		Seq: 4076690	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB10	Date: 02-May-2017 17:11		Seq: 4076702	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

CCB11	Date: 02-May-2017 17:37		Seq: 4076723	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Lead	5	0.6	5	U	

Form 4 - ICP Interference Check Sample

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Run ID: ICPMS05_293996
Instrument: ICPMS05
Method: SW6020

ICSA	Date: 02-May-2017 11:18	Seq: 4075779	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Lead		0.224	0	

ICSAB	Date: 02-May-2017 11:21	Seq: 4075780	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Lead	100	93.8	93.8	

ICSA	Date: 02-May-2017 17:46	Seq: 4076726	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Lead		0.089	0	

ICSAB	Date: 02-May-2017 17:49	Seq: 4076727	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Lead	100	93.88	93.9	

Form 5A - Matrix Spike/Matrix Spike Duplicate Recovery

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 02-May-2017 13:17
Date Extracted: 01-May-2017 15:30
Units: ug/L

Matrix Spike: HS17041260-01MS
Client Sample ID:

Analysis Method: SW1311/6020

Analyte	Sample Result	MS Result	Spike Amount	% Rec	MSD Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Antimony	24.29	549.4	500.0	105	561.8	500.0	108	80-120	2.23	20
Lead	89.91	567.6	500.0	95.5	589.5	500.0	99.9	80-120	3.80	20

Form 5B - Post Digest Sample Recovery

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 02-May-2017 13:20
Date Extracted: 01-May-2017 15:30
Units: ug/L

Lab Sample ID: HS17041260-01PDS
Client Sample ID:

Analysis Method: SW1311/6020

Analyte	Sample Result	PDS Result	Spike Amount	% Rec	% Rec Limits
Antimony	24.29	849.8	1000	83	75-125
Lead	89.91	986.5	1000	90	75-125

Form 7 - Laboratory Control Sample

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 02-May-2017 12:47
Date Extracted: 01-May-2017 15:30
Units: ug/L

Lab Sample ID: LCS-115813
Analysis Method: SW1311/6020

Analyte	Spike Amount	LCS Result	% Rec	% Rec Limits
Antimony	50	51.27	103	80-120
Lead	50	48.7	97	80-120

Form 8 - ICP Serial Dilutions

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Date Analyzed: 02-May-2017 13:11
Date Extracted: 01-May-2017 15:30
Units: ug/L

Lab Sample ID: HS17041260-01SD
Client Sample ID:

Analysis Method: SW1311/6020

Analyte	Sample Result	C	SD Result	C	RPD	Q
Antimony	24.29	J	22.34	J	8	
Lead	89.91		133.2	J	48	

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Instrument:ICPMS04

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		ArHe
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
111	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
135	Barium	Indium		Ar
203	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: ARCADIS U.S., Inc. Instrument:ICPMS05
Project: Closed Castner Firing Range
WorkOrder: HS17041053

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		Ar
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

FORM 12 - PREPARATION LOG

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 01-May-2017 15:30 End Date: 01-May-2017 17:30

Batch ID: 115813
Prep Code: 3010A_TCLP
Method: SW3010A
Technician:

SampID	ClientID	Matrix	Init Wt	Init Vol	FinalVol (mL)	PrepFac
HS17041053-11	FTBL-SS-B37-0-12-042017-R	Soil		1	10	10
HS17041053-15	FTBL-SS-B44-0-12-042017-R	Soil		1	10	10
HS17041260-01MS				1	10	10
HS17041260-01MSD				1	10	10
HS17041260-01PDS				1	10	10
HS17041260-01SD				1	10	10
LCS-115813				10	10	1
MBLK-115813				10	10	1
MBLKT1-115813				1	10	10

FORM 13 - ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range
WorkOrder: HS17041053
Start Date: 02-May-2017 End Date: 02-May-2017

Run ID:ICPMS05_293996
Instrument:ICPMS05
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS05_293996_Tune	1	02-May-2017 00:00	ICPMS05_293996_Tune_1	
CAL BLK	1	02-May-2017 10:45	004CALB.d_4075762	PB
2/10/200	1	02-May-2017 10:47	005CALS.d_4075763	PB
5/25/500	1	02-May-2017 10:50	006CALS.d_4075764	PB
10/50/1000	1	02-May-2017 10:53	007CALS.d_4075765	PB
100/500/10K	1	02-May-2017 10:56	008CALS.d_4075766	PB
200/1000/20K	1	02-May-2017 10:59	009CALS.d_4075767	PB
ICV	1	02-May-2017 11:02	010_ICV.d_4075768	PB
LLICV5	1	02-May-2017 11:06	011LICV.d_4075769	PB
LLICV2	1	02-May-2017 11:09	012SMPL.d_4075770	PB
ICB	1	02-May-2017 11:11	013_ICB.d_4075771	PB
ICSA	1	02-May-2017 11:18	015ICSA.d_4075779	PB
ICSAB	1	02-May-2017 11:21	016ICSB.d_4075780	PB
CCV 1	1	02-May-2017 11:41	023_CCV.d_4075793	PB
CCB 1	1	02-May-2017 11:45	024_CCB.d_4075794	PB
CCV 2	1	02-May-2017 12:18	035_CCV.d_4075922	PB
CCB 2	1	02-May-2017 12:21	036_CCB.d_4075923	PB
MBLKT1-115813	1	02-May-2017 12:41	043SMPL.d_4076018	PB
MBLK-115813	1	02-May-2017 12:44	044SMPL.d_4076019	PB
LCS-115813	1	02-May-2017 12:47	045SMPL.d_4076020	PB
FTBL-SS-B37-0-12-042017-R	1	02-May-2017 12:50	046SMPL.d_4076021	PB
CCV 3	1	02-May-2017 12:53	047_CCV.d_4076022	PB
CCB 3	1	02-May-2017 12:56	048_CCB.d_4076023	PB
ZZZZZZSD	5	02-May-2017 13:11	053SMPL.d_4076028	PB
ZZZZZZMS	1	02-May-2017 13:14	054SMPL.d_4076029	PB
ZZZZZZMSD	1	02-May-2017 13:17	055SMPL.d_4076030	PB
ZZZZZZPDS	1	02-May-2017 13:20	056SMPL.d_4076031	PB
CCV 4	1	02-May-2017 13:29	059_CCV.d_4076034	PB
CCB 4	1	02-May-2017 13:32	060_CCB.d_4076035	PB
CCV 5	1	02-May-2017 14:04	071_CCV.d_4076128	PB
CCB 5	1	02-May-2017 14:07	072_CCB.d_4076129	PB
CCV 6	1	02-May-2017 14:40	083_CCV.d_4076140	PB
CCB 6	1	02-May-2017 14:43	084_CCB.d_4076141	PB
FTBL-SS-B44-0-12-042017-R	100	02-May-2017 15:10	093SMPL.d_4076221	PB
CCB 7	1	02-May-2017 15:19	096_CCB.d_4076713	PB
CCV 7	1	02-May-2017 15:22	097_CCV.d_4076714	PB
CCV 8	1	02-May-2017 15:55	108_CCV.d_4076677	PB
CCB 8	1	02-May-2017 15:58	109_CCB.d_4076678	PB
CCV 9	1	02-May-2017 16:31	120_CCV.d_4076689	PB
CCB 9	1	02-May-2017 16:34	121_CCB.d_4076690	PB
CCV 10	1	02-May-2017 17:07	132_CCV.d_4076701	PB
CCB 10	1	02-May-2017 17:11	133_CCB.d_4076702	PB
CCV 11	1	02-May-2017 17:34	141_CCV.d_4076722	PB
CCB 11	1	02-May-2017 17:37	142_CCB.d_4076723	PB
LLCCV5	1	02-May-2017 17:40	143LICV.d_4076724	PB
LLCCV2	1	02-May-2017 17:43	144SMPL.d_4076725	PB
ICSA	1	02-May-2017 17:46	145ICSA.d_4076726	PB
ICSAB	1	02-May-2017 17:49	146ICSB.d_4076727	PB

Tune Report

Batch Folder C:\Agilent\ICPMH\1\DATA\050217A.b
Report Comment
Instrument Name G3281A JP11080910

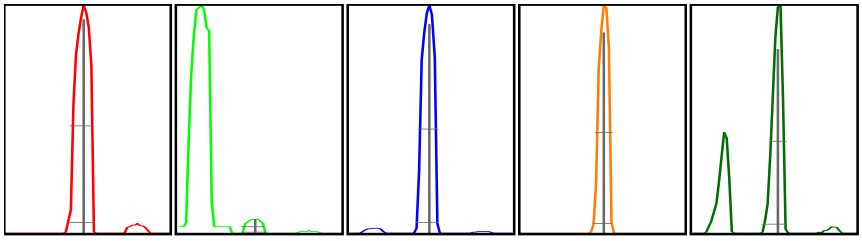
[nogas]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		8853				NaN	-	
24		28861				NaN	-	
59		39251				NaN	-	
115		31922				NaN	-	
208		17643				NaN	-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	1.13	5.00				
24	1.53	5.00				
59	1.27	5.00				
115	0.72	5.00				
208	0.71	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	8979	8930	8780	8739	8837
24	28583	29255	28993	28237	29238
59	40012	38842	39390	38767	39243
115	32047	32020	32087	31934	31524
208	17824	17622	17698	17497	17575

Integration Time [sec] 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	2411.65	8.95	8.9 - 9.1		0.38	0.475	0.750	
24	7897.85	23.95	23.9 - 24.1		0.38	0.445	0.750	
59	12658.20	59.00	58.9 - 59.1		0.30	0.395	0.750	
115	11927.71	115.05	114.9 - 115.1		0.25	0.350	0.750	
208	6211.14	208.10	207.9 - 208.1	[F]	0.25	0.414	0.750	

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 187 **Y Axis** Linear

Tune Parameters
Plasma Paramters

RF Power	1600 W	Carrier Gas	0.35 L/min	S/C Temp	2 ℃
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.50 L/min
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Extract 1	0.0 V	Omega Lens	8.0 V	Deflect	15.6 V
Extract 2	-200.0 V	Cell Entrance	-38 V	Plate Bias	-50 V
Omega Bias	-100 V	Cell Exit	-58 V		

Cell Parameters

OctP Bias	-8.0 V	He Flow	0.0 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	true	3rd Gas Flow	0 %		

[He]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		155				NaN	-	
24		1562				NaN	-	
59		15260				NaN	-	

Tune Report

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	3.94	5.00				
24	2.23	5.00				
59	2.10	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	153	163	147	157	159
24	1558	1553	1530	1622	1549
59	14972	14873	15399	15443	15613

Integration Time [sec] 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	42.00	8.95	50.9 - 51.1	[F]	0.38	0.480	0.750	
24	432.51	23.95	51.9 - 52.1	[F]	0.37	0.444	0.750	
59	5011.24	59.00	58.9 - 59.1		0.30	0.391	0.750	

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 111.2 **Y Axis** Linear

Tune Parameters

Plasma Paramters

RF Power	1600 W	Carrier Gas	0.35 L/min	S/C Temp	2 ℃
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.50 L/min
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Extract 1	0.0 V	Omega Lens	8.0 V	Deflect	2.0 V
Extract 2	-200.0 V	Cell Entrance	-32 V	Plate Bias	-60 V
Omega Bias	-100 V	Cell Exit	-70 V		

Cell Parameters

OctP Bias	-18.0 V	He Flow	4.5 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	true	3rd Gas Flow	0 %		

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	004CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T10:45:01-05:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	17	549.91
Na	23	1	nogas	1814357	0.00
Mg	24	1	nogas	7004	0.05
Al	27	1	nogas	54916	0.00
K	39	1	nogas	3569598	0.00
Ti	47	1	nogas	183	27.00
V	51	1	nogas	104869	0.00
Cr	52	1	nogas	14306	0.02
Mn	55	1	nogas	5274	0.11
Co	59	1	nogas	350	3.27
Ni	60	1	nogas	700	2.35
Cu	63	1	nogas	10477	0.05
Zn	66	1	nogas	493	0.63
As	75	1	nogas	26300	0.01
Sr	88	1	nogas	707	1.48
Ag	107	1	nogas	90	42.77
Cd	111	1	nogas	3	5196.15
Sb	121	1	nogas	2040	0.27
Tl	205	1	nogas	153	16.10
Pb	208	1	nogas	623	0.30
[Pb]	206	1	nogas	150	8.89
[Pb]	207	1	nogas	150	11.76
Na	23	2	He	152822	0.00
Mg	24	2	He	563	3.99
Al	27	2	He	847	2.54
K	39	2	He	66439	0.00
Ca	43	2	He	17	549.91
Ca	44	2	He	1820	0.21
V	51	2	He	653	1.39
Cr	52	2	He	3354	0.23
Mn	55	2	He	630	1.76
Fe	56	2	He	7485	0.06
Co	59	2	He	110	16.53
Ni	60	2	He	390	0.66
Cu	63	2	He	3317	0.24
Zn	66	2	He	83	83.14
As	75	2	He	68	50.97
Se	78	2	He	19	181.65
B	11	1	nogas	8996	0.03
Si	28	1	nogas	564283	0.00
Ca	43	1	nogas	700	4.64
Ca	44	1	nogas	533256	0.00

Calibration Blank Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	455923	0.00
Se	77	1	nogas	8566	0.01
Se	82	1	nogas	353	4.11
Mo	95	1	nogas	280	9.96
Sn	118	1	nogas	653	0.68
Ba	137	1	nogas	127	9.52
Sb	121	2	He	400	1.65
Li	7	1	nogas	39289	0.00
P	31	1	nogas	58238	0.00
La	139	1	nogas	123	33.74

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	6	1	nogas	409846	2.51
Ge	72	1	nogas	1928234	1.05
In	115	1	nogas	2023507	0.75
Bi	209	1	nogas	1855077	0.50
Ge	72	2	He	314233	2.08

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	005CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T10:47:59-05:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	5741	0.06
Na	23	1	nogas	4223001	0.00
Mg	24	1	nogas	1736357	0.00
Al	27	1	nogas	60971	0.00
K	39	1	nogas	5469829	0.00
Ti	47	1	nogas	2377	0.35
V	51	1	nogas	139395	0.00
Cr	52	1	nogas	42019	0.00
Mn	55	1	nogas	38522	0.01
Co	59	1	nogas	31899	0.01
Ni	60	1	nogas	7555	0.05
Cu	63	1	nogas	26770	0.02
Zn	66	1	nogas	5661	0.07
As	75	1	nogas	31094	0.01
Sr	88	1	nogas	35306	0.01
Ag	107	1	nogas	19451	0.02
Cd	111	1	nogas	4234	0.32
Sb	121	1	nogas	19825	0.01
Tl	205	1	nogas	30800	0.00
Pb	208	1	nogas	47055	0.00
[Pb]	206	1	nogas	11318	0.03
[Pb]	207	1	nogas	10507	0.03
Na	23	2	He	276493	0.00
Mg	24	2	He	68055	0.00
Al	27	2	He	880	2.61
K	39	2	He	118399	0.00
Ca	43	2	He	170	31.14
Ca	44	2	He	4487	0.08
V	51	2	He	5875	0.06
Cr	52	2	He	10343	0.04
Mn	55	2	He	4654	0.08
Fe	56	2	He	598692	0.00
Co	59	2	He	9953	0.02
Ni	60	2	He	2904	0.11
Cu	63	2	He	9987	0.07
Zn	66	2	He	1417	0.34
As	75	2	He	940	0.17
Se	78	2	He	102	9.47
B	11	1	nogas	23859	0.01
Si	28	1	nogas	1069128	0.00

Ca	43	1	nogas	4447	0.08
Ca	44	1	nogas	570454	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	3466423	0.00
Se	77	1	nogas	8959	0.09
Se	82	1	nogas	643	1.57
Mo	95	1	nogas	7945	0.06
Sn	118	1	nogas	11428	0.03
Ba	137	1	nogas	5054	0.05
Sb	121	2	He	3654	0.09
P	31	1	nogas	63699	0.00
La	139	1	nogas	47	140.28

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	402546	3.97	409846	98.22	70	125	
Ge	72	1	nogas	1940875	1.20	1928234	100.66	70	125	
In	115	1	nogas	1981883	2.13	2023507	97.94	70	125	
Bi	209	1	nogas	1851730	2.04	1855077	99.82	70	125	
Ge	72	2	He	321387	0.63	314233	102.28	70	125	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	006CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T10:50:56-05:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	14142	0.02
Na	23	1	nogas	8014441	0.00
Mg	24	1	nogas	4258112	0.00
Al	27	1	nogas	92551	0.00
K	39	1	nogas	8275296	0.00
Ti	47	1	nogas	5354	0.25
V	51	1	nogas	194990	0.00
Cr	52	1	nogas	84197	0.00
Mn	55	1	nogas	89407	0.00
Co	59	1	nogas	77276	0.00
Ni	60	1	nogas	18423	0.02
Cu	63	1	nogas	50692	0.01
Zn	66	1	nogas	13616	0.01
As	75	1	nogas	40640	0.01
Sr	88	1	nogas	84278	0.00
Ag	107	1	nogas	51383	0.00
Cd	111	1	nogas	10717	0.03
Sb	121	1	nogas	45661	0.00
Tl	205	1	nogas	79560	0.00
Pb	208	1	nogas	117416	0.00
[Pb]	206	1	nogas	28907	0.01
[Pb]	207	1	nogas	26699	0.00
Na	23	2	He	459440	0.00
Mg	24	2	He	169100	0.00
Al	27	2	He	1277	0.37
K	39	2	He	199334	0.00
Ca	43	2	He	500	0.69
Ca	44	2	He	9009	0.03
V	51	2	He	13973	0.01
Cr	52	2	He	20275	0.03
Mn	55	2	He	10240	0.01
Fe	56	2	He	1471115	0.00
Co	59	2	He	24194	0.01
Ni	60	2	He	6745	0.03
Cu	63	2	He	19728	0.01
Zn	66	2	He	3604	0.11
As	75	2	He	2425	0.20
Se	78	2	He	176	3.57
B	11	1	nogas	48687	0.01
Si	28	1	nogas	1815685	0.00

Ca	43	1	nogas	10320	0.10
Ca	44	1	nogas	642349	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	8039689	0.00
Se	77	1	nogas	9550	0.01
Se	82	1	nogas	947	1.48
Mo	95	1	nogas	19064	0.02
Sn	118	1	nogas	27640	0.01
Ba	137	1	nogas	13049	0.01
Sb	121	2	He	8422	0.04
P	31	1	nogas	73739	0.00
La	139	1	nogas	53	81.19

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	398420	1.67	409846	97.21	70	125	
Ge	72	1	nogas	1935470	2.05	1928234	100.38	70	125	
In	115	1	nogas	2005546	2.09	2023507	99.11	70	125	
Bi	209	1	nogas	1840934	2.86	1855077	99.24	70	125	
Ge	72	2	He	315646	1.51	314233	100.45	70	125	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	007CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T10:53:52-05:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	28402	0.01
Na	23	1	nogas	14069550	0.00
Mg	24	1	nogas	8496182	0.00
Al	27	1	nogas	128805	0.00
K	39	1	nogas	13281761	0.00
Ti	47	1	nogas	11190	0.01
V	51	1	nogas	293236	0.00
Cr	52	1	nogas	155469	0.00
Mn	55	1	nogas	176283	0.00
Co	59	1	nogas	158688	0.00
Ni	60	1	nogas	36531	0.00
Cu	63	1	nogas	94433	0.00
Zn	66	1	nogas	26911	0.01
As	75	1	nogas	58626	0.00
Sr	88	1	nogas	172058	0.00
Ag	107	1	nogas	102772	0.00
Cd	111	1	nogas	21274	0.01
Sb	121	1	nogas	87606	0.00
Tl	205	1	nogas	163934	0.00
Pb	208	1	nogas	238320	0.00
[Pb]	206	1	nogas	58069	0.00
[Pb]	207	1	nogas	53567	0.00
Na	23	2	He	776808	0.00
Mg	24	2	He	345827	0.00
Al	27	2	He	2087	0.25
K	39	2	He	332569	0.00
Ca	43	2	He	820	1.43
Ca	44	2	He	15787	0.02
V	51	2	He	27186	0.00
Cr	52	2	He	37763	0.00
Mn	55	2	He	19961	0.02
Fe	56	2	He	2944496	0.00
Co	59	2	He	48105	0.00
Ni	60	2	He	12905	0.02
Cu	63	2	He	38218	0.00
Zn	66	2	He	7178	0.04
As	75	2	He	5005	0.02
Se	78	2	He	337	1.01
B	11	1	nogas	90900	0.00
Si	28	1	nogas	2976852	0.00

Ca	43	1	nogas	20399	0.00
Ca	44	1	nogas	790041	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	15861565	0.00
Se	77	1	nogas	11531	0.04
Se	82	1	nogas	1693	0.85
Mo	95	1	nogas	37487	0.01
Sn	118	1	nogas	54163	0.00
Ba	137	1	nogas	26067	0.00
Sb	121	2	He	17099	0.01
P	31	1	nogas	90859	0.00
La	139	1	nogas	63	127.93

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	395516	0.99	409846	96.50	70	125	
Ge	72	1	nogas	1907232	0.58	1928234	98.91	70	125	
In	115	1	nogas	1980742	1.16	2023507	97.89	70	125	
Bi	209	1	nogas	1835771	1.50	1855077	98.96	70	125	
Ge	72	2	He	314309	0.85	314233	100.02	70	125	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	008CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T10:56:47-05:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	260930	0.00
Na	23	1	nogas	115736678	0.00
Mg	24	1	nogas	77671068	0.00
Al	27	1	nogas	934165	0.00
K	39	1	nogas	94241508	0.00
Ti	47	1	nogas	98660	0.00
V	51	1	nogas	1578226	0.00
Cr	52	1	nogas	1304410	0.00
Mn	55	1	nogas	1602004	0.00
Co	59	1	nogas	1421686	0.00
Ni	60	1	nogas	323059	0.00
Cu	63	1	nogas	810347	0.00
Zn	66	1	nogas	247686	0.00
As	75	1	nogas	295019	0.00
Sr	88	1	nogas	1595279	0.00
Ag	107	1	nogas	964446	0.00
Cd	111	1	nogas	198865	0.00
Sb	121	1	nogas	818748	0.00
Tl	205	1	nogas	1565069	0.00
Pb	208	1	nogas	2190965	0.00
[Pb]	206	1	nogas	534365	0.00
[Pb]	207	1	nogas	491366	0.00
Na	23	2	He	5810858	0.00
Mg	24	2	He	3040539	0.00
Al	27	2	He	13509	0.01
K	39	2	He	2520185	0.00
Ca	43	2	He	7985	0.07
Ca	44	2	He	133679	0.00
V	51	2	He	249437	0.00
Cr	52	2	He	318509	0.00
Mn	55	2	He	187423	0.00
Fe	56	2	He	26908120	0.00
Co	59	2	He	452797	0.00
Ni	60	2	He	122619	0.00
Cu	63	2	He	335887	0.00
Zn	66	2	He	64080	0.00
As	75	2	He	45926	0.00
Se	78	2	He	2977	0.04
B	11	1	nogas	785600	0.00
Si	28	1	nogas	21553065	0.00

Ca	43	1	nogas	188337	0.00
Ca	44	1	nogas	3437176	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	141740749	0.00
Se	77	1	nogas	22548	0.01
Se	82	1	nogas	13492	0.01
Mo	95	1	nogas	355081	0.00
Sn	118	1	nogas	518330	0.00
Ba	137	1	nogas	245744	0.00
Sb	121	2	He	157914	0.00
P	31	1	nogas	374897	0.00
La	139	1	nogas	143	55.35

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	367657	0.83	409846	89.71	70	125	
Ge	72	1	nogas	1910189	1.01	1928234	99.06	70	125	
In	115	1	nogas	1968009	1.20	2023507	97.26	70	125	
Bi	209	1	nogas	1810619	1.75	1855077	97.60	70	125	
Ge	72	2	He	308806	1.83	314233	98.27	70	125	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	009CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T10:59:53-05:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	496976	0.00
Na	23	1	nogas	224607430	0.00
Mg	24	1	nogas	152908191	0.00
Al	27	1	nogas	1183963	0.00
K	39	1	nogas	180697387	0.00
Ti	47	1	nogas	190116	0.00
V	51	1	nogas	2957387	0.00
Cr	52	1	nogas	2514047	0.00
Mn	55	1	nogas	3096131	0.00
Co	59	1	nogas	2748668	0.00
Ni	60	1	nogas	629364	0.00
Cu	63	1	nogas	1571327	0.00
Zn	66	1	nogas	484600	0.00
As	75	1	nogas	553859	0.00
Sr	88	1	nogas	3131278	0.00
Ag	107	1	nogas	1823639	0.00
Cd	111	1	nogas	382282	0.00
Sb	121	1	nogas	1624538	0.00
Tl	205	1	nogas	2991991	0.00
Pb	208	1	nogas	4303038	0.00
[Pb]	206	1	nogas	1042332	0.00
[Pb]	207	1	nogas	970481	0.00
Na	23	2	He	10902337	0.00
Mg	24	2	He	5735264	0.00
Al	27	2	He	26022	0.00
K	39	2	He	4822380	0.00
Ca	43	2	He	15450	0.01
Ca	44	2	He	265374	0.00
V	51	2	He	490007	0.00
Cr	52	2	He	617809	0.00
Mn	55	2	He	367435	0.00
Fe	56	2	He	53198724	0.00
Co	59	2	He	888962	0.00
Ni	60	2	He	239524	0.00
Cu	63	2	He	639196	0.00
Zn	66	2	He	123593	0.00
As	75	2	He	90647	0.00
Se	78	2	He	5787	0.05
B	11	1	nogas	1566537	0.00
Si	28	1	nogas	39245060	0.00

Ca	43	1	nogas	372854	0.00
Ca	44	1	nogas	6323842	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	280145431	0.00
Se	77	1	nogas	34691	0.00
Se	82	1	nogas	26070	0.02
Mo	95	1	nogas	700142	0.00
Sn	118	1	nogas	1021866	0.00
Ba	137	1	nogas	488809	0.00
Sb	121	2	He	309510	0.00
P	31	1	nogas	677411	0.00
La	139	1	nogas	293	5.24

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	338504	1.93	409846	82.59	70	125	
Ge	72	1	nogas	1894438	1.45	1928234	98.25	70	125	
In	115	1	nogas	1915571	0.89	2023507	94.67	70	125	
Bi	209	1	nogas	1780994	1.85	1855077	96.01	70	125	
Ge	72	2	He	307162	1.81	314233	97.75	70	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	010_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T11:02:59-05:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	100.775	1.322	256702	0.34	100	100.8	90	110	
Na	23	1	nogas	9585.026	0.838	110408032	1.78	10000	95.9	90	110	
Mg	24	1	nogas	9490.167	1.716	73711268	1.28	10000	94.9	90	110	
Al	27	1	nogas	136.613	2.744	921520	0.85	100	136.6	90	110	ICV Main CR1 Failed
K	39	1	nogas	9718.689	1.845	91004321	1.11	10000	97.2	90	110	
Ti	47	1	nogas	100.797	3.113	97687	1.75	100	100.8	90	110	
V	51	1	nogas	102.009	2.647	1586887	2.35	100	102.0	90	110	
Cr	52	1	nogas	104.097	2.439	1338153	0.44	100	104.1	90	110	
Mn	55	1	nogas	103.176	1.206	1628043	1.08	100	103.2	90	110	
Co	59	1	nogas	105.389	4.440	1474004	2.50	100	105.4	90	110	
Ni	60	1	nogas	105.027	4.744	336760	3.00	100	105.0	90	110	
Cu	63	1	nogas	102.130	2.898	820087	1.09	100	102.1	90	110	
Zn	66	1	nogas	100.708	1.630	248335	0.64	100	100.7	90	110	
As	75	1	nogas	98.784	1.452	291537	1.14	100	98.8	90	110	
Sr	88	1	nogas	101.224	3.586	1608125	1.87	100	101.2	90	110	
Ag	107	1	nogas	103.744	0.051	967742	1.99	100	103.7	90	110	
Cd	111	1	nogas	100.175	1.148	203940	1.79	100	100.2	90	110	
Sb	121	1	nogas	102.413	2.476	842961	0.45	100	102.4	90	110	
Tl	205	1	nogas	103.722	2.558	1656958	0.58	100	103.7	90	110	
Pb	208	1	nogas	99.743	1.952	2279628	0.91	100	99.7	90	110	
U	238	1	nogas	102.411	0.400	2414049	1.74	100	102.4	90	110	
[Pb]	206	1	nogas	103.142	2.479	571722	0.96	100	103.1	90	110	
[Pb]	207	1	nogas	95.613	2.045	492265	0.44	100	95.6	90	110	
Na	23	2	He	9765.141	4.059	5612570	2.85	10000	97.7	90	110	
Mg	24	2	He	9787.291	2.284	2923270	1.74	10000	97.9	90	110	
Al	27	2	He	102.548	2.107	14112	2.54	100	102.5	90	110	
K	39	2	He	9793.062	2.292	2410711	2.23	10000	97.9	90	110	
Ca	43	2	He	9237.701	6.839	7402	7.61	10000	92.4	90	110	
Ca	44	2	He	9270.758	2.325	127547	1.71	10000	92.7	90	110	
V	51	2	He	100.103	1.163	253782	0.17	100	100.1	90	110	
Cr	52	2	He	101.676	1.913	326538	2.19	100	101.7	90	110	
Mn	55	2	He	99.282	0.610	188694	1.47	100	99.3	90	110	
Fe	56	2	He	9471.650	1.175	25990650	1.82	10000	94.7	90	110	
Co	59	2	He	100.189	0.967	460016	0.50	100	100.2	90	110	
Ni	60	2	He	100.047	0.747	124148	0.55	100	100.0	90	110	
Cu	63	2	He	101.534	2.245	339221	1.68	100	101.5	90	110	
Zn	66	2	He	101.835	2.640	65432	2.99	100	101.8	90	110	
As	75	2	He	100.274	1.280	46903	1.39	100	100.3	90	110	
Se	78	2	He	99.696	3.551	3000	2.82	100	99.7	90	110	
B	11	1	nogas	510.575	2.346	815509	1.36	500	102.1	90	110	
Si	28	1	nogas	102.987	7.486	971354	3.41	5000	2.1	90	110	ICV Main CR1 Failed
Ca	43	1	nogas	9419.890	5.387	178146	3.53	10000	94.2	90	110	
Ca	44	1	nogas	9547.124	4.394	3329555	2.29	10000	95.5	90	110	
Fe	56	1	nogas	9563.101	2.702	135919599	0.67	10000	95.6	90	110	
Se	77	1	nogas	89.262	5.084	20572	1.68	100	89.3	90	110	ICV Main CR1 Failed
Se	82	1	nogas	102.423	2.704	13719	0.71	100	102.4	90	110	
Mo	95	1	nogas	100.755	2.779	357624	0.81	100	100.8	90	110	
Sn	118	1	nogas	94.477	1.899	511767	1.47	100	94.5	90	110	
Ba	137	1	nogas	100.148	1.006	258975	0.72	100	100.1	90	110	
Sb	121	2	He	101.867	1.304	162987	0.43	100	101.9	90	110	
Li	7	1	nogas	96.302	0.717	584392	0.88	100	96.3	90	110	
P	31	1	nogas	501.062	3.363	373501	1.03	500	100.2	90	110	
La	139	1	nogas	290.008	44.129	350	30.24	100	290.0	90	110	ICV Main CR1 Failed
Au	197	1	nogas	99.264	145.513	10	100.00	100	99.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	349286	1.50	409846	85.22	70	125	
Ge	72	1	nogas	1918441	2.01	1928234	99.49	70	125	
In	115	1	nogas	2034872	1.72	2023507	100.56	70	125	
Bi	209	1	nogas	1891034	2.10	1855077	101.94	70	125	

Initial Calibration Verification (ICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	316282	1.13	314233	100.65	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICV5
Data File Name	011LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T11:06:05-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	4.765	3.822	13128	4.11	5	95.3	70	130	
Na	23	1	nogas	518.934	1.235	7661084	1.39	500	103.8	70	130	
Mg	24	1	nogas	533.393	1.869	4153363	2.19	500	106.7	70	130	
Al	27	1	nogas	5.133	1.865	86993	1.73	5	102.7	70	130	
K	39	1	nogas	525.063	4.110	8252887	1.22	500	105.0	70	130	
Ti	47	1	nogas	4.894	2.781	4904	2.47	5	97.9	70	130	
V	51	1	nogas	6.715	4.778	201398	3.01	5	134.3	70	130	LLICV Main CR1 Failed
Cr	52	1	nogas	5.388	0.633	82546	0.74	5	107.8	70	130	
Mn	55	1	nogas	5.304	2.187	88429	0.99	5	106.1	70	130	
Co	59	1	nogas	5.533	2.104	77529	1.05	5	110.7	70	130	
Ni	60	1	nogas	4.880	4.309	18166	3.71	5	97.6	70	130	
Cu	63	1	nogas	5.297	2.015	52289	2.57	5	105.9	70	130	
Zn	66	1	nogas	5.009	1.007	13739	2.04	5	100.2	70	130	
As	75	1	nogas	7.351	0.559	47322	1.21	5	147.0	70	130	LLICV Main CR1 Failed
Sr	88	1	nogas	5.305	3.307	84720	2.34	5	106.1	70	130	
Ag	107	1	nogas	5.551	2.733	51714	2.43	5	111.0	70	130	
Cd	111	1	nogas	5.017	1.764	10143	2.29	5	100.3	70	130	
Sb	121	1	nogas	5.254	1.409	45060	1.74	5	105.1	70	130	
Tl	205	1	nogas	5.356	2.995	85145	4.89	5	107.1	70	130	
Pb	208	1	nogas	5.203	3.558	118624	2.21	5	104.1	70	130	
U	238	1	nogas	5.256	2.019	123098	0.62	5	105.1	70	130	
[Pb]	206	1	nogas	5.279	3.751	29204	4.09	5	105.6	70	130	
[Pb]	207	1	nogas	5.091	5.424	26159	3.97	5	101.8	70	130	
Na	23	2	He	526.251	0.364	443043	0.72	500	105.3	70	130	
Mg	24	2	He	554.905	0.912	164400	0.42	500	111.0	70	130	
Al	27	2	He	5.026	9.321	1367	4.03	5	100.5	70	130	
K	39	2	He	554.859	0.990	199261	0.66	500	111.0	70	130	
Ca	43	2	He	587.013	15.578	480	14.58	500	117.4	70	130	
Ca	44	2	He	475.256	7.538	8185	6.16	500	95.1	70	130	
V	51	2	He	4.869	2.471	13593	2.68	5	97.4	70	130	
Cr	52	2	He	5.132	3.394	19464	2.64	5	102.6	70	130	
Mn	55	2	He	4.871	9.030	9746	8.04	5	97.4	70	130	
Fe	56	2	He	536.595	2.728	1462634	2.41	500	107.3	70	130	
Co	59	2	He	5.130	1.580	23396	2.14	5	102.6	70	130	
Ni	60	2	He	5.104	3.808	6918	2.84	5	102.1	70	130	
Cu	63	2	He	4.667	4.691	20242	3.72	5	93.3	70	130	
Zn	66	2	He	4.800	8.218	3557	6.42	5	96.0	70	130	
As	75	2	He	5.134	3.653	2438	3.36	5	102.7	70	130	
Se	78	2	He	4.849	7.682	179	6.14	5	97.0	70	130	
B	11	1	nogas	59.174	9.151	109392	7.63	25	236.7	70	130	LLICV Main CR1 Failed
Si	28	1	nogas	321.565	1.242	1836348	1.02	25	1286.3	70	130	LLICV Main CR1 Failed
Ca	43	1	nogas	513.997	3.529	10353	2.78	500	102.8	70	130	
Ca	44	1	nogas	147.702	18.014	572258	0.90	500	29.5	70	130	LLICV Main CR1 Failed
Fe	56	1	nogas	523.506	1.470	7850465	2.28	500	104.7	70	130	
Se	77	1	nogas	22.923	10.164	11587	3.52	5	458.5	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	5.765	24.760	1100	15.85	5	115.3	70	130	
Mo	95	1	nogas	5.542	1.695	19882	0.51	5	110.8	70	130	
Sn	118	1	nogas	5.243	1.519	28822	2.77	5	104.9	70	130	
Ba	137	1	nogas	5.148	5.624	13329	3.98	5	103.0	70	130	
Sb	121	2	He	5.198	6.503	8602	6.68	5	104.0	70	130	
Li	7	1	nogas	5.013	4.631	67147	0.76	5	100.3	70	130	
P	31	1	nogas	8.330	33.030	63024	3.17	25	33.3	70	130	LLICV Main CR1 Failed
La	139	1	nogas	-107.617	-11.791	40	25.00	5	-2152.3	70	130	LLICV Main CR1 Failed
Au	197	1	nogas	145.329	115.002	7	173.21	5	2906.6	70	130	LLICV Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	377308	1.48	409846	92.06	70	125	
Ge	72	1	nogas	1913048	1.17	1928234	99.21	70	125	
In	115	1	nogas	2020246	1.65	2023507	99.84	70	125	
Bi	209	1	nogas	1877300	1.90	1855077	101.20	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	312694	0.58	314233	99.51	70	125	

Sample Report

Sample Table

Sample Name	LLICV2
Data File Name	012SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T11:09:00-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	1.791	1.791	2.01	4957	0.04	2000	
Na	23	1	nogas	205.164	205.164	0.24	4007519	0.01	200000	
Mg	24	1	nogas	212.593	212.593	1.16	1621241	0.01	200000	
Al	27	1	nogas	0.575	0.575	29.72	57774	0.00	2000	
K	39	1	nogas	186.858	186.858	2.21	5186741	0.00	200000	
Ti	47	1	nogas	2.144	2.144	4.48	2237	0.10	2000	
V	51	1	nogas	7.136	7.136	8.39	206165	0.00	2000	
Cr	52	1	nogas	2.156	2.156	4.32	41291	0.01	2000	
Mn	55	1	nogas	2.038	2.038	2.92	36975	0.01	2000	
Co	59	1	nogas	2.210	2.210	4.80	30984	0.01	2000	
Ni	60	1	nogas	1.471	1.471	5.79	7305	0.02	2000	
Cu	63	1	nogas	1.839	1.839	2.04	24784	0.01	2000	
Zn	66	1	nogas	1.722	1.722	10.15	5664	0.03	2000	
As	75	1	nogas	5.558	5.558	11.44	42280	0.01	2000	
Sr	88	1	nogas	2.129	2.129	0.94	34211	0.01	2000	
Ag	107	1	nogas	2.226	2.226	3.89	20666	0.01	2000	
Cd	111	1	nogas	2.199	2.199	5.73	4414	0.05	2000	
Sb	121	1	nogas	2.101	2.101	3.80	19114	0.01	2000	
Tl	205	1	nogas	2.003	2.003	0.43	31992	0.01	2000	
Pb	208	1	nogas	2.093	2.093	1.09	48230	0.00	2000	
U	238	1	nogas	2.094	2.094	2.90	49231	0.00	2000	
[Pb]	206	1	nogas	2.089	2.089	3.14	11675	0.02	2000	
[Pb]	207	1	nogas	2.030	2.030	4.68	10554	0.02	2000	
Na	23	2	He	199.469	199.469	7.41	261243	0.08	200000	
Mg	24	2	He	222.360	222.360	1.49	65960	0.34	200000	
Al	27	2	He	1.467	1.467	94.31	903	0.16	2000	
K	39	2	He	208.207	208.207	3.68	116280	0.18	200000	
Ca	43	2	He	148.715	148.715	6.72	133	111.53	200000	
Ca	44	2	He	173.992	173.992	13.50	4124	4.22	200000	
V	51	2	He	1.990	1.990	2.02	6393	0.03	2000	
Cr	52	2	He	2.142	2.142	1.92	10030	0.02	2000	
Mn	55	2	He	1.936	1.936	7.31	4234	0.05	2000	
Fe	56	2	He	218.385	218.385	3.68	597058	0.04	200000	
Co	59	2	He	2.077	2.077	9.76	9486	0.02	2000	
Ni	60	2	He	1.759	1.759	9.29	2830	0.06	2000	
Cu	63	2	He	1.391	1.391	17.13	9533	0.01	2000	
Zn	66	2	He	1.185	1.185	25.46	1277	0.09	2000	
As	75	2	He	2.119	2.119	2.82	1041	0.20	2000	
Se	78	2	He	1.603	1.603	8.58	84	1.92	2000	
B	11	1	nogas	24.232	24.232	4.43	49844	0.05	2000	
Si	28	1	nogas	119.052	119.052	1.51	1026074	0.01	2000	
Ca	43	1	nogas	203.329	203.329	1.88	4487	4.53	200000	

Ca	44	1	nogas	-297.297	-297.297	-5.56	439395	-0.07	200000	
Fe	56	1	nogas	210.780	210.780	1.36	3409577	0.01	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Se	77	1	nogas	31.188	31.188	11.99	12621	0.25	2000	
Se	82	1	nogas	2.252	2.252	15.47	640	0.35	2000	
Mo	95	1	nogas	2.102	2.102	4.67	7665	0.03	2000	
Sn	118	1	nogas	1.985	1.985	1.89	11227	0.02	2000	
Ba	137	1	nogas	2.104	2.104	3.89	5484	0.04	2000	
Sb	121	2	He	2.048	2.048	15.73	3607	0.06	2000	
La	139	1	nogas	-72.443	-72.443	-84.81	67	-108.66	2000	
Au	197	1	nogas	99.636	99.636	247.18	10	996.36	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	378319	0.21	409846	92.31	70	125	
Ge	72	1	nogas	1901232	0.59	1928234	98.60	70	125	
In	115	1	nogas	2004788	0.51	2023507	99.07	70	125	
Bi	209	1	nogas	1881354	0.58	1855077	101.42	70	125	
Ge	72	2	He	311495	2.59	314233	99.13	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	013_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T11:11:57-05:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	-0.003	-67.8	7	86.6	1	
Na	23	1	nogas	-9.478	-50.9	1669135	2.1	100	
Mg	24	1	nogas	0.187	64.0	8305	9.9	100	
Al	27	1	nogas	-6.524	-0.3	13008	0.6	5	
K	39	1	nogas	-19.671	-17.2	3316775	0.4	100	
Ti	47	1	nogas	0.060	117.3	237	28.1	2.5	
V	51	1	nogas	7.614	4.5	211301	1.4	2.5	ICB Main CR1 Failed
Cr	52	1	nogas	-0.036	-201.6	13532	6.1	2.5	
Mn	55	1	nogas	-0.098	-11.4	3641	5.7	2.5	
Co	59	1	nogas	0.006	235.2	427	47.1	2.5	
Ni	60	1	nogas	-0.743	-2.4	317	18.0	2.5	
Cu	63	1	nogas	-0.470	-11.8	6585	5.6	2.5	
Zn	66	1	nogas	-0.457	-8.3	370	25.8	2.5	
As	75	1	nogas	4.141	8.6	38211	1.6	2.5	ICB Main CR1 Failed
Sr	88	1	nogas	-0.004	-142.2	633	13.6	2.5	
Ag	107	1	nogas	0.014	13.9	213	7.2	2.5	
Cd	111	1	nogas	0.015	52.7	33	45.8	1	
Sb	121	1	nogas	-0.071	-35.4	1417	13.8	2.5	
Tl	205	1	nogas	0.055	22.8	1020	19.5	1	
Pb	208	1	nogas	0.025	5.8	1197	2.9	2.5	
U	238	1	nogas	0.002	27.2	177	8.6	2.5	
[Pb]	206	1	nogas	0.028	33.7	307	15.4	2.5	
[Pb]	207	1	nogas	0.019	51.6	250	21.2	2.5	
Na	23	2	He	-18.061	-31.0	140982	1.2	100	
Mg	24	2	He	0.100	577.3	583	27.7	100	
Al	27	2	He	-4.268	-9.1	167	30.8	5	
K	39	2	He	-12.269	-37.0	63502	1.7	100	
Ca	43	2	He	21.523	121.7	33	62.4	100	
Ca	44	2	He	-34.149	-10.6	1343	3.0	100	
V	51	2	He	-0.029	-100.0	1376	5.9	2.5	
Cr	52	2	He	0.035	154.7	3420	4.8	2.5	
Mn	55	2	He	-0.105	-60.8	427	27.0	2.5	
Fe	56	2	He	0.490	31.0	8706	3.9	100	
Co	59	2	He	-0.006	-58.0	80	21.7	2.5	
Ni	60	2	He	-0.339	-10.8	277	15.0	2.5	
Cu	63	2	He	-0.936	-1.1	1994	1.0	2.5	
Zn	66	2	He	-0.714	-13.2	83	69.3	2.5	
As	75	2	He	0.063	49.6	96	14.1	2.5	
Se	78	2	He	-0.636	-19.5	18	19.2	2.5	
B	11	1	nogas	10.276	10.3	25395	5.2	10	ICB Main CR1 Failed
Si	28	1	nogas	-1.943	-68.5	544170	0.2	5	
Ca	43	1	nogas	-3.030	-48.0	627	3.3	100	
Ca	44	1	nogas	-603.092	-4.0	347577	1.0	100	
Fe	56	1	nogas	-4.032	-22.1	389731	3.1	100	
Se	77	1	nogas	34.939	11.5	13012	3.5	2.5	ICB Main CR1 Failed
Se	82	1	nogas	-0.281	-95.4	310	11.6	2.5	

Mo	95	1	nogas	-0.015	-67.9	223	15.7	2.5	
Sn	118	1	nogas	0.007	286.9	683	17.0	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	-0.009	-133.1	103	27.9	2.5	
Sb	121	2	He	-0.113	-53.2	217	42.9	2.5	
P	31	1	nogas	-21.212	-4.1	43819	1.2	10	
La	139	1	nogas	106.638	33.1	203	15.0	2.5	ICB Main CR1 Failed
Au	197	1	nogas	145.678	114.3	7	173.2	2.5	ICB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	370883	1.71	409846	90.49	70	125	
Ge	72	1	nogas	1885506	1.02	1928234	97.78	70	125	
In	115	1	nogas	1999516	1.89	2023507	98.81	70	125	
Bi	209	1	nogas	1871681	1.86	1855077	100.90	70	125	
Ge	72	2	He	310210	1.13	314233	98.72	70	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	015ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T11:18:02-05:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.032	77.1	110	63.6	0	ICSA Main CR1 Failed
Na	23	1	nogas	102904.601	2.6	1174065560	1.8	0	
Mg	24	1	nogas	105288.542	2.0	822130068	2.1	0	
Al	27	1	nogas	96313.907	1.6	610094284	1.0	0	
K	39	1	nogas	104438.418	1.8	941629521	2.6	0	
Ti	47	1	nogas	2177.382	2.2	2102707	2.2	0	
V	51	1	nogas	1.558	25.1	126730	4.8	0	ICSA Main CR1 Failed
Cr	52	1	nogas	1.590	5.3	34390	2.9	0	ICSA Main CR1 Failed
Mn	55	1	nogas	0.131	19.9	7285	4.1	0	ICSA Main CR1 Failed
Co	59	1	nogas	0.117	7.1	1980	7.3	0	ICSA Main CR1 Failed
Ni	60	1	nogas	-0.193	-45.1	2070	14.3	0	ICSA Main CR1 Failed
Cu	63	1	nogas	0.185	30.8	11871	2.8	0	ICSA Main CR1 Failed
Zn	66	1	nogas	0.646	14.1	3070	5.7	0	ICSA Main CR1 Failed
As	75	1	nogas	3.817	8.2	37947	3.3	0	ICSA Main CR1 Failed
Sr	88	1	nogas	1.075	4.6	17753	5.0	0	ICSA Main CR1 Failed
Ag	107	1	nogas	0.055	3.9	603	2.5	0	ICSA Main CR1 Failed
Cd	111	1	nogas	1.033	5.4	1994	6.0	0	ICSA Main CR1 Failed
Sb	121	1	nogas	0.291	5.8	4411	1.8	0	ICSA Main CR1 Failed
Tl	205	1	nogas	0.295	33.7	4638	31.2	0	ICSA Main CR1 Failed
Pb	208	1	nogas	0.224	10.2	5491	9.6	0	ICSA Main CR1 Failed
[Pb]	206	1	nogas	0.226	12.2	1340	11.0	0	ICSA Main CR1 Failed
[Pb]	207	1	nogas	0.225	5.0	1250	5.6	0	ICSA Main CR1 Failed
Na	23	2	He	100620.237	0.6	57185842	1.8	0	
Mg	24	2	He	100087.146	0.9	30298490	1.7	0	
Al	27	2	He	65017.908	1.2	8602430	1.6	0	
K	39	2	He	105133.477	0.5	25233385	0.5	0	
Ca	43	2	He	96364.687	1.8	78069	1.1	0	
Ca	44	2	He	97686.173	2.4	1344408	1.4	0	
V	51	2	He	-0.222	-8.9	927	4.8	0	ICSA Main CR1 Failed
Cr	52	2	He	1.224	2.5	7365	2.5	0	ICSA Main CR1 Failed
Mn	55	2	He	0.025	149.2	690	10.1	0	ICSA Main CR1 Failed
Fe	56	2	He	96798.155	1.8	269109016	0.6	0	
Co	59	2	He	0.012	106.1	170	36.7	0	ICSA Main CR1 Failed
Ni	60	2	He	-0.401	-10.1	210	25.2	0	ICSA Main CR1 Failed
Cu	63	2	He	-0.501	-11.6	3510	4.8	0	ICSA Main CR1 Failed
Zn	66	2	He	-0.369	-18.0	310	14.8	0	ICSA Main CR1 Failed
As	75	2	He	0.214	36.8	170	20.7	0	ICSA Main CR1 Failed
Se	78	2	He	-0.334	-129.2	28	46.5	0	ICSA Main CR1 Failed
B	11	1	nogas	25.495	27.6	55007	21.2	0	
Si	28	1	nogas	72.303	6.9	847379	1.3	0	
Ca	43	1	nogas	99680.970	2.7	1875415	1.4	0	
Ca	44	1	nogas	103039.907	1.0	30690656	1.7	0	
Fe	56	1	nogas	103143.068	0.6	1459158033	2.1	0	
Se	77	1	nogas	30.280	15.7	12591	6.3	0	
Se	82	1	nogas	-0.239	-305.6	320	29.8	0	ICSA Main CR1 Failed
Mo	95	1	nogas	2165.523	1.4	7666827	0.4	0	
Sn	118	1	nogas	0.155	13.6	1413	7.9	0	ICSA Main CR1 Failed
Ba	137	1	nogas	0.063	53.1	273	29.6	0	ICSA Main CR1 Failed
Sb	121	2	He	0.279	38.8	860	21.3	0	ICSA Main CR1 Failed

P	31	1	nogas	98461.924	1.9	61967621	2.6	0	
La	139	1	nogas	248.622	18.1	300	12.0	0	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	401246	1.85	409846	97.90	70	125	
Ge	72	1	nogas	1914530	1.54	1928234	99.29	70	125	
In	115	1	nogas	1925354	1.03	2023507	95.15	70	125	
Bi	209	1	nogas	1805207	1.53	1855077	97.31	70	125	
Ge	72	2	He	320576	1.23	314233	102.02	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	016ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T11:21:13-05:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	88.453	1.608	250482	2.15	100	88.5	80	120	
Na	23	1	nogas	114001.729	1.130	1355493330	1.53	100	114001.7	80	120	
Mg	24	1	nogas	110945.715	2.506	902727720	2.03	100	110945.7	80	120	ICSB Main CR1 Failed
Al	27	1	nogas	96171.121	1.885	629654337	2.79	100	96171.1	80	120	ICSB Main CR1 Failed
K	39	1	nogas	114165.850	1.240	1063204757	0.79	100	114165.8	80	120	
Ti	47	1	nogas	2291.180	3.251	2286158	2.57	100	2291.2	80	120	
V	51	1	nogas	97.526	2.238	1569291	1.21	100	97.5	80	120	
Cr	52	1	nogas	94.777	0.903	1258079	0.97	100	94.8	80	120	
Mn	55	1	nogas	93.783	1.744	1526679	1.58	100	93.8	80	120	
Co	59	1	nogas	95.593	0.392	1379592	1.21	100	95.6	80	120	
Ni	60	1	nogas	91.821	1.854	304108	1.52	100	91.8	80	120	
Cu	63	1	nogas	90.514	2.047	751031	2.47	100	90.5	80	120	
Zn	66	1	nogas	94.217	1.674	239737	2.10	100	94.2	80	120	
As	75	1	nogas	97.565	0.465	297327	0.99	100	97.6	80	120	
Sr	88	1	nogas	96.978	2.730	1589321	2.17	100	97.0	80	120	
Ag	107	1	nogas	90.910	0.573	874487	0.45	100	90.9	80	120	
Cd	111	1	nogas	93.842	0.592	189142	1.09	100	93.8	80	120	
Sb	121	1	nogas	95.335	0.801	809629	1.46	100	95.3	80	120	
Tl	205	1	nogas	92.162	1.730	1435249	0.79	100	92.2	80	120	
Pb	208	1	nogas	93.795	0.582	2089852	1.43	100	93.8	80	120	
U	238	1	nogas	99.760	0.389	2292119	1.83	100	99.8	80	120	
[Pb]	206	1	nogas	93.004	2.099	502557	1.48	100	93.0	80	120	
[Pb]	207	1	nogas	93.367	1.072	468627	1.55	100	93.4	80	120	
Na	23	2	He	111191.879	0.344	63449167	0.52	100	111191.9	80	120	
Mg	24	2	He	111054.802	0.650	33763921	0.64	100	111054.8	80	120	
Al	27	2	He	66554.808	2.143	8844342	2.32	100	66554.8	80	120	ICSB Main CR1 Failed
K	39	2	He	115514.736	1.158	27718460	1.16	100	115514.7	80	120	
Ca	43	2	He	103335.824	2.138	84086	1.96	100	103335.8	80	120	ICSB Main CR1 Failed
Ca	44	2	He	105507.704	2.725	1458391	2.39	100	105507.7	80	120	ICSB Main CR1 Failed
V	51	2	He	92.597	0.658	239104	0.32	100	92.6	80	120	
Cr	52	2	He	91.977	1.715	301031	1.81	100	92.0	80	120	
Mn	55	2	He	87.173	0.949	168736	1.10	100	87.2	80	120	
Fe	56	2	He	106963.473	0.581	298700149	0.31	100	106963.5	80	120	
Co	59	2	He	89.193	0.977	416921	0.63	100	89.2	80	120	
Ni	60	2	He	88.552	0.314	111949	0.60	100	88.6	80	120	
Cu	63	2	He	89.312	0.873	304416	1.18	100	89.3	80	120	
Zn	66	2	He	91.567	0.757	59947	0.99	100	91.6	80	120	
As	75	2	He	91.746	0.438	43693	0.09	100	91.7	80	120	
Se	78	2	He	90.691	2.279	2782	2.04	100	90.7	80	120	
B	11	1	nogas	456.982	1.533	812346	1.81	100	457.0	80	120	
Si	28	1	nogas	5064.783	1.407	21371311	1.66	100	5064.8	80	120	ICSB Main CR1 Failed
Ca	43	1	nogas	108593.320	0.913	2111781	1.79	100	108593.3	80	120	
Ca	44	1	nogas	112907.236	0.805	34700437	1.70	100	112907.2	80	120	
Fe	56	1	nogas	111230.936	1.461	1625786336	0.98	100	111230.9	80	120	
Se	77	1	nogas	115.942	1.391	24938	1.22	100	115.9	80	120	
Se	82	1	nogas	89.642	0.578	12431	0.76	100	89.6	80	120	
Mo	95	1	nogas	2214.930	2.218	8104491	2.59	100	2214.9	80	120	ICSB Main CR1 Failed
Sn	118	1	nogas	95.007	0.741	509562	1.31	100	95.0	80	120	
Ba	137	1	nogas	94.453	3.414	241801	2.79	100	94.5	80	120	
Sb	121	2	He	91.402	1.164	148932	1.48	100	91.4	80	120	
La	139	1	nogas	500.412	13.677	507	8.90	100	500.4	80	120	ICSB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	388239	1.19	409846	94.73	70	125	
Ge	72	1	nogas	1978343	0.91	1928234	102.60	70	125	
In	115	1	nogas	2014643	1.68	2023507	99.56	70	125	
Bi	209	1	nogas	1843095	1.59	1855077	99.35	70	125	
Ge	72	2	He	321968	0.34	314233	102.46	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	023_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T11:41:57-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	95.312	1.012	273859	1.21	100	95.3	90	110	
Na	23	1	nogas	10173.871	0.027	123105953	1.13	10000	101.7	90	110	
Mg	24	1	nogas	10139.405	1.772	82805658	0.80	10000	101.4	90	110	
Al	27	1	nogas	124.305	24.298	873418	21.31	100	124.3	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10168.280	1.687	98666942	2.37	10000	101.7	90	110	
Ti	47	1	nogas	103.667	2.810	104276	1.87	100	103.7	90	110	
V	51	1	nogas	128.338	3.676	2043880	2.74	100	128.3	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	104.817	3.480	1398292	2.26	100	104.8	90	110	
Mn	55	1	nogas	103.583	2.935	1695966	1.11	100	103.6	90	110	
Co	59	1	nogas	103.634	4.082	1504627	2.96	100	103.6	90	110	
Ni	60	1	nogas	102.125	3.694	339994	2.37	100	102.1	90	110	
Cu	63	1	nogas	101.070	3.556	842384	1.93	100	101.1	90	110	
Zn	66	1	nogas	102.419	1.742	262088	0.16	100	102.4	90	110	
As	75	1	nogas	111.163	0.973	336906	1.61	100	111.2	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	103.567	3.617	1707713	2.09	100	103.6	90	110	
Ag	107	1	nogas	105.382	2.095	1020030	1.23	100	105.4	90	110	
Cd	111	1	nogas	103.281	0.420	210966	0.48	100	103.3	90	110	
Sb	121	1	nogas	102.033	0.859	871838	0.97	100	102.0	90	110	
Tl	205	1	nogas	100.787	4.875	1634052	3.16	100	100.8	90	110	
Pb	208	1	nogas	101.369	0.978	2352135	1.13	100	101.4	90	110	
U	238	1	nogas	106.079	1.003	2538175	1.15	100	106.1	90	110	
[Pb]	206	1	nogas	101.474	1.971	571068	1.58	100	101.5	90	110	
[Pb]	207	1	nogas	100.789	1.500	526804	0.80	100	100.8	90	110	
Na	23	2	He	10098.673	2.305	5898756	1.08	10000	101.0	90	110	
Mg	24	2	He	10222.731	2.997	3105089	1.83	10000	102.2	90	110	
Al	27	2	He	98.053	4.306	13752	2.99	100	98.1	90	110	
K	39	2	He	10655.878	2.184	2617252	2.13	10000	106.6	90	110	
Ca	43	2	He	9341.822	3.623	7609	2.55	10000	93.4	90	110	
Ca	44	2	He	9881.273	1.123	138161	1.52	10000	98.8	90	110	
V	51	2	He	100.891	2.146	260117	0.98	100	100.9	90	110	
Cr	52	2	He	100.829	2.471	329319	1.28	100	100.8	90	110	
Mn	55	2	He	99.754	4.448	192758	3.25	100	99.8	90	110	
Fe	56	2	He	9980.161	1.235	27850264	0.42	10000	99.8	90	110	
Co	59	2	He	101.263	0.811	472909	1.08	100	101.3	90	110	
Ni	60	2	He	100.928	0.914	127383	1.60	100	100.9	90	110	
Cu	63	2	He	101.857	1.408	346138	1.92	100	101.9	90	110	
Zn	66	2	He	102.403	1.569	66911	1.25	100	102.4	90	110	
As	75	2	He	100.634	2.349	47870	1.56	100	100.6	90	110	
Se	78	2	He	100.382	0.981	3072	0.78	100	100.4	90	110	
B	11	1	nogas	477.845	1.899	861572	2.46	500	95.6	90	110	
Si	28	1	nogas	5292.298	1.744	22445026	1.06	5000	105.8	90	110	
Ca	43	1	nogas	10248.595	1.372	201195	0.61	10000	102.5	90	110	
Ca	44	1	nogas	9688.010	1.940	3499254	0.53	10000	96.9	90	110	
Fe	56	1	nogas	10177.758	3.085	150100262	1.26	10000	101.8	90	110	
Se	77	1	nogas	172.807	5.327	33064	3.65	100	172.8	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.608	1.085	13996	1.05	100	100.6	90	110	
Mo	95	1	nogas	102.218	4.060	376504	2.27	100	102.2	90	110	
Sn	118	1	nogas	100.744	1.569	547556	1.63	100	100.7	90	110	
Ba	137	1	nogas	101.968	1.424	264580	1.36	100	102.0	90	110	
Sb	121	2	He	103.345	0.303	168188	1.32	100	103.3	90	110	
Li	7	1	nogas	95.714	1.494	655371	1.97	100	95.7	90	110	
P	31	1	nogas	476.622	2.372	371714	0.18	500	95.3	90	110	
La	139	1	nogas	71.582	146.571	180	45.47	100	71.6	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	149.351	53.621	7	86.60	100	149.4	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	393984	2.06	409846	96.13	70	125	
Ge	72	1	nogas	1991074	1.83	1928234	103.26	70	125	
In	115	1	nogas	2041600	0.06	2023507	100.89	70	125	
Bi	209	1	nogas	1919584	1.75	1855077	103.48	70	125	

Ge	72	2	He	321685	1.16	314233	102.37	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	024_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T11:45:04-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.016	25.7	67	17.3	1	
Na	23	1	nogas	-13.996	-12.8	1709491	0.4	100	
Mg	24	1	nogas	3.936	44.6	39585	36.2	100	
Al	27	1	nogas	-4.933	-21.4	24816	30.5	5	
K	39	1	nogas	-23.201	-23.0	3543309	1.6	100	
Ti	47	1	nogas	0.055	80.3	250	18.3	2.5	
V	51	1	nogas	37.121	4.4	682304	2.3	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.391	20.8	20352	3.7	2.5	
Mn	55	1	nogas	0.138	10.2	7865	2.0	2.5	
Co	59	1	nogas	0.019	60.8	653	26.2	2.5	
Ni	60	1	nogas	-0.741	-2.6	350	20.0	2.5	
Cu	63	1	nogas	-0.812	-0.9	4227	3.0	2.5	
Zn	66	1	nogas	-0.405	-7.0	533	15.3	2.5	
As	75	1	nogas	18.497	5.8	81841	3.9	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.049	16.7	1570	7.1	2.5	
Ag	107	1	nogas	0.035	36.3	440	29.5	2.5	
Cd	111	1	nogas	0.045	32.8	100	30.0	1	
Sb	121	1	nogas	0.016	133.7	2287	6.4	2.5	
Tl	205	1	nogas	0.348	49.7	5968	47.9	1	
Pb	208	1	nogas	0.059	14.1	2083	9.2	2.5	
U	238	1	nogas	0.038	12.0	1083	10.1	2.5	
[Pb]	206	1	nogas	0.060	18.0	507	11.9	2.5	
[Pb]	207	1	nogas	0.048	16.4	417	10.0	2.5	
Na	23	2	He	-35.082	-11.6	138675	0.9	100	
Mg	24	2	He	2.272	35.2	1287	19.8	100	
Al	27	2	He	-2.528	-17.1	410	14.8	5	
K	39	2	He	4.278	18.7	67463	0.3	100	
Ca	43	2	He	11.569	322.4	27	114.6	100	
Ca	44	2	He	-70.196	-7.4	910	7.6	100	
V	51	2	He	1.059	3.3	4283	1.5	2.5	
Cr	52	2	He	-0.017	-877.4	3434	13.8	2.5	
Mn	55	2	He	-0.178	-15.5	307	16.7	2.5	
Fe	56	2	He	2.717	3.0	15484	1.4	100	
Co	59	2	He	0.015	51.9	183	19.2	2.5	
Ni	60	2	He	-0.409	-0.8	203	2.8	2.5	
Cu	63	2	He	-1.159	-1.2	1343	4.3	2.5	
Zn	66	2	He	-0.732	-9.9	77	61.6	2.5	
As	75	2	He	0.276	19.5	203	12.4	2.5	
Se	78	2	He	-0.407	-61.3	26	29.0	2.5	
B	11	1	nogas	29.453	9.0	65880	8.4	10	CCB Main CR1 Failed
Si	28	1	nogas	3.982	101.1	611842	2.6	5	
Ca	43	1	nogas	25.197	38.6	1240	15.7	100	
Ca	44	1	nogas	-1058.725	-1.3	233205	1.0	100	
Fe	56	1	nogas	8.409	13.2	607046	1.5	100	
Se	77	1	nogas	121.766	4.1	26463	2.5	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.170	355.3	397	21.4	2.5	
Mo	95	1	nogas	0.257	28.0	1260	21.0	2.5	
Sn	118	1	nogas	0.066	33.6	1070	13.3	5	

Ba	137	1	nogas	0.022	47.5	193	13.0	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	0.008	865.0	430	28.2	2.5	
P	31	1	nogas	-33.390	-0.8	39125	1.3	10	
La	139	1	nogas	-138.762	-18.8	17	124.9	2.5	
Au	197	1	nogas	241.823	0.0	0	#DIV/0!	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	423804	1.77	409846	103.41	70	125	
Ge	72	1	nogas	2033484	1.71	1928234	105.46	70	125	
In	115	1	nogas	2140143	1.73	2023507	105.76	70	125	
Bi	209	1	nogas	1977172	0.45	1855077	106.58	70	125	
Ge	72	2	He	326745	0.89	314233	103.98	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	035_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T12:18:05-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	94.988	1.636	271970	2.67	100	95.0	90	110	
Na	23	1	nogas	10508.465	1.573	128390603	0.90	10000	105.1	90	110	
Mg	24	1	nogas	9852.118	1.637	81290883	0.99	10000	98.5	90	110	
Al	27	1	nogas	137.534	2.386	963487	1.25	100	137.5	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10290.520	2.266	99882140	1.10	10000	102.9	90	110	
Ti	47	1	nogas	102.151	2.702	102845	0.96	100	102.2	90	110	
V	51	1	nogas	97.427	1.753	1579469	1.94	100	97.4	90	110	
Cr	52	1	nogas	104.359	2.882	1393583	1.23	100	104.4	90	110	
Mn	55	1	nogas	104.679	3.263	1715378	1.10	100	104.7	90	110	
Co	59	1	nogas	103.661	2.402	1506605	0.80	100	103.7	90	110	
Ni	60	1	nogas	101.500	2.512	338272	0.46	100	101.5	90	110	
Cu	63	1	nogas	101.506	1.607	846983	1.16	100	101.5	90	110	
Zn	66	1	nogas	101.616	1.109	260344	2.10	100	101.6	90	110	
As	75	1	nogas	97.370	0.366	299012	2.46	100	97.4	90	110	
Sr	88	1	nogas	103.407	1.550	1707105	1.02	100	103.4	90	110	
Ag	107	1	nogas	103.018	2.258	998023	0.12	100	103.0	90	110	
Cd	111	1	nogas	99.338	1.720	203907	1.64	100	99.3	90	110	
Sb	121	1	nogas	101.482	1.260	867959	1.27	100	101.5	90	110	
Tl	205	1	nogas	101.392	3.626	1641780	0.83	100	101.4	90	110	
Pb	208	1	nogas	100.132	1.896	2320194	1.04	100	100.1	90	110	
U	238	1	nogas	103.305	2.026	2468405	1.59	100	103.3	90	110	
[Pb]	206	1	nogas	99.667	3.226	560010	0.41	100	99.7	90	110	
[Pb]	207	1	nogas	99.407	1.719	518905	1.12	100	99.4	90	110	
Na	23	2	He	10256.594	1.948	5920889	1.32	10000	102.6	90	110	
Mg	24	2	He	10323.282	1.960	3100303	1.12	10000	103.2	90	110	
Al	27	2	He	99.946	3.236	13846	2.16	100	99.9	90	110	
K	39	2	He	10517.243	0.954	2584066	0.93	10000	105.2	90	110	
Ca	43	2	He	9947.553	3.163	8009	1.88	10000	99.5	90	110	
Ca	44	2	He	10036.403	2.885	138674	1.41	10000	100.4	90	110	
V	51	2	He	98.892	1.609	252115	1.18	100	98.9	90	110	
Cr	52	2	He	99.299	1.230	320732	1.13	100	99.3	90	110	
Mn	55	2	He	99.296	2.569	189744	2.30	100	99.3	90	110	
Fe	56	2	He	10068.733	2.451	27774887	1.12	10000	100.7	90	110	
Co	59	2	He	100.619	2.392	464475	0.75	100	100.6	90	110	
Ni	60	2	He	100.744	1.706	125693	1.12	100	100.7	90	110	
Cu	63	2	He	102.100	2.121	342953	1.09	100	102.1	90	110	
Zn	66	2	He	100.810	2.095	65125	0.97	100	100.8	90	110	
As	75	2	He	100.056	0.244	47062	1.43	100	100.1	90	110	
Se	78	2	He	100.073	4.121	3027	2.76	100	100.1	90	110	
B	11	1	nogas	467.268	2.575	839727	3.56	500	93.5	90	110	
Si	28	1	nogas	5223.570	2.585	22180019	1.32	5000	104.5	90	110	
Ca	43	1	nogas	10225.636	2.216	200914	0.32	10000	102.3	90	110	
Ca	44	1	nogas	9202.325	4.050	3353949	1.80	10000	92.0	90	110	
Fe	56	1	nogas	10281.490	3.109	151786699	2.30	10000	102.8	90	110	
Se	77	1	nogas	87.205	3.210	21090	2.45	100	87.2	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	97.842	3.409	13642	5.32	100	97.8	90	110	
Mo	95	1	nogas	102.796	1.013	379146	1.34	100	102.8	90	110	
Sn	118	1	nogas	98.921	0.601	540294	0.30	100	98.9	90	110	
Ba	137	1	nogas	100.668	0.937	262497	1.15	100	100.7	90	110	
Sb	121	2	He	101.621	3.154	163458	1.50	100	101.6	90	110	
Li	7	1	nogas	96.775	0.880	659823	1.87	100	96.8	90	110	
P	31	1	nogas	473.670	2.885	370130	1.24	500	94.7	90	110	
La	139	1	nogas	155.562	33.648	247	16.88	100	155.6	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	195.415	41.133	3	173.21	100	195.4	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	392508	1.04	409846	95.77	70	125	
Ge	72	1	nogas	1993069	2.21	1928234	103.36	70	125	
In	115	1	nogas	2051644	0.31	2023507	101.39	70	125	
Bi	209	1	nogas	1917386	2.79	1855077	103.36	70	125	

Ge	72	2	He	318044	1.64	314233	101.21	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	036_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T12:21:12-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.035	76.7	127	66.2	1	
Na	23	1	nogas	-3.139	-42.4	1860617	1.9	100	
Mg	24	1	nogas	3.559	24.0	36951	19.8	100	
Al	27	1	nogas	-5.871	-0.7	18323	3.3	5	
K	39	1	nogas	-14.332	-73.8	3606422	1.3	100	
Ti	47	1	nogas	-0.055	-70.3	137	29.6	2.5	
V	51	1	nogas	-2.270	-1.9	75194	1.7	2.5	
Cr	52	1	nogas	-0.230	-10.3	11918	0.6	2.5	
Mn	55	1	nogas	0.163	5.1	8232	3.8	2.5	
Co	59	1	nogas	0.020	36.9	663	15.1	2.5	
Ni	60	1	nogas	-0.716	-3.3	430	20.1	2.5	
Cu	63	1	nogas	-0.649	-2.6	5564	1.2	2.5	
Zn	66	1	nogas	-0.432	-5.9	460	15.7	2.5	
As	75	1	nogas	-1.005	-45.7	26483	2.7	2.5	
Sr	88	1	nogas	0.136	17.0	3030	14.6	2.5	
Ag	107	1	nogas	0.034	29.1	427	24.6	2.5	
Cd	111	1	nogas	0.037	47.6	83	45.4	1	
Sb	121	1	nogas	0.067	19.4	2722	5.4	2.5	
Tl	205	1	nogas	0.339	40.0	5751	40.9	1	
Pb	208	1	nogas	0.047	26.6	1750	18.7	2.5	
U	238	1	nogas	0.039	22.2	1090	21.4	2.5	
[Pb]	206	1	nogas	0.044	46.8	407	30.7	2.5	
[Pb]	207	1	nogas	0.048	10.1	410	6.5	2.5	
Na	23	2	He	-20.373	-26.6	145646	2.0	100	
Mg	24	2	He	3.126	25.1	1533	15.7	100	
Al	27	2	He	-3.244	-31.0	310	43.4	5	
K	39	2	He	10.161	41.5	68871	1.5	100	
Ca	43	2	He	24.065	58.7	37	31.5	100	
Ca	44	2	He	-76.494	-8.1	813	10.5	100	
V	51	2	He	-0.392	-3.4	497	6.9	2.5	
Cr	52	2	He	-0.076	-71.5	3204	5.6	2.5	
Mn	55	2	He	-0.114	-41.9	427	21.7	2.5	
Fe	56	2	He	2.499	5.9	14710	2.9	100	
Co	59	2	He	0.020	50.4	207	22.9	2.5	
Ni	60	2	He	-0.383	-6.6	233	13.8	2.5	
Cu	63	2	He	-1.040	-4.0	1730	8.2	2.5	
Zn	66	2	He	-0.690	-9.0	103	39.1	2.5	
As	75	2	He	0.020	320.3	79	38.1	2.5	
Se	78	2	He	-0.520	-29.3	22	20.7	2.5	
B	11	1	nogas	27.743	12.9	63535	11.9	10	CCB Main CR1 Failed
Si	28	1	nogas	4.945	57.6	612402	1.9	5	
Ca	43	1	nogas	25.589	28.9	1240	11.2	100	
Ca	44	1	nogas	-1276.491	-0.7	164569	0.6	100	
Fe	56	1	nogas	8.998	6.9	612447	0.7	100	
Se	77	1	nogas	-2.064	-88.2	8686	1.9	2.5	
Se	82	1	nogas	0.086	431.7	383	14.8	2.5	
Mo	95	1	nogas	0.183	10.2	980	8.8	2.5	
Sn	118	1	nogas	0.069	66.8	1083	24.6	5	

Ba	137	1	nogas	0.010	224.5	160	37.5	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	0.118	56.9	603	18.2	2.5	
P	31	1	nogas	-36.712	-6.2	36680	2.4	10	
La	139	1	nogas	-105.787	-28.4	43	53.3	2.5	
Au	197	1	nogas	195.183	41.4	3	173.2	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	429955	1.00	409846	104.91	70	125	
Ge	72	1	nogas	2021975	2.12	1928234	104.86	70	125	
In	115	1	nogas	2136148	2.52	2023507	105.57	70	125	
Bi	209	1	nogas	1942290	1.92	1855077	104.70	70	125	
Ge	72	2	He	323333	0.09	314233	102.90	70	125	

Sample Report

Sample Table

Sample Name	MBLKT1-115813
Data File Name	043SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T12:41:48-05:00
Sample Type	Sample
Dilution	1
Comment	B115813 TCLP
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.001	0.001	739.17	20	0.00	2000	
Na	23	1	nogas	136388.189	136388.189	1.70	1655510537	0.01	200000	
Mg	24	1	nogas	9.964	9.964	1.16	90121	0.01	200000	
Al	27	1	nogas	2.637	2.637	5.31	76556	0.00	2000	
K	39	1	nogas	-21.800	-21.800	-30.54	3598344	0.00	200000	
Ti	47	1	nogas	0.030	0.030	191.53	227	0.01	2000	
V	51	1	nogas	-3.942	-3.942	-3.19	50423	-0.01	2000	
Cr	52	1	nogas	-0.225	-0.225	-11.32	12194	0.00	2000	
Mn	55	1	nogas	0.018	0.018	151.67	5938	0.00	2000	
Co	59	1	nogas	-0.004	-0.004	-60.17	310	0.00	2000	
Ni	60	1	nogas	-0.309	-0.309	-6.75	1827	-0.02	2000	
Cu	63	1	nogas	-0.719	-0.719	-3.73	5068	-0.01	2000	
Zn	66	1	nogas	0.199	0.199	19.02	2127	0.01	2000	
As	75	1	nogas	-2.205	-2.205	-7.07	23539	-0.01	2000	
Sr	88	1	nogas	0.107	0.107	2.42	2577	0.00	2000	
Ag	107	1	nogas	0.009	0.009	39.22	187	0.00	2000	
Cd	111	1	nogas	-0.002	-0.002	0.00	0	#DIV/0!	2000	
Sb	121	1	nogas	0.064	0.064	41.69	2740	0.00	2000	
Tl	205	1	nogas	0.007	0.007	70.32	270	0.00	2000	
Pb	208	1	nogas	0.010	0.010	35.39	883	0.00	2000	
U	238	1	nogas	-0.004	-0.004	-14.27	37	-0.01	2000	
[Pb]	206	1	nogas	0.010	0.010	16.96	210	0.00	2000	
[Pb]	207	1	nogas	0.006	0.006	92.27	187	0.00	2000	
Na	23	2	He	136021.907	136021.907	1.72	79949630	0.17	200000	
Mg	24	2	He	10.871	10.871	2.41	4001	0.27	200000	
Al	27	2	He	1.787	1.787	18.51	1007	0.18	2000	
K	39	2	He	14.574	14.574	28.83	69928	0.02	200000	
Ca	43	2	He	-0.916	-0.916	-758.66	17	-5.50	200000	
Ca	44	2	He	-75.159	-75.159	-4.40	853	-8.81	200000	
V	51	2	He	-0.470	-0.470	-2.04	304	-0.15	2000	
Cr	52	2	He	-0.171	-0.171	-19.06	2970	-0.01	2000	
Mn	55	2	He	-0.107	-0.107	-37.52	453	-0.02	2000	
Fe	56	2	He	1.111	1.111	7.97	11100	0.01	200000	
Co	59	2	He	-0.017	-0.017	-18.08	33	-0.05	2000	
Ni	60	2	He	-0.285	-0.285	-14.46	367	-0.08	2000	
Cu	63	2	He	-1.244	-1.244	-3.17	1070	-0.12	2000	
Zn	66	2	He	-0.155	-0.155	-65.19	463	-0.03	2000	
As	75	2	He	-0.021	-0.021	-262.99	61	-0.03	2000	
Se	78	2	He	-0.442	-0.442	-15.34	25	-1.74	2000	
B	11	1	nogas	10.338	10.338	3.58	27170	0.04	2000	
Si	28	1	nogas	143.524	143.524	5.43	1214554	0.01	2000	
Ca	43	1	nogas	9.521	9.521	95.55	940	1.01	200000	
Ca	44	1	nogas	-1347.955	-1347.955	-0.86	144976	-0.93	200000	
Fe	56	1	nogas	6.390	6.390	12.27	583703	0.00	200000	

Se	77	1	nogas	-9.321	-9.321	-49.78	7782	-0.12	2000	
Se	82	1	nogas	-0.289	-0.289	-153.24	337	-0.09	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	0.031	0.031	106.93	417	0.01	2000	
Sn	118	1	nogas	-0.060	-0.060	-8.76	347	-0.02	2000	
Ba	137	1	nogas	0.062	0.062	32.31	300	0.02	2000	
Sb	121	2	He	0.128	0.128	45.28	637	0.02	2000	
La	139	1	nogas	-134.794	-134.794	-15.87	20	-673.97	2000	
Au	197	1	nogas	241.823	241.823	0.00	0	#DIV/0!	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	413867	2.56	409846	100.98	70	125	
Ge	72	1	nogas	2057638	2.10	1928234	106.71	70	125	
In	115	1	nogas	2128438	1.37	2023507	105.19	70	125	
Bi	209	1	nogas	1914095	4.12	1855077	103.18	70	125	
Ge	72	2	He	331814	1.31	314233	105.59	70	125	

Sample Report

Sample Table

Sample Name	MBLK-115813
Data File Name	044SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T12:44:49-05:00
Sample Type	Sample
Dilution	1
Comment	B115813 TCLP
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.007	0.007	94.82	40	0.02	2000	
Na	23	1	nogas	18.090	18.090	51.66	2210767	0.00	200000	
Mg	24	1	nogas	10.351	10.351	6.68	97493	0.01	200000	
Al	27	1	nogas	2.101	2.101	11.65	75259	0.00	2000	
K	39	1	nogas	-40.791	-40.791	-5.45	3525153	0.00	200000	
Ti	47	1	nogas	-0.011	-0.011	-771.59	190	-0.01	2000	
V	51	1	nogas	-2.095	-2.095	-2.23	81785	0.00	2000	
Cr	52	1	nogas	-0.314	-0.314	-6.82	11334	0.00	2000	
Mn	55	1	nogas	-0.020	-0.020	-66.27	5461	0.00	2000	
Co	59	1	nogas	-0.012	-0.012	-38.14	197	-0.01	2000	
Ni	60	1	nogas	-0.671	-0.671	-6.74	610	-0.11	2000	
Cu	63	1	nogas	-0.827	-0.827	-0.18	4281	-0.02	2000	
Zn	66	1	nogas	0.003	0.003	3101.30	1663	0.00	2000	
As	75	1	nogas	-1.649	-1.649	-18.26	25926	-0.01	2000	
Sr	88	1	nogas	0.004	0.004	210.66	853	0.00	2000	
Ag	107	1	nogas	0.002	0.002	66.66	123	0.00	2000	
Cd	111	1	nogas	0.007	0.007	121.89	20	0.04	2000	
Sb	121	1	nogas	0.027	0.027	84.14	2497	0.00	2000	
Tl	205	1	nogas	0.001	0.001	206.79	190	0.00	2000	
Pb	208	1	nogas	0.001	0.001	738.51	723	0.00	2000	
U	238	1	nogas	-0.003	-0.003	-20.89	60	-0.01	2000	
[Pb]	206	1	nogas	0.003	0.003	221.57	190	0.00	2000	
[Pb]	207	1	nogas	-0.007	-0.007	-121.39	130	-0.01	2000	
Na	23	2	He	-19.555	-19.555	-3.75	154142	-0.01	200000	
Mg	24	2	He	11.385	11.385	2.19	4277	0.27	200000	
Al	27	2	He	2.435	2.435	36.96	1127	0.22	2000	
K	39	2	He	5.535	5.535	62.80	67764	0.01	200000	
Ca	43	2	He	37.101	37.101	82.18	50	74.20	200000	
Ca	44	2	He	-92.086	-92.086	-11.94	630	-14.62	200000	
V	51	2	He	-0.403	-0.403	-1.75	495	-0.08	2000	
Cr	52	2	He	-0.227	-0.227	-18.66	2864	-0.01	2000	
Mn	55	2	He	-0.150	-0.150	-30.29	377	-0.04	2000	
Fe	56	2	He	1.150	1.150	15.18	11527	0.01	200000	
Co	59	2	He	-0.009	-0.009	-32.74	73	-0.01	2000	
Ni	60	2	He	-0.403	-0.403	-3.29	220	-0.18	2000	
Cu	63	2	He	-1.172	-1.172	-1.68	1357	-0.09	2000	
Zn	66	2	He	-0.329	-0.329	-12.23	357	-0.09	2000	
As	75	2	He	0.002	0.002	675.07	74	0.00	2000	
Se	78	2	He	-0.547	-0.547	-37.38	23	-2.41	2000	
B	11	1	nogas	4.035	4.035	17.73	17319	0.02	2000	
Si	28	1	nogas	22.143	22.143	15.30	718950	0.00	2000	
Ca	43	1	nogas	8.169	8.169	58.16	940	0.87	200000	

Ca	44	1	nogas	-1393.867	-1393.867	-0.44	134751	-1.03	200000	
Fe	56	1	nogas	9.349	9.349	14.54	648702	0.00	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Se	77	1	nogas	-6.915	-6.915	-69.76	8396	-0.08	2000	
Se	82	1	nogas	-0.209	-0.209	-423.65	360	-0.06	2000	
Mo	95	1	nogas	0.024	0.024	215.77	404	0.01	2000	
Sn	118	1	nogas	-0.066	-0.066	-17.37	333	-0.02	2000	
Ba	137	1	nogas	0.036	0.036	28.79	247	0.01	2000	
Sb	121	2	He	0.048	0.048	139.05	517	0.01	2000	
La	139	1	nogas	-124.563	-124.563	-24.79	30	-415.21	2000	
Au	197	1	nogas	156.127	156.127	95.07	7	2341.90	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	444267	2.37	409846	108.40	70	125	
Ge	72	1	nogas	2123532	1.05	1928234	110.13	70	125	
In	115	1	nogas	2265676	1.87	2023507	111.97	70	125	
Bi	209	1	nogas	2113062	3.30	1855077	113.91	70	125	
Ge	72	2	He	341096	0.47	314233	108.55	70	125	

Sample Report

Sample Table

Sample Name	LCS-115813
Data File Name	045SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T12:47:47-05:00
Sample Type	Sample
Dilution	1
Comment	B115813 TCLP
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	48.157	48.157	2.28	134780	0.04	2000	
Na	23	1	nogas	4756.256	4756.256	1.89	60489141	0.01	200000	
Mg	24	1	nogas	4789.724	4789.724	1.85	40424351	0.01	200000	
Al	27	1	nogas	113.030	113.030	28.17	815318	0.01	2000	
K	39	1	nogas	4872.899	4872.899	1.06	50186063	0.01	200000	
Ti	47	1	nogas	150.324	150.324	1.77	154158	0.10	2000	
V	51	1	nogas	48.131	48.131	3.42	850783	0.01	2000	
Cr	52	1	nogas	51.775	51.775	3.21	712105	0.01	2000	
Mn	55	1	nogas	51.344	51.344	2.45	860346	0.01	2000	
Co	59	1	nogas	52.023	52.023	1.30	770812	0.01	2000	
Ni	60	1	nogas	51.770	51.770	1.84	177242	0.03	2000	
Cu	63	1	nogas	50.390	50.390	2.70	433961	0.01	2000	
Zn	66	1	nogas	51.765	51.765	2.63	135892	0.04	2000	
As	75	1	nogas	46.774	46.774	1.28	161656	0.03	2000	
Sr	88	1	nogas	103.072	103.072	2.07	1733852	0.01	2000	
Ag	107	1	nogas	51.498	51.498	2.15	508475	0.01	2000	
Cd	111	1	nogas	49.927	49.927	3.02	106884	0.05	2000	
Sb	121	1	nogas	52.207	52.207	2.45	455988	0.01	2000	
Tl	205	1	nogas	44.735	44.735	1.72	773174	0.01	2000	
Pb	208	1	nogas	48.704	48.704	2.44	1204302	0.00	2000	
U	238	1	nogas	99.065	99.065	4.35	2524630	0.00	2000	
[Pb]	206	1	nogas	48.518	48.518	2.60	290984	0.02	2000	
[Pb]	207	1	nogas	48.224	48.224	1.67	268654	0.02	2000	
Na	23	2	He	4745.440	4745.440	1.50	2965608	0.16	200000	
Mg	24	2	He	4929.590	4929.590	1.19	1555867	0.32	200000	
Al	27	2	He	99.336	99.336	6.23	14459	0.69	2000	
K	39	2	He	5230.654	5230.654	0.88	1318558	0.40	200000	
Ca	43	2	He	5135.161	5135.161	3.63	4352	117.99	200000	
Ca	44	2	He	4687.527	4687.527	0.19	69100	6.78	200000	
V	51	2	He	48.738	48.738	2.97	131320	0.04	2000	
Cr	52	2	He	49.061	49.061	3.14	168270	0.03	2000	
Mn	55	2	He	47.643	47.643	3.77	95983	0.05	2000	
Fe	56	2	He	4681.336	4681.336	1.48	13573907	0.03	200000	
Co	59	2	He	48.467	48.467	1.97	235181	0.02	2000	
Ni	60	2	He	48.770	48.770	1.06	64318	0.08	2000	
Cu	63	2	He	48.472	48.472	1.08	173940	0.03	2000	
Zn	66	2	He	50.895	50.895	0.53	34834	0.15	2000	
As	75	2	He	48.601	48.601	1.41	24053	0.20	2000	
Se	78	2	He	46.427	46.427	3.41	1497	3.10	2000	
B	11	1	nogas	452.528	452.528	2.61	762981	0.06	2000	
Si	28	1	nogas	5332.034	5332.034	4.45	23051937	0.02	2000	>LDR
Ca	43	1	nogas	4960.187	4960.187	0.85	99718	4.97	200000	
Ca	44	1	nogas	3727.270	3727.270	3.38	1718648	0.22	200000	
Fe	56	1	nogas	4903.141	4903.141	3.38	74012737	0.01	200000	

Se	77	1	nogas	32.369	32.369	10.52	13659	0.24	2000	
Se	82	1	nogas	48.194	48.194	4.21	7032	0.69	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	49.834	49.834	2.87	187411	0.03	2000	
Sn	118	1	nogas	96.985	96.985	1.91	552551	0.02	2000	
Ba	137	1	nogas	49.373	49.373	3.57	134325	0.04	2000	
Sb	121	2	He	51.267	51.267	0.73	86885	0.06	2000	
La	139	1	nogas	-77.737	-77.737	-33.11	67	-116.61	2000	
Au	197	1	nogas	67.778	67.778	222.43	13	508.34	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	394239	0.53	409846	96.19	70	125	
Ge	72	1	nogas	2031119	2.40	1928234	105.34	70	125	
In	115	1	nogas	2140192	1.29	2023507	105.77	70	125	
Bi	209	1	nogas	2045367	1.74	1855077	110.26	70	125	
Ge	72	2	He	334149	1.21	314233	106.34	70	125	

Sample Report

Sample Table

Sample Name	HS17041053-11
Data File Name	046SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T12:50:41-05:00
Sample Type	Sample
Dilution	1
Comment	B115813 TCLP
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.025	0.025	71.94	87	0.03	2000	
Na	23	1	nogas	135391.980	135391.980	2.49	1611176303	0.01	200000	
Mg	24	1	nogas	1608.110	1608.110	1.87	13108917	0.01	200000	
Al	27	1	nogas	85.158	85.158	3.12	630994	0.01	2000	
K	39	1	nogas	739.550	739.550	1.71	10818153	0.01	200000	
Ti	47	1	nogas	1.979	1.979	25.07	2228	0.09	2000	
V	51	1	nogas	-4.093	-4.093	-1.53	47526	-0.01	2000	
Cr	52	1	nogas	-0.140	-0.140	-13.77	13209	0.00	2000	
Mn	55	1	nogas	41.795	41.795	1.34	702356	0.01	2000	
Co	59	1	nogas	0.340	0.340	4.64	5411	0.01	2000	
Ni	60	1	nogas	0.023	0.023	274.03	2924	0.00	2000	
Cu	63	1	nogas	1.611	1.611	5.72	24584	0.01	2000	
Zn	66	1	nogas	2.477	2.477	5.37	8025	0.03	2000	
As	75	1	nogas	-0.406	-0.406	-70.40	28353	0.00	2000	
Sr	88	1	nogas	78.742	78.742	0.82	1326485	0.01	2000	
Ag	107	1	nogas	0.020	0.020	18.74	290	0.01	2000	
Cd	111	1	nogas	0.336	0.336	10.41	693	0.05	2000	
Sb	121	1	nogas	28.190	28.190	0.96	247559	0.01	2000	
Tl	205	1	nogas	0.327	0.327	61.19	5451	0.01	2000	
Pb	208	1	nogas	465.784	465.784	4.50	10681665	0.00	2000	
U	238	1	nogas	0.050	0.050	48.50	1333	0.00	2000	
[Pb]	206	1	nogas	491.771	491.771	4.94	2735196	0.02	2000	
[Pb]	207	1	nogas	451.748	451.748	4.63	2333349	0.02	2000	
Na	23	2	He	135095.216	135095.216	1.04	81976740	0.16	200000	
Mg	24	2	He	1644.573	1644.573	1.43	532625	0.31	200000	
Al	27	2	He	62.263	62.263	0.70	9590	0.65	2000	
K	39	2	He	868.495	868.495	1.27	274340	0.32	200000	
Ca	43	2	He	12332.485	12332.485	3.35	10693	115.33	200000	
Ca	44	2	He	12236.041	12236.041	1.43	181682	6.73	200000	
V	51	2	He	-0.390	-0.390	-8.59	533	-0.07	2000	
Cr	52	2	He	-0.111	-0.111	-26.08	3274	0.00	2000	
Mn	55	2	He	39.419	39.419	2.21	81537	0.05	2000	
Fe	56	2	He	32.910	32.910	3.12	105988	0.03	200000	
Co	59	2	He	0.321	0.321	12.36	1717	0.02	2000	
Ni	60	2	He	0.050	0.050	98.29	827	0.01	2000	
Cu	63	2	He	0.940	0.940	8.57	8886	0.01	2000	
Zn	66	2	He	2.150	2.150	8.63	2067	0.10	2000	
As	75	2	He	1.676	1.676	1.48	921	0.18	2000	
Se	78	2	He	-0.549	-0.549	-40.97	23	-2.42	2000	
B	11	1	nogas	50.950	50.950	6.07	94148	0.05	2000	
Si	28	1	nogas	798.518	798.518	4.75	3964988	0.02	2000	
Ca	43	1	nogas	12652.561	12652.561	0.53	253501	4.99	200000	
Ca	44	1	nogas	11522.713	11522.713	1.23	4144467	0.28	200000	
Fe	56	1	nogas	35.596	35.596	2.51	1015387	0.00	200000	

Se	77	1	nogas	-7.515	-7.515	-23.77	7959	-0.09	2000	
Se	82	1	nogas	-0.099	-0.099	-472.98	360	-0.03	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	0.281	0.281	35.94	1350	0.02	2000	
Sn	118	1	nogas	0.068	0.068	15.81	1030	0.01	2000	
Ba	137	1	nogas	65.400	65.400	4.23	170378	0.04	2000	
Sb	121	2	He	28.672	28.672	2.56	49987	0.06	2000	
La	139	1	nogas	5676.177	5676.177	5.22	4563	124.41	2000	>LDR
Au	197	1	nogas	-97.620	-97.620	-381.20	23	-418.37	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	396673	0.38	409846	96.79	70	125	
Ge	72	1	nogas	2033147	1.75	1928234	105.44	70	125	
In	115	1	nogas	2049935	1.28	2023507	101.31	70	125	
Bi	209	1	nogas	1899124	3.66	1855077	102.37	70	125	
Ge	72	2	He	342574	2.60	314233	109.02	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	047_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T12:53:39-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	98.407	2.710	277945	3.17	100	98.4	90	110	
Na	23	1	nogas	9987.943	2.848	127568515	0.69	10000	99.9	90	110	
Mg	24	1	nogas	9819.702	1.585	84672952	2.86	10000	98.2	90	110	
Al	27	1	nogas	133.656	3.173	991740	2.70	100	133.7	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	9985.074	1.325	102612111	2.32	10000	99.9	90	110	
Ti	47	1	nogas	100.643	1.755	107168	2.32	100	100.6	90	110	
V	51	1	nogas	97.623	2.585	1673334	3.24	100	97.6	90	110	
Cr	52	1	nogas	101.640	1.756	1435854	2.15	100	101.6	90	110	
Mn	55	1	nogas	101.284	0.632	1755940	2.53	100	101.3	90	110	
Co	59	1	nogas	102.004	3.484	1567222	1.40	100	102.0	90	110	
Ni	60	1	nogas	100.808	3.665	355192	1.77	100	100.8	90	110	
Cu	63	1	nogas	99.055	2.049	874130	1.17	100	99.1	90	110	
Zn	66	1	nogas	100.176	1.100	271372	1.66	100	100.2	90	110	
As	75	1	nogas	97.577	2.625	316651	1.38	100	97.6	90	110	
Sr	88	1	nogas	103.029	3.148	1797862	0.92	100	103.0	90	110	
Ag	107	1	nogas	101.488	1.026	1039798	1.80	100	101.5	90	110	
Cd	111	1	nogas	98.080	1.395	214703	1.71	100	98.1	90	110	
Sb	121	1	nogas	101.407	3.812	916657	1.64	100	101.4	90	110	
Tl	205	1	nogas	100.373	1.878	1703694	1.36	100	100.4	90	110	
Pb	208	1	nogas	99.159	2.208	2407459	0.43	100	99.2	90	110	
U	238	1	nogas	102.543	2.672	2567033	0.32	100	102.5	90	110	
[Pb]	206	1	nogas	99.313	2.165	584846	0.59	100	99.3	90	110	
[Pb]	207	1	nogas	99.193	2.612	542481	0.23	100	99.2	90	110	
Na	23	2	He	10094.451	0.796	6237655	2.04	10000	100.9	90	110	
Mg	24	2	He	10163.586	0.591	3266373	2.70	10000	101.6	90	110	
Al	27	2	He	97.580	2.458	14479	0.44	100	97.6	90	110	
K	39	2	He	11007.182	1.022	2701348	1.00	10000	110.1	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	10108.798	2.308	8709	3.01	10000	101.1	90	110	
Ca	44	2	He	9710.896	3.253	143589	1.19	10000	97.1	90	110	
V	51	2	He	99.296	2.419	270767	0.75	100	99.3	90	110	
Cr	52	2	He	100.021	4.500	345431	2.66	100	100.0	90	110	
Mn	55	2	He	98.256	4.740	200764	2.49	100	98.3	90	110	
Fe	56	2	He	9866.811	3.952	29110661	2.06	10000	98.7	90	110	
Co	59	2	He	98.715	2.931	487436	0.69	100	98.7	90	110	
Ni	60	2	He	98.348	1.580	131289	1.37	100	98.3	90	110	
Cu	63	2	He	98.917	0.963	355697	2.07	100	98.9	90	110	
Zn	66	2	He	100.362	1.826	69380	2.76	100	100.4	90	110	
As	75	2	He	99.632	2.921	50117	0.96	100	99.6	90	110	
Se	78	2	He	98.687	2.976	3194	0.81	100	98.7	90	110	
B	11	1	nogas	511.038	2.930	868474	3.36	500	102.2	90	110	
Si	28	1	nogas	5193.727	1.447	23327630	2.51	5000	103.9	90	110	
Ca	43	1	nogas	10011.045	4.236	207949	2.77	10000	100.1	90	110	
Ca	44	1	nogas	9105.280	2.896	3515270	0.84	10000	91.1	90	110	
Fe	56	1	nogas	9910.742	0.795	154755283	1.95	10000	99.1	90	110	
Se	77	1	nogas	95.941	2.456	23593	1.72	100	95.9	90	110	
Se	82	1	nogas	96.088	4.077	14159	2.47	100	96.1	90	110	
Mo	95	1	nogas	100.918	2.841	393449	0.82	100	100.9	90	110	
Sn	118	1	nogas	98.453	0.479	573451	0.25	100	98.5	90	110	
Ba	137	1	nogas	97.642	1.455	271530	1.96	100	97.6	90	110	
Sb	121	2	He	101.546	2.168	174753	0.36	100	101.5	90	110	
Li	7	1	nogas	99.579	2.184	666355	2.53	100	99.6	90	110	
P	31	1	nogas	462.697	1.440	383821	1.65	500	92.5	90	110	
La	139	1	nogas	132.101	11.692	243	4.75	100	132.1	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	60.592	259.026	13	86.60	100	60.6	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	397883	0.48	409846	97.08	70	125	
Ge	72	1	nogas	2107433	2.66	1928234	109.29	70	125	
In	115	1	nogas	2187911	0.72	2023507	108.12	70	125	
Bi	209	1	nogas	2009114	2.67	1855077	108.30	70	125	

Ge	72	2	He	340273	2.44	314233	108.29	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	048_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T12:56:45-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.035	17.4	127	16.4	1	
Na	23	1	nogas	-12.202	-45.9	1863291	1.7	100	
Mg	24	1	nogas	2.881	18.7	33293	13.4	100	
Al	27	1	nogas	-6.079	-1.1	17999	0.4	5	
K	39	1	nogas	-24.800	-31.0	3729882	0.2	100	
Ti	47	1	nogas	-0.019	-140.5	183	13.7	2.5	
V	51	1	nogas	-1.613	-9.7	90633	1.3	2.5	
Cr	52	1	nogas	-0.220	-13.3	12822	2.3	2.5	
Mn	55	1	nogas	0.115	30.0	7905	5.7	2.5	
Co	59	1	nogas	0.028	21.2	830	9.4	2.5	
Ni	60	1	nogas	-0.692	-8.2	543	38.7	2.5	
Cu	63	1	nogas	-0.744	-7.0	5068	7.1	2.5	
Zn	66	1	nogas	-0.472	-4.2	380	12.1	2.5	
As	75	1	nogas	-0.850	-61.8	28627	3.4	2.5	
Sr	88	1	nogas	0.069	11.6	2020	6.9	2.5	
Ag	107	1	nogas	0.034	16.5	453	10.9	2.5	
Cd	111	1	nogas	0.029	25.1	70	24.7	1	
Sb	121	1	nogas	0.066	15.5	2885	4.3	2.5	
Tl	205	1	nogas	0.350	45.4	6308	48.2	1	
Pb	208	1	nogas	0.105	31.4	3314	28.8	2.5	
U	238	1	nogas	0.041	27.3	1203	27.9	2.5	
[Pb]	206	1	nogas	0.109	4.7	823	3.7	2.5	
[Pb]	207	1	nogas	0.115	51.3	817	44.7	2.5	
Na	23	2	He	-39.199	-16.8	144399	0.8	100	
Mg	24	2	He	2.127	39.6	1320	23.0	100	
Al	27	2	He	-3.380	-17.5	313	29.0	5	
K	39	2	He	19.495	16.8	71106	1.1	100	
Ca	43	2	He	25.070	122.9	40	66.1	100	
Ca	44	2	He	-84.654	-13.7	747	19.9	100	
V	51	2	He	-0.388	-3.5	544	4.2	2.5	
Cr	52	2	He	-0.090	-51.2	3380	1.8	2.5	
Mn	55	2	He	-0.133	-17.2	417	8.4	2.5	
Fe	56	2	He	2.582	8.7	16001	4.0	100	
Co	59	2	He	0.002	359.7	130	23.1	2.5	
Ni	60	2	He	-0.411	-10.9	213	30.1	2.5	
Cu	63	2	He	-1.114	-0.7	1587	4.1	2.5	
Zn	66	2	He	-0.719	-5.2	90	29.4	2.5	
As	75	2	He	0.061	73.2	106	21.0	2.5	
Se	78	2	He	-0.589	-12.3	22	11.6	2.5	
B	11	1	nogas	29.156	11.6	63886	9.4	10	CCB Main CR1 Failed
Si	28	1	nogas	7.641	23.1	663514	3.4	5	CCB Main CR1 Failed
Ca	43	1	nogas	14.136	77.3	1080	22.8	100	
Ca	44	1	nogas	-1407.834	-0.8	131826	1.7	100	
Fe	56	1	nogas	6.324	17.2	608729	0.9	100	
Se	77	1	nogas	1.198	257.2	9740	6.8	2.5	
Se	82	1	nogas	-0.329	-63.1	347	10.9	2.5	
Mo	95	1	nogas	0.229	12.3	1220	7.1	2.5	
Sn	118	1	nogas	0.060	33.4	1087	10.9	5	

Ba	137	1	nogas	0.007	214.0	160	25.0	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	0.074	22.9	570	8.0	2.5	
P	31	1	nogas	-39.089	-2.7	37348	2.8	10	
La	139	1	nogas	-120.576	-14.8	33	45.8	2.5	
Au	197	1	nogas	154.756	48.8	7	86.6	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	440143	2.60	409846	107.39	70	125	
Ge	72	1	nogas	2150300	2.25	1928234	111.52	70	125	
In	115	1	nogas	2248839	1.17	2023507	111.14	70	125	
Bi	209	1	nogas	2051592	3.80	1855077	110.59	70	125	
Ge	72	2	He	346319	2.97	314233	110.21	70	125	

Sample Report

Sample Table

Sample Name	HS17041260-01SD
Data File Name	053SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T13:11:22-05:00
Sample Type	Sample
Dilution	5
Comment	B115813 TCLP
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	-0.002	-0.008	-317.38	13	-0.01	2000	
Na	23	1	nogas	24255.298	121276.489	1.15	304529882	0.01	200000	
Mg	24	1	nogas	148.032	740.162	3.34	1272851	0.01	200000	
Al	27	1	nogas	-3.621	-18.107	-2.38	35135	-0.01	2000	
K	39	1	nogas	100.223	501.116	2.50	4942795	0.00	200000	
Ti	47	1	nogas	-0.021	-0.105	-122.55	180	-0.01	2000	
V	51	1	nogas	-1.104	-5.519	-10.29	98014	0.00	2000	
Cr	52	1	nogas	0.020	0.101	126.70	16084	0.00	2000	
Mn	55	1	nogas	13.145	65.723	3.33	235223	0.01	2000	
Co	59	1	nogas	0.182	0.908	5.18	3204	0.01	2000	
Ni	60	1	nogas	-0.162	-0.808	-12.64	2410	-0.01	2000	
Cu	63	1	nogas	0.010	0.052	686.03	11671	0.00	2000	
Zn	66	1	nogas	1530.447	7652.237	0.87	4165636	0.04	2000	
As	75	1	nogas	0.694	3.472	25.35	32947	0.00	2000	
Sr	88	1	nogas	26.786	133.929	2.04	472953	0.01	2000	
Ag	107	1	nogas	0.000	0.001	4307.65	100	0.00	2000	
Cd	111	1	nogas	2.254	11.268	2.29	5028	0.04	2000	
Sb	121	1	nogas	0.444	2.220	11.68	6298	0.01	2000	
Tl	205	1	nogas	0.002	0.010	39.58	207	0.00	2000	
Pb	208	1	nogas	2.664	13.318	0.82	68068	0.00	2000	
U	238	1	nogas	0.017	0.084	12.86	583	0.00	2000	
[Pb]	206	1	nogas	2.813	14.067	1.18	17427	0.02	2000	
[Pb]	207	1	nogas	2.612	13.062	2.49	15054	0.02	2000	
Na	23	2	He	24141.551	120707.757	2.39	14767671	0.16	200000	
Mg	24	2	He	149.342	746.712	2.94	48851	0.31	200000	
Al	27	2	He	-2.237	-11.185	-10.26	470	-0.48	2000	
K	39	2	He	144.159	720.797	0.90	100948	0.14	200000	
Ca	43	2	He	10804.014	54020.071	5.50	9356	115.48	200000	
Ca	44	2	He	11161.475	55807.373	1.71	165706	6.74	200000	
V	51	2	He	-0.351	-1.754	-5.49	639	-0.05	2000	
Cr	52	2	He	-0.020	-0.099	-146.76	3584	0.00	2000	
Mn	55	2	He	12.283	61.413	1.69	25852	0.05	2000	
Fe	56	2	He	1.655	8.273	12.55	13055	0.01	200000	
Co	59	2	He	0.144	0.719	7.47	833	0.02	2000	
Ni	60	2	He	0.034	0.169	164.62	803	0.00	2000	
Cu	63	2	He	-0.462	-2.312	-17.43	3884	-0.01	2000	
Zn	66	2	He	1582.508	7912.539	2.14	1091388	0.14	2000	
As	75	2	He	0.013	0.063	333.07	80	0.02	2000	
Se	78	2	He	-0.717	-3.583	-15.51	17	-4.13	2000	
B	11	1	nogas	10.171	50.855	7.70	28593	0.04	2000	
Si	28	1	nogas	249.914	1249.572	3.63	1726812	0.01	2000	
Ca	43	1	nogas	11544.191	57720.953	1.64	242245	4.77	200000	
Ca	44	1	nogas	10314.653	51573.265	2.18	3945866	0.26	200000	
Fe	56	1	nogas	49.750	248.752	3.38	1285637	0.00	200000	

Se	77	1	nogas	11.891	59.454	7.19	11241	0.11	2000	
Se	82	1	nogas	-0.119	-0.594	-142.76	373	-0.03	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	0.086	0.432	25.05	650	0.01	2000	
Sn	118	1	nogas	-0.031	-0.154	-40.50	537	-0.01	2000	
Ba	137	1	nogas	13.691	68.455	1.08	38899	0.04	2000	
Sb	121	2	He	0.447	2.234	18.27	1207	0.04	2000	
La	139	1	nogas	240.148	1200.742	15.74	340	70.63	2000	
Au	197	1	nogas	113.598	567.988	113.89	10	1135.98	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	439961	1.00	409846	107.35	70	125	
Ge	72	1	nogas	2129107	1.68	1928234	110.42	70	125	
In	115	1	nogas	2228573	1.48	2023507	110.13	70	125	
Bi	209	1	nogas	2092470	1.78	1855077	112.80	70	125	
Ge	72	2	He	342144	1.40	314233	108.88	70	125	

Sample Report

Sample Table

Sample Name	HS17041260-01MS
Data File Name	054SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T13:14:22-05:00
Sample Type	Sample
Dilution	1
Comment	B115813 TCLP
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	51.061	51.061	3.95	153498	0.03	2000	
Na	23	1	nogas	127932.951	127932.951	2.02	1694254238	0.01	200000	
Mg	24	1	nogas	5426.895	5426.895	1.67	49209482	0.01	200000	
Al	27	1	nogas	93.324	93.324	1.86	750961	0.01	2000	
K	39	1	nogas	5305.846	5305.846	0.90	59549022	0.01	200000	
Ti	47	1	nogas	149.014	149.014	0.47	167587	0.09	2000	
V	51	1	nogas	45.856	45.856	0.71	894834	0.01	2000	
Cr	52	1	nogas	50.143	50.143	1.60	757057	0.01	2000	
Mn	55	1	nogas	117.072	117.072	0.58	2143680	0.01	2000	
Co	59	1	nogas	50.661	50.661	0.89	823135	0.01	2000	
Ni	60	1	nogas	51.465	51.465	0.55	193244	0.03	2000	
Cu	63	1	nogas	52.101	52.101	1.13	491740	0.01	2000	
Zn	66	1	nogas	8057.471	8057.471	0.34	22929722	0.04	2000	>LDR
As	75	1	nogas	47.966	47.966	0.75	180949	0.03	2000	
Sr	88	1	nogas	239.790	239.790	1.36	4422801	0.01	2000	
Ag	107	1	nogas	48.688	48.688	0.85	527244	0.01	2000	
Cd	111	1	nogas	60.671	60.671	0.84	139632	0.04	2000	
Sb	121	1	nogas	54.625	54.625	0.92	523137	0.01	2000	
Tl	205	1	nogas	45.792	45.792	2.90	831539	0.01	2000	
Pb	208	1	nogas	56.757	56.757	2.66	1474682	0.00	2000	
U	238	1	nogas	105.866	105.866	0.95	2836219	0.00	2000	
[Pb]	206	1	nogas	56.886	56.886	2.68	358484	0.02	2000	
[Pb]	207	1	nogas	55.916	55.916	2.80	327267	0.02	2000	
Na	23	2	He	129731.935	129731.935	3.18	82250022	0.16	200000	
Mg	24	2	He	5707.171	5707.171	3.91	1928969	0.30	200000	
Al	27	2	He	101.051	101.051	1.24	15750	0.64	2000	
K	39	2	He	6253.531	6253.531	1.48	1563415	0.40	200000	
Ca	43	2	He	63507.488	63507.488	1.42	57461	110.52	200000	
Ca	44	2	He	63603.298	63603.298	1.51	978278	6.50	200000	
V	51	2	He	49.358	49.358	2.64	142454	0.03	2000	
Cr	52	2	He	49.874	49.874	4.61	183154	0.03	2000	
Mn	55	2	He	115.043	115.043	2.49	247303	0.05	2000	
Fe	56	2	He	4733.091	4733.091	2.41	14700859	0.03	200000	
Co	59	2	He	50.115	50.115	2.18	260466	0.02	2000	
Ni	60	2	He	50.115	50.115	3.12	70773	0.07	2000	
Cu	63	2	He	52.777	52.777	1.89	202348	0.03	2000	
Zn	66	2	He	8167.238	8167.238	0.45	5891296	0.14	2000	>LDR
As	75	2	He	50.096	50.096	3.16	26552	0.19	2000	
Se	78	2	He	51.055	51.055	4.02	1760	2.90	2000	
B	11	1	nogas	500.717	500.717	1.91	906172	0.06	2000	
Si	28	1	nogas	6456.518	6456.518	0.33	30485595	0.02	2000	>LDR
Ca	43	1	nogas	65171.658	65171.658	1.28	1426701	4.57	200000	
Ca	44	1	nogas	65271.255	65271.255	0.80	22837419	0.29	200000	
Fe	56	1	nogas	4676.691	4676.691	0.56	77452141	0.01	200000	

Se	77	1	nogas	35.009	35.009	2.23	15380	0.23	2000	
Se	82	1	nogas	48.675	48.675	3.24	7785	0.63	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	49.923	49.923	0.94	205914	0.02	2000	
Sn	118	1	nogas	96.674	96.674	2.31	591938	0.02	2000	
Ba	137	1	nogas	124.406	124.406	0.94	363695	0.03	2000	
Sb	121	2	He	54.942	54.942	2.50	99690	0.06	2000	
La	139	1	nogas	2158.446	2158.446	12.48	2034	106.14	2000	>LDR
Au	197	1	nogas	157.881	157.881	92.09	7	2368.21	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	423822	3.02	409846	103.41	70	125	
Ge	72	1	nogas	2226780	0.89	1928234	115.48	70	125	
In	115	1	nogas	2300540	1.95	2023507	113.69	70	125	
Bi	209	1	nogas	2149305	1.79	1855077	115.86	70	125	
Ge	72	2	He	358026	2.33	314233	113.94	70	125	

Sample Report

Sample Table

Sample Name	HS17041260-01MSD
Data File Name	055SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T13:17:18-05:00
Sample Type	Sample
Dilution	1
Comment	B115813 TCLP
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	53.178	53.178	2.25	153827	0.03	2000	
Na	23	1	nogas	133152.924	133152.924	1.11	1692971405	0.01	200000	
Mg	24	1	nogas	5765.765	5765.765	1.32	50197470	0.01	200000	
Al	27	1	nogas	97.401	97.401	2.85	763498	0.01	2000	
K	39	1	nogas	5376.820	5376.820	1.20	58930574	0.01	200000	
Ti	47	1	nogas	151.314	151.314	2.63	166232	0.09	2000	
V	51	1	nogas	46.864	46.864	1.88	890828	0.01	2000	
Cr	52	1	nogas	52.352	52.352	1.52	771466	0.01	2000	
Mn	55	1	nogas	118.902	118.902	1.15	2127503	0.01	2000	
Co	59	1	nogas	52.336	52.336	1.80	831172	0.01	2000	
Ni	60	1	nogas	53.018	53.018	2.29	194501	0.03	2000	
Cu	63	1	nogas	53.166	53.166	1.31	490176	0.01	2000	
Zn	66	1	nogas	8114.440	8114.440	0.07	22566063	0.04	2000	>LDR
As	75	1	nogas	49.036	49.036	1.81	180089	0.03	2000	
Sr	88	1	nogas	238.356	238.356	1.69	4295776	0.01	2000	
Ag	107	1	nogas	50.171	50.171	1.42	530905	0.01	2000	
Cd	111	1	nogas	63.148	63.148	1.21	139012	0.05	2000	
Sb	121	1	nogas	54.743	54.743	0.47	512318	0.01	2000	
Tl	205	1	nogas	48.414	48.414	1.59	845172	0.01	2000	
Pb	208	1	nogas	58.954	58.954	1.91	1472485	0.00	2000	
U	238	1	nogas	106.755	106.755	2.51	2748915	0.00	2000	
[Pb]	206	1	nogas	59.507	59.507	1.69	360495	0.02	2000	
[Pb]	207	1	nogas	58.368	58.368	1.30	328436	0.02	2000	
Na	23	2	He	132733.949	132733.949	2.25	84188794	0.16	200000	
Mg	24	2	He	5832.434	5832.434	2.66	1972370	0.30	200000	
Al	27	2	He	107.915	107.915	4.37	16772	0.64	2000	
K	39	2	He	6419.272	6419.272	1.93	1603090	0.40	200000	
Ca	43	2	He	64341.530	64341.530	1.31	58236	110.48	200000	
Ca	44	2	He	64593.706	64593.706	1.38	993842	6.50	200000	
V	51	2	He	50.314	50.314	2.28	145232	0.03	2000	
Cr	52	2	He	49.731	49.731	3.14	182739	0.03	2000	
Mn	55	2	He	114.858	114.858	2.35	246990	0.05	2000	
Fe	56	2	He	4740.984	4740.984	0.66	14732125	0.03	200000	
Co	59	2	He	50.375	50.375	1.74	261943	0.02	2000	
Ni	60	2	He	51.232	51.232	1.09	72365	0.07	2000	
Cu	63	2	He	52.394	52.394	1.59	200995	0.03	2000	
Zn	66	2	He	8176.160	8176.160	0.95	5898649	0.14	2000	>LDR
As	75	2	He	52.155	52.155	1.69	27653	0.19	2000	
Se	78	2	He	49.922	49.922	1.68	1722	2.90	2000	
B	11	1	nogas	557.728	557.728	4.94	969857	0.06	2000	
Si	28	1	nogas	6582.169	6582.169	2.40	30355834	0.02	2000	>LDR
Ca	43	1	nogas	65364.462	65364.462	1.29	1398555	4.67	200000	
Ca	44	1	nogas	65713.448	65713.448	1.00	22468344	0.29	200000	
Fe	56	1	nogas	4842.427	4842.427	1.82	78356983	0.01	200000	

Se	77	1	nogas	40.681	40.681	9.14	15898	0.26	2000	
Se	82	1	nogas	48.782	48.782	4.64	7629	0.64	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	51.588	51.588	2.06	207875	0.02	2000	
Sn	118	1	nogas	99.473	99.473	1.42	582563	0.02	2000	
Ba	137	1	nogas	128.956	128.956	1.83	360429	0.04	2000	
Sb	121	2	He	56.179	56.179	2.19	101963	0.06	2000	
La	139	1	nogas	1932.443	1932.443	3.78	1757	110.00	2000	>LDR
Au	197	1	nogas	24.215	24.215	319.73	17	145.29	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	407495	0.16	409846	99.43	70	125	
Ge	72	1	nogas	2176075	2.40	1928234	112.85	70	125	
In	115	1	nogas	2199939	2.13	2023507	108.72	70	125	
Bi	209	1	nogas	2065858	1.75	1855077	111.36	70	125	
Ge	72	2	He	358059	0.73	314233	113.95	70	125	

Sample Report

Sample Table

Sample Name	HS17041260-01PDS
Data File Name	056SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T13:20:14-05:00
Sample Type	Sample
Dilution	1
Comment	B115813 TCLP
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	88.525	88.525	2.18	290894	0.03	2000	
Na	23	1	nogas	126564.200	126564.200	1.91	1736588305	0.01	200000	
Mg	24	1	nogas	9494.658	9494.658	1.30	89209189	0.01	200000	
Al	27	1	nogas	82.714	82.714	2.86	702669	0.01	2000	
K	39	1	nogas	9321.462	9321.462	0.96	106039265	0.01	200000	
Ti	47	1	nogas	92.566	92.566	1.14	108813	0.09	2000	
V	51	1	nogas	86.474	86.474	1.17	1650625	0.01	2000	
Cr	52	1	nogas	93.494	93.494	0.94	1459560	0.01	2000	
Mn	55	1	nogas	152.254	152.254	1.61	2910210	0.01	2000	
Co	59	1	nogas	94.276	94.276	1.21	1599532	0.01	2000	
Ni	60	1	nogas	91.972	91.972	1.66	358083	0.03	2000	
Cu	63	1	nogas	92.269	92.269	2.24	899618	0.01	2000	
Zn	66	1	nogas	7451.088	7451.088	1.19	22147411	0.03	2000	>LDR
As	75	1	nogas	90.284	90.284	1.94	326005	0.03	2000	
Sr	88	1	nogas	133.149	133.149	5.04	2563549	0.01	2000	
Ag	107	1	nogas	91.548	91.548	1.91	1035589	0.01	2000	
Cd	111	1	nogas	103.595	103.595	1.77	244656	0.04	2000	
Sb	121	1	nogas	85.223	85.223	4.00	850598	0.01	2000	
Tl	205	1	nogas	91.684	91.684	2.23	1695158	0.01	2000	
Pb	208	1	nogas	98.654	98.654	1.85	2609574	0.00	2000	
U	238	1	nogas	0.137	0.137	24.79	3877	0.00	2000	
[Pb]	206	1	nogas	97.658	97.658	2.60	626510	0.02	2000	
[Pb]	207	1	nogas	97.441	97.441	1.91	580589	0.02	2000	
Na	23	2	He	122398.405	122398.405	0.79	84280970	0.15	200000	
Mg	24	2	He	9460.182	9460.182	1.73	3471701	0.27	200000	
Al	27	2	He	93.042	93.042	3.28	15821	0.59	2000	
K	39	2	He	11960.589	11960.589	1.79	2929575	0.41	200000	
Ca	43	2	He	62768.531	62768.531	1.78	61651	101.81	200000	
Ca	44	2	He	63585.114	63585.114	0.83	1062024	5.99	200000	
V	51	2	He	90.185	90.185	0.44	281151	0.03	2000	
Cr	52	2	He	87.843	87.843	3.47	347061	0.03	2000	
Mn	55	2	He	146.169	146.169	3.44	340835	0.04	2000	
Fe	56	2	He	8449.853	8449.853	4.23	28475496	0.03	200000	
Co	59	2	He	90.935	90.935	4.47	512782	0.02	2000	
Ni	60	2	He	90.561	90.561	3.09	138125	0.07	2000	
Cu	63	2	He	94.485	94.485	2.32	388257	0.02	2000	
Zn	66	2	He	7633.211	7633.211	1.48	5976257	0.13	2000	>LDR
As	75	2	He	93.850	93.850	0.42	53947	0.17	2000	
Se	78	2	He	94.526	94.526	4.29	3496	2.70	2000	
B	11	1	nogas	44.518	44.518	8.86	97154	0.05	2000	
Si	28	1	nogas	1253.279	1253.279	2.18	6728073	0.02	2000	
Ca	43	1	nogas	64725.647	64725.647	2.00	1479747	4.37	200000	
Ca	44	1	nogas	64668.937	64668.937	1.98	23634638	0.27	200000	
Fe	56	1	nogas	8717.623	8717.623	0.85	150322758	0.01	200000	

Se	77	1	nogas	73.908	73.908	3.09	22445	0.33	2000	
Se	82	1	nogas	94.359	94.359	7.03	15354	0.61	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	92.810	92.810	3.37	399364	0.02	2000	
Sn	118	1	nogas	0.123	0.123	39.15	1530	0.01	2000	
Ba	137	1	nogas	162.779	162.779	1.35	488241	0.03	2000	
Sb	121	2	He	84.984	84.984	2.75	167143	0.05	2000	
La	139	1	nogas	1880.062	1880.062	0.34	1837	102.35	2000	>LDR
Au	197	1	nogas	160.121	160.121	88.38	7	2401.81	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	462782	2.84	409846	112.92	70	125	
Ge	72	1	nogas	2326363	3.48	1928234	120.65	70	125	
In	115	1	nogas	2360343	0.72	2023507	116.65	70	125	
Bi	209	1	nogas	2188022	1.88	1855077	117.95	70	125	
Ge	72	2	He	388651	2.14	314233	123.68	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	059_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T13:29:17-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	99.482	1.352	322235	0.36	100	99.5	90	110	
Na	23	1	nogas	10176.491	3.763	142658678	1.81	10000	101.8	90	110	
Mg	24	1	nogas	10132.066	0.370	95920040	1.85	10000	101.3	90	110	
Al	27	1	nogas	86.494	3.461	729652	2.19	100	86.5	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10075.706	1.461	113919140	1.52	10000	100.8	90	110	
Ti	47	1	nogas	102.591	1.315	120225	0.65	100	102.6	90	110	
V	51	1	nogas	100.372	1.511	1889816	1.15	100	100.4	90	110	
Cr	52	1	nogas	104.616	1.521	1626030	0.34	100	104.6	90	110	
Mn	55	1	nogas	101.879	0.844	1943681	0.52	100	101.9	90	110	
Co	59	1	nogas	101.057	4.542	1710268	5.67	100	101.1	90	110	
Ni	60	1	nogas	99.690	3.125	386868	3.94	100	99.7	90	110	
Cu	63	1	nogas	98.593	0.764	957918	1.88	100	98.6	90	110	
Zn	66	1	nogas	103.253	0.488	307810	0.87	100	103.3	90	110	
As	75	1	nogas	104.494	1.723	370883	0.51	100	104.5	90	110	
Sr	88	1	nogas	103.389	1.256	1986371	0.62	100	103.4	90	110	
Ag	107	1	nogas	102.801	2.307	1159220	2.24	100	102.8	90	110	
Cd	111	1	nogas	101.164	0.633	241284	1.86	100	101.2	90	110	
Sb	121	1	nogas	104.016	1.697	1035223	1.11	100	104.0	90	110	
Tl	205	1	nogas	101.184	1.752	1918880	0.84	100	101.2	90	110	
Pb	208	1	nogas	102.145	0.415	2771429	1.30	100	102.1	90	110	
U	238	1	nogas	106.174	0.502	2970605	1.40	100	106.2	90	110	
[Pb]	206	1	nogas	100.844	0.307	663661	1.31	100	100.8	90	110	
[Pb]	207	1	nogas	101.075	1.227	617737	0.74	100	101.1	90	110	
Na	23	2	He	10077.752	0.881	6915518	1.36	10000	100.8	90	110	
Mg	24	2	He	10056.667	1.142	3588585	1.43	10000	100.6	90	110	
Al	27	2	He	97.131	1.394	16014	2.05	100	97.1	90	110	
K	39	2	He	12197.770	0.583	2986352	0.57	10000	122.0	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	10033.582	5.089	9596	4.18	10000	100.3	90	110	
Ca	44	2	He	9711.676	1.491	159514	0.71	10000	97.1	90	110	
V	51	2	He	98.754	0.330	299123	0.60	100	98.8	90	110	
Cr	52	2	He	98.916	1.131	379586	0.91	100	98.9	90	110	
Mn	55	2	He	97.835	2.384	222106	1.68	100	97.8	90	110	
Fe	56	2	He	9854.067	1.959	32297060	1.23	10000	98.5	90	110	
Co	59	2	He	97.543	0.606	535038	0.39	100	97.5	90	110	
Ni	60	2	He	96.980	1.585	143785	1.24	100	97.0	90	110	
Cu	63	2	He	97.674	0.974	390104	1.47	100	97.7	90	110	
Zn	66	2	He	101.493	2.117	77898	1.99	100	101.5	90	110	
As	75	2	He	101.861	0.317	56917	0.95	100	101.9	90	110	
Se	78	2	He	100.306	2.013	3605	1.73	100	100.3	90	110	
B	11	1	nogas	535.796	0.891	1043800	0.80	500	107.2	90	110	
Si	28	1	nogas	5386.535	2.588	26597983	1.71	5000	107.7	90	110	
Ca	43	1	nogas	10154.404	1.688	232270	2.71	10000	101.5	90	110	
Ca	44	1	nogas	9122.152	2.150	3876696	3.04	10000	91.2	90	110	
Fe	56	1	nogas	10103.856	1.471	173618825	0.41	10000	101.0	90	110	
Se	77	1	nogas	118.026	4.781	29568	1.94	100	118.0	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	101.392	2.094	16428	2.32	100	101.4	90	110	
Mo	95	1	nogas	100.573	0.638	431722	1.44	100	100.6	90	110	
Sn	118	1	nogas	100.584	2.446	638171	1.22	100	100.6	90	110	
Ba	137	1	nogas	100.660	1.214	304945	1.30	100	100.7	90	110	
Sb	121	2	He	103.454	1.822	197727	1.11	100	103.5	90	110	
Li	7	1	nogas	99.109	1.070	760821	0.15	100	99.1	90	110	
P	31	1	nogas	480.917	1.557	436317	0.73	500	96.2	90	110	
La	139	1	nogas	123.349	61.604	257	25.94	100	123.3	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	201.655	34.501	3	173.21	100	201.7	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	456385	1.14	409846	111.36	70	125	
Ge	72	1	nogas	2319265	1.35	1928234	120.28	70	125	
In	115	1	nogas	2383743	1.24	2023507	117.80	70	125	
Bi	209	1	nogas	2244365	1.05	1855077	120.98	70	125	

Ge	72	2	He	377826	0.92	314233	120.24	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	060_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T13:32:24-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.033	57.2	133	49.9	1	
Na	23	1	nogas	-4.278	-142.9	2116289	2.4	100	
Mg	24	1	nogas	3.555	20.8	42233	15.5	100	
Al	27	1	nogas	-6.264	-1.0	18210	3.4	5	
K	39	1	nogas	-19.350	-72.5	4129572	0.7	100	
Ti	47	1	nogas	0.005	308.6	230	11.5	2.5	
V	51	1	nogas	-0.814	-20.6	113124	0.6	2.5	
Cr	52	1	nogas	-0.206	-6.8	14206	2.0	2.5	
Mn	55	1	nogas	0.141	18.5	9136	2.5	2.5	
Co	59	1	nogas	0.028	51.4	893	24.3	2.5	
Ni	60	1	nogas	-0.691	-4.2	593	16.5	2.5	
Cu	63	1	nogas	-0.792	-2.3	5068	2.3	2.5	
Zn	66	1	nogas	-0.128	-44.7	1443	8.9	2.5	
As	75	1	nogas	1.819	9.6	39988	3.1	2.5	
Sr	88	1	nogas	0.070	22.5	2207	11.0	2.5	
Ag	107	1	nogas	0.038	12.1	540	6.7	2.5	
Cd	111	1	nogas	0.022	35.3	60	33.3	1	
Sb	121	1	nogas	0.277	6.0	5268	5.8	2.5	
Tl	205	1	nogas	0.355	37.7	7232	37.4	1	
Pb	208	1	nogas	0.272	13.3	8495	12.7	2.5	
U	238	1	nogas	0.046	37.4	1523	34.1	2.5	
[Pb]	206	1	nogas	0.281	18.5	2120	17.6	2.5	
[Pb]	207	1	nogas	0.274	12.5	1937	11.8	2.5	
Na	23	2	He	-43.955	-22.9	155564	1.8	100	
Mg	24	2	He	1.638	13.4	1270	4.9	100	
Al	27	2	He	-4.053	-11.4	237	28.1	5	
K	39	2	He	35.125	9.6	74847	1.1	100	
Ca	43	2	He	31.575	123.2	50	72.1	100	
Ca	44	2	He	-84.028	-8.2	837	15.9	100	
V	51	2	He	-0.343	-2.8	735	4.9	2.5	
Cr	52	2	He	-0.172	-30.3	3410	7.9	2.5	
Mn	55	2	He	-0.170	-18.3	373	17.4	2.5	
Fe	56	2	He	2.642	5.1	17793	1.1	100	
Co	59	2	He	0.014	12.0	210	4.8	2.5	
Ni	60	2	He	-0.401	-10.9	247	24.8	2.5	
Cu	63	2	He	-1.144	-1.8	1623	4.1	2.5	
Zn	66	2	He	-0.348	-6.0	383	4.0	2.5	
As	75	2	He	0.121	26.8	150	14.6	2.5	
Se	78	2	He	-0.351	-31.5	32	11.7	2.5	
B	11	1	nogas	26.426	11.6	64221	9.4	10	CCB Main CR1 Failed
Si	28	1	nogas	8.245	131.7	726030	4.3	5	CCB Main CR1 Failed
Ca	43	1	nogas	17.932	51.3	1260	14.5	100	
Ca	44	1	nogas	-1462.657	-0.7	124201	0.7	100	
Fe	56	1	nogas	8.709	38.1	704991	5.4	100	
Se	77	1	nogas	16.762	28.3	13192	5.7	2.5	CCB Main CR1 Failed
Se	82	1	nogas	-0.481	-48.4	353	9.1	2.5	
Mo	95	1	nogas	0.204	6.7	1227	4.0	2.5	
Sn	118	1	nogas	0.104	18.7	1507	9.0	5	

Ba	137	1	nogas	0.027	80.6	243	28.9	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	0.382	42.9	1217	24.9	2.5	
P	31	1	nogas	-34.640	-5.0	44173	0.5	10	
La	139	1	nogas	-100.456	-23.8	57	40.8	2.5	
Au	197	1	nogas	50.347	133.5	17	34.6	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	480474	1.97	409846	117.23	70	125	
Ge	72	1	nogas	2347213	3.07	1928234	121.73	70	125	
In	115	1	nogas	2514579	0.51	2023507	124.27	70	125	
Bi	209	1	nogas	2343986	0.93	1855077	126.36	70	125	ISTD Failed
Ge	72	2	He	380855	2.61	314233	121.20	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	071_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T14:04:50-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	100.258	5.172	308837	2.38	100	100.3	90	110	
Na	23	1	nogas	10494.410	4.639	136039399	2.23	10000	104.9	90	110	
Mg	24	1	nogas	10293.115	4.346	90137242	3.61	10000	102.9	90	110	
Al	27	1	nogas	87.231	0.458	694179	0.38	100	87.2	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10202.519	2.573	108831661	2.51	10000	102.0	90	110	
Ti	47	1	nogas	100.338	2.659	110999	2.64	100	100.3	90	110	
V	51	1	nogas	107.518	1.324	1902390	1.20	100	107.5	90	110	
Cr	52	1	nogas	102.972	1.682	1511077	1.68	100	103.0	90	110	
Mn	55	1	nogas	103.119	2.376	1856947	2.37	100	103.1	90	110	
Co	59	1	nogas	103.039	0.398	1645377	0.40	100	103.0	90	110	
Ni	60	1	nogas	99.158	1.011	363166	1.00	100	99.2	90	110	
Cu	63	1	nogas	99.325	0.663	910729	0.68	100	99.3	90	110	
Zn	66	1	nogas	103.557	0.602	291392	0.61	100	103.6	90	110	
As	75	1	nogas	109.498	0.871	365352	0.76	100	109.5	90	110	
Sr	88	1	nogas	104.492	3.471	1895044	3.49	100	104.5	90	110	
Ag	107	1	nogas	104.023	1.189	1107225	1.19	100	104.0	90	110	
Cd	111	1	nogas	100.153	1.818	230628	1.90	100	100.2	90	110	
Sb	121	1	nogas	105.264	0.749	988911	0.77	100	105.3	90	110	
Tl	205	1	nogas	100.474	1.838	1824940	1.22	100	100.5	90	110	
Pb	208	1	nogas	101.545	1.313	2638495	0.69	100	101.5	90	110	
U	238	1	nogas	106.774	3.051	2860839	2.78	100	106.8	90	110	
[Pb]	206	1	nogas	100.422	2.154	632879	1.57	100	100.4	90	110	
[Pb]	207	1	nogas	100.599	1.007	588849	0.45	100	100.6	90	110	
Na	23	2	He	10171.511	1.067	6356226	1.68	10000	101.7	90	110	
Mg	24	2	He	10192.077	1.515	3313012	2.43	10000	101.9	90	110	
Al	27	2	He	96.893	3.905	14550	3.03	100	96.9	90	110	
K	39	2	He	11505.125	1.628	2820546	1.59	10000	115.1	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	10153.379	3.206	8846	2.25	10000	101.5	90	110	
Ca	44	2	He	9908.336	2.219	148190	1.32	10000	99.1	90	110	
V	51	2	He	100.200	1.503	276408	0.68	100	100.2	90	110	
Cr	52	2	He	101.311	1.678	354019	1.22	100	101.3	90	110	
Mn	55	2	He	99.509	1.770	205785	2.08	100	99.5	90	110	
Fe	56	2	He	10196.360	1.072	30442414	1.25	10000	102.0	90	110	
Co	59	2	He	102.152	0.555	510400	1.46	100	102.2	90	110	
Ni	60	2	He	101.444	0.418	136973	1.38	100	101.4	90	110	
Cu	63	2	He	102.306	1.509	371940	2.30	100	102.3	90	110	
Zn	66	2	He	103.181	1.121	72125	0.84	100	103.2	90	110	
As	75	2	He	104.044	2.088	52947	1.48	100	104.0	90	110	
Se	78	2	He	103.178	1.645	3377	2.49	100	103.2	90	110	
B	11	1	nogas	550.603	6.916	1019485	4.13	500	110.1	90	110	CCV Main CR1-2 Failed
Si	28	1	nogas	5451.851	1.345	25405770	1.29	5000	109.0	90	110	
Ca	43	1	nogas	10119.481	1.778	218458	1.74	10000	101.2	90	110	
Ca	44	1	nogas	8982.763	1.013	3611888	0.81	10000	89.8	90	110	CCV Main CR1-2 Failed
Fe	56	1	nogas	10190.593	2.043	165295333	2.06	10000	101.9	90	110	
Se	77	1	nogas	148.249	3.036	32573	2.09	100	148.2	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	102.452	3.221	15664	3.15	100	102.5	90	110	
Mo	95	1	nogas	100.843	2.919	408583	2.93	100	100.8	90	110	
Sn	118	1	nogas	99.880	0.535	611982	0.44	100	99.9	90	110	
Ba	137	1	nogas	100.818	1.709	294910	1.79	100	100.8	90	110	
Sb	121	2	He	106.726	1.175	185788	0.42	100	106.7	90	110	
Li	7	1	nogas	99.962	2.978	730042	3.70	100	100.0	90	110	
P	31	1	nogas	481.977	1.098	412624	0.94	500	96.4	90	110	
La	139	1	nogas	83.374	79.201	213	27.46	100	83.4	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	117.244	106.092	10	100.00	100	117.2	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	434482	3.76	409846	106.01	70	125	
Ge	72	1	nogas	2189057	0.04	1928234	113.53	70	125	
In	115	1	nogas	2301571	0.25	2023507	113.74	70	125	
Bi	209	1	nogas	2149477	0.63	1855077	115.87	70	125	

Ge	72	2	He	344147	0.97	314233	109.52	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	072_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T14:07:56-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.038	51.4	147	45.4	1	
Na	23	1	nogas	-18.207	-17.1	1766416	1.0	100	
Mg	24	1	nogas	3.358	18.1	37118	14.3	100	
Al	27	1	nogas	-6.158	-1.4	17612	2.5	5	
K	39	1	nogas	4.656	104.0	4069007	0.4	100	
Ti	47	1	nogas	-0.024	-212.0	180	30.9	2.5	
V	51	1	nogas	3.443	3.7	174818	1.4	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	-0.112	-25.1	14506	2.6	2.5	
Mn	55	1	nogas	0.192	2.6	9373	1.4	2.5	
Co	59	1	nogas	0.028	47.0	837	25.6	2.5	
Ni	60	1	nogas	-0.705	-3.4	500	16.0	2.5	
Cu	63	1	nogas	-0.753	-1.6	5041	1.0	2.5	
Zn	66	1	nogas	-0.324	-6.3	793	6.2	2.5	
As	75	1	nogas	5.029	8.4	46704	1.7	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.081	14.2	2254	9.2	2.5	
Ag	107	1	nogas	0.031	20.0	430	14.5	2.5	
Cd	111	1	nogas	0.048	47.0	113	45.3	1	
Sb	121	1	nogas	0.045	33.5	2712	4.0	2.5	
Tl	205	1	nogas	0.368	44.1	6985	43.1	1	
Pb	208	1	nogas	0.123	18.9	3974	15.5	2.5	
U	238	1	nogas	0.043	34.3	1317	30.5	2.5	
[Pb]	206	1	nogas	0.116	24.1	920	19.6	2.5	
[Pb]	207	1	nogas	0.127	12.1	933	10.3	2.5	
Na	23	2	He	-50.718	-1.7	139104	0.7	100	
Mg	24	2	He	2.385	13.3	1417	6.9	100	
Al	27	2	He	-3.216	-16.9	340	23.0	5	
K	39	2	He	28.609	3.9	73287	0.4	100	
Ca	43	2	He	1.850	1227.2	20	100.0	100	
Ca	44	2	He	-84.607	-2.6	760	4.7	100	
V	51	2	He	-0.169	-5.0	1165	2.5	2.5	
Cr	52	2	He	-0.124	-28.6	3304	3.3	2.5	
Mn	55	2	He	-0.147	-12.3	393	9.6	2.5	
Fe	56	2	He	2.811	5.5	16895	2.2	100	
Co	59	2	He	0.016	37.9	207	15.6	2.5	
Ni	60	2	He	-0.356	-13.6	290	22.6	2.5	
Cu	63	2	He	-1.123	-0.4	1573	1.0	2.5	
Zn	66	2	He	-0.589	-1.2	183	3.1	2.5	
As	75	2	He	0.073	81.5	113	27.0	2.5	
Se	78	2	He	-0.374	-29.3	29	11.9	2.5	
B	11	1	nogas	26.566	15.2	63175	11.8	10	CCB Main CR1 Failed
Si	28	1	nogas	12.113	50.0	690380	4.3	5	CCB Main CR1 Failed
Ca	43	1	nogas	28.131	35.4	1387	15.0	100	
Ca	44	1	nogas	-1490.919	-0.3	105635	2.5	100	
Fe	56	1	nogas	14.392	11.1	744641	3.6	100	
Se	77	1	nogas	39.674	8.4	15721	4.1	2.5	CCB Main CR1 Failed
Se	82	1	nogas	-0.304	-105.8	353	12.8	2.5	
Mo	95	1	nogas	0.188	43.9	1070	29.9	2.5	
Sn	118	1	nogas	0.085	22.7	1257	9.6	5	

Ba	137	1	nogas	0.039	68.1	257	29.8	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	0.025	62.1	490	6.1	2.5	
P	31	1	nogas	-33.462	-4.2	41741	1.8	10	
La	139	1	nogas	-117.384	-29.9	37	83.3	2.5	
Au	197	1	nogas	160.078	88.4	7	173.2	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	471109	3.56	409846	114.95	70	125	
Ge	72	1	nogas	2172275	1.13	1928234	112.66	70	125	
In	115	1	nogas	2287918	0.52	2023507	113.07	70	125	
Bi	209	1	nogas	2187267	0.66	1855077	117.91	70	125	
Ge	72	2	He	350556	0.57	314233	111.56	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	083_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T14:40:45-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	94.090	3.381	301347	2.41	100	94.1	90	110	
Na	23	1	nogas	10480.680	2.036	133864240	1.11	10000	104.8	90	110	
Mg	24	1	nogas	10478.190	1.510	90392756	2.11	10000	104.8	90	110	
Al	27	1	nogas	103.130	25.879	801625	23.04	100	103.1	90	110	
K	39	1	nogas	10140.802	1.948	107285723	0.89	10000	101.4	90	110	
Ti	47	1	nogas	98.745	1.780	108321	0.82	100	98.7	90	110	
V	51	1	nogas	113.558	0.446	1986003	1.41	100	113.6	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	100.932	1.418	1469130	1.54	100	100.9	90	110	
Mn	55	1	nogas	103.383	0.775	1846320	1.77	100	103.4	90	110	
Co	59	1	nogas	100.593	2.144	1592840	1.64	100	100.6	90	110	
Ni	60	1	nogas	97.686	2.315	354813	1.78	100	97.7	90	110	
Cu	63	1	nogas	96.922	1.964	881506	1.23	100	96.9	90	110	
Zn	66	1	nogas	101.612	0.324	283577	1.01	100	101.6	90	110	
As	75	1	nogas	112.505	0.246	371399	0.79	100	112.5	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	103.701	2.396	1865024	2.44	100	103.7	90	110	
Ag	107	1	nogas	103.962	0.424	1097395	1.08	100	104.0	90	110	
Cd	111	1	nogas	101.211	1.793	227774	2.85	100	101.2	90	110	
Sb	121	1	nogas	104.263	0.965	971356	0.77	100	104.3	90	110	
Tl	205	1	nogas	100.173	1.468	1839561	1.77	100	100.2	90	110	
Pb	208	1	nogas	100.809	1.022	2648305	1.61	100	100.8	90	110	
U	238	1	nogas	105.028	0.505	2845104	1.04	100	105.0	90	110	
[Pb]	206	1	nogas	99.710	1.317	635345	1.81	100	99.7	90	110	
[Pb]	207	1	nogas	99.351	1.181	587959	1.68	100	99.4	90	110	
Na	23	2	He	10191.912	2.690	6314804	1.18	10000	101.9	90	110	
Mg	24	2	He	10215.532	2.899	3292076	0.61	10000	102.2	90	110	
Al	27	2	He	93.776	3.640	13992	3.28	100	93.8	90	110	
K	39	2	He	10887.346	1.439	2672662	1.40	10000	108.9	90	110	
Ca	43	2	He	10027.073	5.822	8662	4.77	10000	100.3	90	110	
Ca	44	2	He	9631.303	2.151	142979	3.82	10000	96.3	90	110	
V	51	2	He	99.839	3.106	273087	0.80	100	99.8	90	110	
Cr	52	2	He	99.974	4.227	346369	1.59	100	100.0	90	110	
Mn	55	2	He	98.050	4.717	200989	2.23	100	98.1	90	110	
Fe	56	2	He	9957.160	4.406	29468660	2.05	10000	99.6	90	110	
Co	59	2	He	100.428	2.899	497499	0.66	100	100.4	90	110	
Ni	60	2	He	98.338	2.452	131686	1.48	100	98.3	90	110	
Cu	63	2	He	99.345	1.680	358308	0.99	100	99.3	90	110	
Zn	66	2	He	102.293	1.268	70926	1.74	100	102.3	90	110	
As	75	2	He	101.439	2.642	51192	0.74	100	101.4	90	110	
Se	78	2	He	101.122	4.194	3282	1.55	100	101.1	90	110	
B	11	1	nogas	518.765	2.932	999895	3.74	500	103.8	90	110	
Si	28	1	nogas	5429.532	1.012	25095564	1.84	5000	108.6	90	110	
Ca	43	1	nogas	9939.662	0.664	212818	1.62	10000	99.4	90	110	
Ca	44	1	nogas	8760.357	3.806	3507692	2.75	10000	87.6	90	110	CCV Main CR1-2 Failed
Fe	56	1	nogas	9941.362	1.038	159934695	1.92	10000	99.4	90	110	
Se	77	1	nogas	186.258	1.447	38114	1.84	100	186.3	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	104.650	4.964	15858	4.69	100	104.7	90	110	
Mo	95	1	nogas	101.268	2.096	406866	1.79	100	101.3	90	110	
Sn	118	1	nogas	99.336	1.170	594773	1.55	100	99.3	90	110	
Ba	137	1	nogas	101.506	0.321	290203	2.61	100	101.5	90	110	
Sb	121	2	He	108.911	2.264	188002	0.33	100	108.9	90	110	
Li	7	1	nogas	98.677	1.522	749318	1.67	100	98.7	90	110	
P	31	1	nogas	465.446	2.095	397376	1.14	500	93.1	90	110	
La	139	1	nogas	147.748	38.629	263	17.95	100	147.7	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	76.522	95.117	13	43.30	100	76.5	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	451389	2.54	409846	110.14	70	125	
Ge	72	1	nogas	2170888	1.01	1928234	112.58	70	125	
In	115	1	nogas	2249537	2.69	2023507	111.17	70	125	
Bi	209	1	nogas	2173015	0.68	1855077	117.14	70	125	

Ge	72	2	He	341384	2.58	314233	108.64	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	084_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T14:43:51-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.023	29.5	97	23.9	1	
Na	23	1	nogas	-33.109	-4.2	1577381	1.1	100	
Mg	24	1	nogas	3.263	28.0	36251	20.7	100	
Al	27	1	nogas	-6.113	-1.3	18036	1.8	5	
K	39	1	nogas	-1.925	-325.5	4023337	0.5	100	
Ti	47	1	nogas	-0.026	-256.0	180	41.9	2.5	
V	51	1	nogas	11.188	5.7	303936	3.8	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	-0.100	-33.8	14763	2.6	2.5	
Mn	55	1	nogas	0.244	4.1	10347	1.3	2.5	
Co	59	1	nogas	0.020	44.0	710	19.1	2.5	
Ni	60	1	nogas	-0.706	-4.1	500	19.7	2.5	
Cu	63	1	nogas	-0.930	-2.0	3477	6.0	2.5	
Zn	66	1	nogas	-0.412	-5.4	553	11.5	2.5	
As	75	1	nogas	10.156	4.6	62552	2.7	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.069	2.1	2047	2.3	2.5	
Ag	107	1	nogas	0.029	36.6	410	27.2	2.5	
Cd	111	1	nogas	0.028	84.3	70	79.5	1	
Sb	121	1	nogas	0.011	78.8	2414	4.0	2.5	
Tl	205	1	nogas	0.385	51.7	7442	51.4	1	
Pb	208	1	nogas	0.084	22.7	3020	18.1	2.5	
U	238	1	nogas	0.044	31.1	1390	28.6	2.5	
[Pb]	206	1	nogas	0.076	28.1	677	21.5	2.5	
[Pb]	207	1	nogas	0.091	14.6	730	11.9	2.5	
Na	23	2	He	-78.544	-7.5	120818	2.1	100	
Mg	24	2	He	1.863	22.1	1233	10.5	100	
Al	27	2	He	-3.591	-4.4	283	7.3	5	
K	39	2	He	17.903	26.9	70724	1.6	100	
Ca	43	2	He	5.658	645.1	23	137.8	100	
Ca	44	2	He	-82.834	-6.8	780	11.0	100	
V	51	2	He	0.045	62.8	1747	3.9	2.5	
Cr	52	2	He	-0.275	-20.7	2750	7.9	2.5	
Mn	55	2	He	-0.114	-21.6	460	11.5	2.5	
Fe	56	2	He	2.322	6.7	15283	3.8	100	
Co	59	2	He	0.005	104.9	147	17.2	2.5	
Ni	60	2	He	-0.435	-6.4	180	20.0	2.5	
Cu	63	2	He	-1.265	-1.5	1047	7.2	2.5	
Zn	66	2	He	-0.663	-9.3	130	33.5	2.5	
As	75	2	He	0.158	25.0	156	12.6	2.5	
Se	78	2	He	-0.174	-225.8	35	36.9	2.5	
B	11	1	nogas	26.736	14.4	64492	12.2	10	CCB Main CR1 Failed
Si	28	1	nogas	20.868	41.7	733498	4.5	5	CCB Main CR1 Failed
Ca	43	1	nogas	27.773	7.2	1387	1.8	100	
Ca	44	1	nogas	-1546.594	-0.3	87589	0.6	100	
Fe	56	1	nogas	15.503	9.5	766380	1.8	100	
Se	77	1	nogas	71.027	5.5	20619	1.8	2.5	CCB Main CR1 Failed
Se	82	1	nogas	-0.476	-72.3	330	15.7	2.5	
Mo	95	1	nogas	0.361	12.7	1773	9.8	2.5	
Sn	118	1	nogas	0.094	45.8	1353	20.4	5	

Ba	137	1	nogas	0.041	10.1	270	3.7	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	-0.022	-106.3	403	10.3	2.5	
P	31	1	nogas	-35.376	-6.4	40595	3.8	10	
La	139	1	nogas	-104.101	-18.0	50	34.6	2.5	
Au	197	1	nogas	162.067	85.2	7	173.2	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	477646	0.53	409846	116.54	70	125	
Ge	72	1	nogas	2183981	1.31	1928234	113.26	70	125	
In	115	1	nogas	2363744	0.84	2023507	116.81	70	125	
Bi	209	1	nogas	2223321	0.97	1855077	119.85	70	125	
Ge	72	2	He	347623	0.87	314233	110.63	70	125	

Sample Report

Sample Table

Sample Name	HS17041053-15
Data File Name	093SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T15:10:42-05:00
Sample Type	Sample
Dilution	100
Comment	B115813 TCLP Pb
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	-0.002	-0.212	-77.02	13	-0.02	2000	
Na	23	1	nogas	1026.779	102677.905	0.86	15860588	0.01	200000	
Mg	24	1	nogas	11.660	1166.000	4.61	115200	0.01	200000	
Al	27	1	nogas	-4.277	-427.662	-7.33	33197	-0.01	2000	
K	39	1	nogas	-10.744	-1074.359	-10.24	4172785	0.00	200000	
Ti	47	1	nogas	0.025	2.520	429.51	250	0.01	2000	
V	51	1	nogas	17.484	1748.350	2.61	433005	0.00	2000	
Cr	52	1	nogas	0.115	11.458	37.21	18960	0.00	2000	
Mn	55	1	nogas	2.770	276.964	1.85	58966	0.00	2000	
Co	59	1	nogas	0.015	1.516	74.83	677	0.00	2000	
Ni	60	1	nogas	-0.756	-75.579	-1.03	340	-0.22	2000	
Cu	63	1	nogas	-0.697	-69.683	-2.44	5918	-0.01	2000	
Zn	66	1	nogas	-0.246	-24.568	-13.91	1080	-0.02	2000	
As	75	1	nogas	12.811	1281.134	1.95	74925	0.02	2000	
Sr	88	1	nogas	0.585	58.538	3.33	12078	0.00	2000	
Ag	107	1	nogas	-0.002	-0.161	-143.76	90	0.00	2000	
Cd	111	1	nogas	0.007	0.662	110.20	20	0.03	2000	
Sb	121	1	nogas	0.964	96.411	1.42	12014	0.01	2000	
Tl	205	1	nogas	-0.001	-0.078	-248.49	177	0.00	2000	
Pb	208	1	nogas	151.120	15111.977	1.54	4245796	0.00	2000	
U	238	1	nogas	-0.004	-0.379	-44.47	53	-0.01	2000	
[Pb]	206	1	nogas	158.518	15851.808	1.08	1080273	0.01	2000	
[Pb]	207	1	nogas	145.022	14502.210	1.89	917865	0.02	2000	
Na	23	2	He	917.760	91776.010	1.30	804755	0.11	200000	
Mg	24	2	He	10.596	1059.641	7.73	4501	0.24	200000	
Al	27	2	He	-2.136	-213.562	-24.21	540	-0.40	2000	
K	39	2	He	22.892	2289.198	15.44	71919	0.03	200000	
Ca	43	2	He	75.921	7592.137	20.01	93	81.34	200000	
Ca	44	2	He	-53.803	-5380.272	-29.02	1330	-4.05	200000	
V	51	2	He	0.152	15.214	22.43	2243	0.01	2000	
Cr	52	2	He	-0.222	-22.227	-49.49	3224	-0.01	2000	
Mn	55	2	He	2.189	218.945	2.84	5768	0.04	2000	
Fe	56	2	He	0.001	0.085	4674.61	9093	0.00	200000	
Co	59	2	He	0.014	1.437	45.97	213	0.01	2000	
Ni	60	2	He	-0.405	-40.483	-9.38	243	-0.17	2000	
Cu	63	2	He	-0.970	-97.042	-2.09	2317	-0.04	2000	
Zn	66	2	He	-0.597	-59.681	-8.15	193	-0.31	2000	
As	75	2	He	0.099	9.894	44.26	138	0.07	2000	
Se	78	2	He	-0.427	-42.676	-38.18	30	-1.44	2000	
B	11	1	nogas	16.161	1616.136	6.04	46224	0.03	2000	
Si	28	1	nogas	-25.099	-2509.922	-4.77	557338	0.00	2000	
Ca	43	1	nogas	54.929	5492.873	4.96	2090	2.63	200000	
Ca	44	1	nogas	-1532.242	-153224.249	-0.24	98008	-1.56	200000	
Fe	56	1	nogas	15.791	1579.114	4.59	818258	0.00	200000	
Se	77	1	nogas	86.014	8601.446	5.86	24324	0.35	2000	
Se	82	1	nogas	-0.260	-25.972	-198.89	383	-0.07	2000	

Mo	95	1	nogas	-0.019	-1.862	-107.11	257	-0.01	2000	
Sn	118	1	nogas	-0.032	-3.222	-65.43	577	-0.01	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ba	137	1	nogas	0.465	46.450	22.86	1593	0.03	2000	
Sb	121	2	He	0.913	91.301	4.37	2244	0.04	2000	
La	139	1	nogas	-84.062	-8406.240	-22.85	70	-120.09	2000	
Au	197	1	nogas	49.031	4903.099	136.16	17	294.19	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	511712	1.49	409846	124.85	70	125	
Ge	72	1	nogas	2316893	1.35	1928234	120.16	70	125	
In	115	1	nogas	2437364	1.57	2023507	120.45	70	125	
Bi	209	1	nogas	2324411	0.73	1855077	125.30	70	125	ISTD Failed
Ge	72	2	He	381590	0.78	314233	121.44	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	096_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T15:19:37-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.014	83.6	70	57.1	1	
Na	23	1	nogas	-48.218	-2.4	1462538	0.8	100	
Mg	24	1	nogas	3.193	15.6	37719	11.8	100	
Al	27	1	nogas	-5.985	-5.9	20191	13.7	5	
K	39	1	nogas	-18.949	-14.7	4097411	0.6	100	
Ti	47	1	nogas	0.033	223.0	260	33.3	2.5	
V	51	1	nogas	15.272	3.0	395411	1.6	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.092	21.7	18670	1.7	2.5	
Mn	55	1	nogas	0.246	12.3	11047	5.2	2.5	
Co	59	1	nogas	0.020	36.9	757	17.2	2.5	
Ni	60	1	nogas	-0.745	-1.3	383	10.5	2.5	
Cu	63	1	nogas	-1.014	-1.1	2890	3.7	2.5	
Zn	66	1	nogas	-0.385	-5.4	670	9.1	2.5	
As	75	1	nogas	14.089	5.4	79293	2.2	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.059	18.0	1984	10.3	2.5	
Ag	107	1	nogas	0.022	16.7	357	10.6	2.5	
Cd	111	1	nogas	0.029	19.5	77	19.9	1	
Sb	121	1	nogas	-0.036	-86.7	2104	15.1	2.5	
Tl	205	1	nogas	0.347	42.2	7065	41.3	1	
Pb	208	1	nogas	0.066	12.0	2650	8.2	2.5	
U	238	1	nogas	0.040	25.4	1340	22.4	2.5	
[Pb]	206	1	nogas	0.068	10.5	657	8.4	2.5	
[Pb]	207	1	nogas	0.054	43.9	537	28.9	2.5	
Na	23	2	He	-108.976	-2.1	111095	0.4	100	
Mg	24	2	He	1.240	10.2	1120	5.0	100	
Al	27	2	He	-3.922	-2.2	257	4.5	5	
K	39	2	He	9.558	24.3	68727	0.8	100	
Ca	43	2	He	27.624	205.5	47	118.0	100	
Ca	44	2	He	-94.432	-4.9	660	10.6	100	
V	51	2	He	0.077	26.9	1996	4.2	2.5	
Cr	52	2	He	-0.210	-19.1	3237	3.8	2.5	
Mn	55	2	He	-0.167	-9.2	380	9.5	2.5	
Fe	56	2	He	1.769	10.9	14806	3.5	100	
Co	59	2	He	0.006	243.9	167	50.3	2.5	
Ni	60	2	He	-0.433	-10.6	200	35.0	2.5	
Cu	63	2	He	-1.283	-1.9	1067	8.9	2.5	
Zn	66	2	He	-0.638	-11.5	160	34.8	2.5	
As	75	2	He	0.143	22.2	161	12.1	2.5	
Se	78	2	He	-0.409	-103.6	30	49.3	2.5	
B	11	1	nogas	30.963	9.4	76682	10.8	10	CCB Main CR1 Failed
Si	28	1	nogas	-8.834	-59.9	637671	3.7	5	
Ca	43	1	nogas	17.132	34.3	1233	10.9	100	
Ca	44	1	nogas	-1564.664	-0.1	86826	1.1	100	
Fe	56	1	nogas	17.488	5.6	849975	1.0	100	
Se	77	1	nogas	95.607	1.4	25976	1.1	2.5	CCB Main CR1 Failed
Se	82	1	nogas	-0.799	-6.8	300	3.3	2.5	
Mo	95	1	nogas	0.487	108.2	2418	92.2	2.5	
Sn	118	1	nogas	0.062	50.9	1213	17.6	5	

Ba	137	1	nogas	0.016	95.3	207	24.4	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	-0.033	-158.6	417	23.3	2.5	
P	31	1	nogas	-35.648	-3.4	43014	3.1	10	
La	139	1	nogas	-110.357	-19.2	47	44.6	2.5	
Au	197	1	nogas	166.224	78.8	7	173.2	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	500854	2.76	409846	122.21	70	125	
Ge	72	1	nogas	2324762	1.03	1928234	120.56	70	125	
In	115	1	nogas	2481473	1.63	2023507	122.63	70	125	
Bi	209	1	nogas	2344469	1.40	1855077	126.38	70	125	ISTD Failed
Ge	72	2	He	378148	1.09	314233	120.34	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	097_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T15:22:33-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	96.605	1.027	311055	0.33	100	96.6	90	110	
Na	23	1	nogas	9655.684	3.970	131956399	0.48	10000	96.6	90	110	
Mg	24	1	nogas	9645.101	2.236	88944371	2.05	10000	96.5	90	110	
Al	27	1	nogas	99.479	25.220	837487	23.98	100	99.5	90	110	
K	39	1	nogas	9238.999	1.830	105721711	1.85	10000	92.4	90	110	
Ti	47	1	nogas	94.634	4.273	111848	3.01	100	94.6	90	110	
V	51	1	nogas	108.853	4.359	2055909	2.81	100	108.9	90	110	
Cr	52	1	nogas	99.808	4.138	1565161	2.81	100	99.8	90	110	
Mn	55	1	nogas	99.246	2.328	1909801	1.50	100	99.2	90	110	
Co	59	1	nogas	98.260	2.923	1676357	1.61	100	98.3	90	110	
Ni	60	1	nogas	97.318	2.027	380888	0.75	100	97.3	90	110	
Cu	63	1	nogas	95.447	1.775	935613	0.95	100	95.4	90	110	
Zn	66	1	nogas	100.743	1.407	302947	0.31	100	100.7	90	110	
As	75	1	nogas	110.260	1.034	392880	0.54	100	110.3	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	101.414	1.200	1965269	0.17	100	101.4	90	110	
Ag	107	1	nogas	99.442	1.720	1130961	0.72	100	99.4	90	110	
Cd	111	1	nogas	98.436	0.907	241178	1.69	100	98.4	90	110	
Sb	121	1	nogas	106.122	2.695	1065192	1.88	100	106.1	90	110	
Tl	205	1	nogas	104.672	3.814	2040548	3.07	100	104.7	90	110	
Pb	208	1	nogas	101.620	2.011	2834066	0.36	100	101.6	90	110	
U	238	1	nogas	104.717	2.570	3011539	1.75	100	104.7	90	110	
[Pb]	206	1	nogas	104.915	2.783	709664	1.68	100	104.9	90	110	
[Pb]	207	1	nogas	95.434	2.491	599550	0.82	100	95.4	90	110	
Na	23	2	He	9127.539	0.936	6159782	2.00	10000	91.3	90	110	
Mg	24	2	He	9219.461	1.320	3226151	1.12	10000	92.2	90	110	
Al	27	2	He	87.168	2.434	14179	2.01	100	87.2	90	110	CCV Main CR1-2 Failed
K	39	2	He	10699.787	1.129	2627763	1.10	10000	107.0	90	110	
Ca	43	2	He	8776.346	3.908	8239	4.95	10000	87.8	90	110	CCV Main CR1-2 Failed
Ca	44	2	He	8704.987	1.700	140451	2.00	10000	87.0	90	110	CCV Main CR1-2 Failed
V	51	2	He	97.892	2.292	290755	1.17	100	97.9	90	110	
Cr	52	2	He	94.520	3.600	355807	2.46	100	94.5	90	110	
Mn	55	2	He	91.596	3.265	203953	2.25	100	91.6	90	110	
Fe	56	2	He	8715.522	2.916	28012695	2.13	10000	87.2	90	110	CCV Main CR1-2 Failed
Co	59	2	He	95.329	1.835	512785	1.76	100	95.3	90	110	
Ni	60	2	He	94.060	1.376	136803	2.27	100	94.1	90	110	
Cu	63	2	He	94.003	0.430	368411	1.31	100	94.0	90	110	
Zn	66	2	He	98.424	1.935	74112	2.74	100	98.4	90	110	
As	75	2	He	101.784	1.104	55772	0.92	100	101.8	90	110	
Se	78	2	He	96.953	2.749	3419	2.05	100	97.0	90	110	
B	11	1	nogas	502.241	2.333	973107	1.50	500	100.4	90	110	
Si	28	1	nogas	14.398	35.774	754483	3.43	5000	0.3	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	9359.875	1.704	215975	1.43	10000	93.6	90	110	
Ca	44	1	nogas	8047.147	4.207	3524787	3.22	10000	80.5	90	110	CCV Main CR1-2 Failed
Fe	56	1	nogas	9371.195	2.531	162448683	1.40	10000	93.7	90	110	
Se	77	1	nogas	178.706	2.812	39824	2.25	100	178.7	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	95.761	2.958	15671	1.91	100	95.8	90	110	
Mo	95	1	nogas	99.411	3.085	430313	1.73	100	99.4	90	110	
Sn	118	1	nogas	97.828	1.123	637785	1.73	100	97.8	90	110	
Ba	137	1	nogas	102.342	4.389	318351	2.35	100	102.3	90	110	
Sb	121	2	He	106.254	0.669	199158	1.14	100	106.3	90	110	
Li	7	1	nogas	98.347	1.121	750802	0.85	100	98.3	90	110	
P	31	1	nogas	463.829	1.449	426965	0.65	500	92.8	90	110	
La	139	1	nogas	269.326	32.240	400	18.87	100	269.3	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	124.953	94.553	10	100.00	100	125.0	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	453662	1.33	409846	110.69	70	125	
Ge	72	1	nogas	2339316	1.33	1928234	121.32	70	125	
In	115	1	nogas	2449105	2.26	2023507	121.03	70	125	
Bi	209	1	nogas	2307485	1.69	1855077	124.39	70	125	

Ge	72	2	He	370525	1.10	314233	117.91	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	108_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T15:55:29-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	94.863	1.717	299905	0.60	100	94.9	90	110	
Na	23	1	nogas	9833.037	1.821	131437911	1.87	10000	98.3	90	110	
Mg	24	1	nogas	9575.430	1.278	86348085	0.66	10000	95.8	90	110	
Al	27	1	nogas	85.604	1.244	711899	0.57	100	85.6	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	9116.741	1.637	101903784	1.30	10000	91.2	90	110	
Ti	47	1	nogas	93.587	0.869	108033	1.76	100	93.6	90	110	
V	51	1	nogas	116.305	1.298	2136850	1.70	100	116.3	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	99.100	2.095	1517653	1.16	100	99.1	90	110	
Mn	55	1	nogas	100.326	1.725	1884851	0.95	100	100.3	90	110	
Co	59	1	nogas	100.349	0.662	1671746	0.27	100	100.3	90	110	
Ni	60	1	nogas	96.956	1.158	370537	1.11	100	97.0	90	110	
Cu	63	1	nogas	94.465	1.237	904247	1.21	100	94.5	90	110	
Zn	66	1	nogas	99.966	0.904	293513	0.31	100	100.0	90	110	
As	75	1	nogas	114.778	1.216	397924	0.27	100	114.8	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	101.183	3.815	1914336	3.62	100	101.2	90	110	
Ag	107	1	nogas	102.154	1.367	1134327	0.77	100	102.2	90	110	
Cd	111	1	nogas	100.433	1.581	242029	1.45	100	100.4	90	110	
Sb	121	1	nogas	106.677	2.888	1045530	2.97	100	106.7	90	110	
Tl	205	1	nogas	106.234	1.636	2048783	0.69	100	106.2	90	110	
Pb	208	1	nogas	101.830	1.427	2809575	1.57	100	101.8	90	110	
U	238	1	nogas	104.683	2.312	2978096	1.80	100	104.7	90	110	
[Pb]	206	1	nogas	104.618	1.816	700052	0.88	100	104.6	90	110	
[Pb]	207	1	nogas	96.702	0.676	601060	1.13	100	96.7	90	110	
Na	23	2	He	8935.522	2.416	6085925	0.65	10000	89.4	90	110	CCV Main CR1-2 Failed
Mg	24	2	He	8986.997	2.248	3172453	1.27	10000	89.9	90	110	CCV Main CR1-2 Failed
Al	27	2	He	86.807	4.830	14243	2.22	100	86.8	90	110	CCV Main CR1-2 Failed
K	39	2	He	11075.669	1.495	2717742	1.46	10000	110.8	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	8961.188	2.548	8489	4.87	10000	89.6	90	110	CCV Main CR1-2 Failed
Ca	44	2	He	8810.939	0.913	143399	1.55	10000	88.1	90	110	CCV Main CR1-2 Failed
V	51	2	He	94.750	4.887	283865	2.73	100	94.7	90	110	
Cr	52	2	He	90.424	4.079	343515	1.84	100	90.4	90	110	
Mn	55	2	He	88.935	2.801	199812	1.69	100	88.9	90	110	CCV Main CR1-2 Failed
Fe	56	2	He	8500.446	1.509	27566677	0.94	10000	85.0	90	110	CCV Main CR1-2 Failed
Co	59	2	He	94.523	2.735	512848	0.27	100	94.5	90	110	
Ni	60	2	He	93.995	2.751	137933	3.60	100	94.0	90	110	
Cu	63	2	He	93.911	1.271	371383	2.78	100	93.9	90	110	
Zn	66	2	He	97.456	1.365	74052	3.16	100	97.5	90	110	
As	75	2	He	98.226	2.155	54297	0.77	100	98.2	90	110	
Se	78	2	He	93.022	2.593	3311	0.46	100	93.0	90	110	
B	11	1	nogas	508.899	2.149	968337	3.21	500	101.8	90	110	
Si	28	1	nogas	44.760	3.720	880464	0.26	5000	0.9	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	9339.228	1.095	210399	0.91	10000	93.4	90	110	
Ca	44	1	nogas	8010.437	2.081	3428503	1.24	10000	80.1	90	110	CCV Main CR1-2 Failed
Fe	56	1	nogas	9355.770	2.290	158352924	1.80	10000	93.6	90	110	
Se	77	1	nogas	210.027	1.847	43914	0.59	100	210.0	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.663	3.758	16068	4.59	100	100.7	90	110	
Mo	95	1	nogas	97.672	1.776	412871	1.91	100	97.7	90	110	
Sn	118	1	nogas	97.425	1.299	624839	2.51	100	97.4	90	110	
Ba	137	1	nogas	101.059	0.423	309408	2.00	100	101.1	90	110	
Sb	121	2	He	105.844	1.131	200165	1.96	100	105.8	90	110	
Li	7	1	nogas	96.879	2.367	726778	0.97	100	96.9	90	110	
P	31	1	nogas	466.052	1.725	418508	0.63	500	93.2	90	110	
La	139	1	nogas	375.282	47.119	490	31.68	100	375.3	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	163.122	41.791	7	86.60	100	163.1	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	445459	1.31	409846	108.69	70	125	
Ge	72	1	nogas	2283830	0.92	1928234	118.44	70	125	
In	115	1	nogas	2408878	1.60	2023507	119.04	70	125	
Bi	209	1	nogas	2282406	1.25	1855077	123.04	70	125	

Ge	72	2	He	373876	2.43	314233	118.98	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	109_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T15:58:34-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.035	25.4	140	21.4	1	
Na	23	1	nogas	-43.717	-5.4	1494445	1.1	100	
Mg	24	1	nogas	4.781	3.2	51459	4.3	100	
Al	27	1	nogas	-6.180	-2.6	18343	5.0	5	
K	39	1	nogas	-11.312	-66.0	4106555	0.5	100	
Ti	47	1	nogas	-0.019	-389.2	197	43.8	2.5	
V	51	1	nogas	15.305	2.4	389054	1.9	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.040	73.6	17556	1.5	2.5	
Mn	55	1	nogas	0.324	9.4	12318	2.9	2.5	
Co	59	1	nogas	0.019	44.7	737	17.9	2.5	
Ni	60	1	nogas	-0.702	-3.4	540	17.0	2.5	
Cu	63	1	nogas	-1.032	-1.2	2667	3.4	2.5	
Zn	66	1	nogas	-0.416	-7.0	567	16.4	2.5	
As	75	1	nogas	15.400	3.1	82070	1.5	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.073	15.9	2224	8.6	2.5	
Ag	107	1	nogas	0.027	28.2	403	19.9	2.5	
Cd	111	1	nogas	0.038	35.0	97	33.3	1	
Sb	121	1	nogas	-0.073	-22.8	1700	7.9	2.5	
Tl	205	1	nogas	0.298	43.4	6075	41.4	1	
Pb	208	1	nogas	0.056	28.2	2373	17.9	2.5	
U	238	1	nogas	0.039	31.9	1300	27.4	2.5	
[Pb]	206	1	nogas	0.066	23.4	643	15.3	2.5	
[Pb]	207	1	nogas	0.037	13.4	427	8.9	2.5	
Na	23	2	He	-104.809	-0.8	111165	0.3	100	
Mg	24	2	He	4.559	7.0	2250	5.6	100	
Al	27	2	He	-3.684	-8.3	287	15.7	5	
K	39	2	He	16.966	16.2	70500	0.9	100	
Ca	43	2	He	11.323	93.8	30	33.3	100	
Ca	44	2	He	-96.422	-4.2	613	10.9	100	
V	51	2	He	0.090	22.3	1988	3.1	2.5	
Cr	52	2	He	-0.255	-39.6	2994	12.3	2.5	
Mn	55	2	He	-0.178	-23.7	347	26.8	2.5	
Fe	56	2	He	2.411	5.5	16511	2.7	100	
Co	59	2	He	-0.006	-122.8	97	41.8	2.5	
Ni	60	2	He	-0.413	-9.3	223	24.7	2.5	
Cu	63	2	He	-1.321	-2.3	893	12.9	2.5	
Zn	66	2	He	-0.664	-3.2	137	11.2	2.5	
As	75	2	He	0.123	42.9	147	20.2	2.5	
Se	78	2	He	-0.409	-76.1	29	36.8	2.5	
B	11	1	nogas	38.888	8.5	89558	7.7	10	CCB Main CR1 Failed
Si	28	1	nogas	-9.686	-50.9	622268	2.3	5	
Ca	43	1	nogas	15.057	47.5	1163	12.1	100	
Ca	44	1	nogas	-1588.527	-0.4	76950	1.8	100	
Fe	56	1	nogas	19.946	9.1	876291	1.8	100	
Se	77	1	nogas	106.398	4.0	27248	0.8	2.5	CCB Main CR1 Failed
Se	82	1	nogas	-0.446	-57.2	350	12.5	2.5	
Mo	95	1	nogas	0.268	19.2	1463	13.1	2.5	
Sn	118	1	nogas	0.147	25.6	1740	13.3	5	

Ba	137	1	nogas	0.045	43.4	293	20.8	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	-0.095	-46.5	293	27.6	2.5	
P	31	1	nogas	-34.992	-1.7	42739	0.9	10	
La	139	1	nogas	-134.278	-12.4	23	65.5	2.5	
Au	197	1	nogas	50.671	129.7	17	34.6	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	480468	0.99	409846	117.23	70	125	
Ge	72	1	nogas	2283941	1.74	1928234	118.45	70	125	
In	115	1	nogas	2436723	0.80	2023507	120.42	70	125	
Bi	209	1	nogas	2342502	1.37	1855077	126.28	70	125	ISTD Failed
Ge	72	2	He	369104	0.61	314233	117.46	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	120_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T16:31:35-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	97.470	1.717	303002	1.98	100	97.5	90	110	
Na	23	1	nogas	9620.341	2.256	131467440	1.69	10000	96.2	90	110	
Mg	24	1	nogas	9479.181	0.759	87371569	1.06	10000	94.8	90	110	
Al	27	1	nogas	81.534	2.918	707691	3.12	100	81.5	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	9102.794	0.455	105715596	1.42	10000	91.0	90	110	
Ti	47	1	nogas	92.619	0.189	111073	1.73	100	92.6	90	110	
V	51	1	nogas	117.656	1.275	2244057	1.41	100	117.7	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	96.363	2.729	1533562	2.15	100	96.4	90	110	
Mn	55	1	nogas	99.276	1.016	1937805	1.17	100	99.3	90	110	
Co	59	1	nogas	98.856	2.698	1710821	2.58	100	98.9	90	110	
Ni	60	1	nogas	96.517	2.254	383189	2.02	100	96.5	90	110	
Cu	63	1	nogas	94.094	1.851	935685	1.46	100	94.1	90	110	
Zn	66	1	nogas	99.977	0.310	304993	2.02	100	100.0	90	110	
As	75	1	nogas	119.293	1.372	428290	0.75	100	119.3	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	101.275	1.431	1990492	0.55	100	101.3	90	110	
Ag	107	1	nogas	101.302	0.923	1168613	0.93	100	101.3	90	110	
Cd	111	1	nogas	99.148	1.408	249449	0.70	100	99.1	90	110	
Sb	121	1	nogas	105.145	1.743	1070449	0.26	100	105.1	90	110	
Tl	205	1	nogas	100.899	1.642	2026466	0.23	100	100.9	90	110	
Pb	208	1	nogas	99.909	1.751	2870484	0.73	100	99.9	90	110	
U	238	1	nogas	104.007	1.848	3081296	0.24	100	104.0	90	110	
[Pb]	206	1	nogas	101.351	1.868	706268	0.35	100	101.4	90	110	
[Pb]	207	1	nogas	93.716	1.929	606606	1.75	100	93.7	90	110	
Na	23	2	He	8542.647	3.669	6250775	2.49	10000	85.4	90	110	CCV Main CR1-2 Failed
Mg	24	2	He	8644.642	2.864	3273917	1.81	10000	86.4	90	110	CCV Main CR1-2 Failed
Al	27	2	He	86.692	3.599	15267	2.33	100	86.7	90	110	CCV Main CR1-2 Failed
K	39	2	He	11598.125	2.452	2842809	2.39	10000	116.0	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	8805.138	6.964	8946	7.33	10000	88.1	90	110	CCV Main CR1-2 Failed
Ca	44	2	He	8555.874	0.428	149464	1.27	10000	85.6	90	110	CCV Main CR1-2 Failed
V	51	2	He	92.906	2.584	298789	1.70	100	92.9	90	110	
Cr	52	2	He	88.553	2.342	361140	1.73	100	88.6	90	110	CCV Main CR1-2 Failed
Mn	55	2	He	88.150	2.591	212509	2.02	100	88.2	90	110	CCV Main CR1-2 Failed
Fe	56	2	He	8352.201	2.170	29059916	1.65	10000	83.5	90	110	CCV Main CR1-2 Failed
Co	59	2	He	92.118	2.820	536352	2.67	100	92.1	90	110	
Ni	60	2	He	90.634	2.476	142703	2.54	100	90.6	90	110	
Cu	63	2	He	90.104	1.743	382483	1.66	100	90.1	90	110	
Zn	66	2	He	95.313	0.867	77698	1.01	100	95.3	90	110	
As	75	2	He	98.622	2.355	58491	1.44	100	98.6	90	110	
Se	78	2	He	93.113	3.691	3555	2.55	100	93.1	90	110	
B	11	1	nogas	502.899	5.483	940244	3.55	500	100.6	90	110	
Si	28	1	nogas	29.214	11.160	838201	2.37	5000	0.6	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	9261.730	2.289	216747	1.57	10000	92.6	90	110	
Ca	44	1	nogas	7880.445	2.503	3514191	0.27	10000	78.8	90	110	CCV Main CR1-2 Failed
Fe	56	1	nogas	9147.465	2.227	160844099	1.10	10000	91.5	90	110	
Se	77	1	nogas	236.735	1.194	50083	0.91	100	236.7	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	98.669	4.840	16358	2.93	100	98.7	90	110	
Mo	95	1	nogas	97.378	2.679	427523	1.05	100	97.4	90	110	
Sn	118	1	nogas	96.295	1.279	644748	1.85	100	96.3	90	110	
Ba	137	1	nogas	102.625	1.036	327990	0.14	100	102.6	90	110	
Sb	121	2	He	104.494	1.917	212013	2.18	100	104.5	90	110	
Li	7	1	nogas	97.134	1.125	716437	1.42	100	97.1	90	110	
P	31	1	nogas	466.383	0.971	435076	1.65	500	93.3	90	110	
La	139	1	nogas	254.285	25.147	397	14.77	100	254.3	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	91.217	70.468	13	43.30	100	91.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	438031	2.46	409846	106.88	70	125	
Ge	72	1	nogas	2372734	1.84	1928234	123.05	70	125	
In	115	1	nogas	2514899	1.17	2023507	124.28	70	125	
Bi	209	1	nogas	2377039	1.63	1855077	128.14	70	125	ISTD Failed

Ge	72	2	He	401066	1.07	314233	127.63	70	125	ISTD Failed

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	121_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T16:34:41-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.018	65.1	83	48.5	1	
Na	23	1	nogas	-10.126	-31.9	2037416	1.8	100	
Mg	24	1	nogas	6.012	6.4	65776	5.5	100	
Al	27	1	nogas	-6.172	-0.6	19825	1.4	5	
K	39	1	nogas	-20.991	-12.4	4308202	0.0	100	
Ti	47	1	nogas	-0.006	-312.6	227	9.2	2.5	
V	51	1	nogas	18.104	4.7	470886	4.1	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.075	40.8	19468	3.2	2.5	
Mn	55	1	nogas	0.348	2.5	13729	1.5	2.5	
Co	59	1	nogas	0.014	63.5	700	22.5	2.5	
Ni	60	1	nogas	-0.728	-1.9	473	11.6	2.5	
Cu	63	1	nogas	-1.052	-2.7	2670	10.7	2.5	
Zn	66	1	nogas	-0.420	-7.0	597	16.1	2.5	
As	75	1	nogas	18.986	3.2	100594	2.2	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.074	16.0	2404	9.3	2.5	
Ag	107	1	nogas	0.032	23.0	500	17.1	2.5	
Cd	111	1	nogas	0.018	45.0	50	40.0	1	
Sb	121	1	nogas	-0.091	-10.7	1647	5.4	2.5	
Tl	205	1	nogas	0.323	50.2	6899	48.7	1	
Pb	208	1	nogas	0.041	8.2	2053	5.0	2.5	
U	238	1	nogas	0.040	28.8	1410	25.2	2.5	
[Pb]	206	1	nogas	0.041	31.9	497	19.1	2.5	
[Pb]	207	1	nogas	0.050	24.1	533	15.3	2.5	
Na	23	2	He	-84.952	-5.2	138919	1.9	100	
Mg	24	2	He	4.708	9.6	2577	7.4	100	
Al	27	2	He	-3.552	-6.6	343	11.0	5	
K	39	2	He	21.998	32.3	71705	2.4	100	
Ca	43	2	He	14.359	139.7	37	56.8	100	
Ca	44	2	He	-87.535	-5.5	843	9.6	100	
V	51	2	He	0.146	11.8	2409	2.3	2.5	
Cr	52	2	He	-0.421	-17.4	2660	11.0	2.5	
Mn	55	2	He	-0.142	-17.8	477	12.6	2.5	
Fe	56	2	He	2.184	3.7	17666	1.8	100	
Co	59	2	He	-0.001	-482.3	137	27.7	2.5	
Ni	60	2	He	-0.444	-8.5	200	30.0	2.5	
Cu	63	2	He	-1.341	-1.7	913	10.1	2.5	
Zn	66	2	He	-0.696	-9.0	127	40.5	2.5	
As	75	2	He	0.221	34.3	223	20.2	2.5	
Se	78	2	He	-0.335	-66.8	36	23.8	2.5	
B	11	1	nogas	30.317	10.7	73602	7.9	10	CCB Main CR1 Failed
Si	28	1	nogas	-17.956	-19.5	627608	2.1	5	
Ca	43	1	nogas	14.205	26.3	1233	7.5	100	
Ca	44	1	nogas	-1604.896	-0.3	76665	1.9	100	
Fe	56	1	nogas	19.057	2.2	927211	1.5	100	
Se	77	1	nogas	133.658	6.5	34053	5.1	2.5	CCB Main CR1 Failed
Se	82	1	nogas	-0.403	-69.5	383	12.0	2.5	
Mo	95	1	nogas	0.225	20.3	1380	14.5	2.5	
Sn	118	1	nogas	0.093	60.2	1463	24.6	5	

Ba	137	1	nogas	0.022	111.6	233	33.3	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	-0.070	-42.7	380	16.4	2.5	
P	31	1	nogas	-32.521	-8.2	47983	3.9	10	
La	139	1	nogas	-98.125	-28.2	60	44.1	2.5	
Au	197	1	nogas	168.667	75.1	7	173.2	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	490561	1.42	409846	119.69	70	125	
Ge	72	1	nogas	2457707	0.73	1928234	127.46	70	125	ISTD Failed
In	115	1	nogas	2573910	2.06	2023507	127.20	70	125	ISTD Failed
Bi	209	1	nogas	2455558	0.19	1855077	132.37	70	125	ISTD Failed
Ge	72	2	He	413128	0.59	314233	131.47	70	125	ISTD Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	132_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T17:07:58-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	92.817	6.044	306034	2.25	100	92.8	90	110	
Na	23	1	nogas	9934.534	5.797	132272111	4.13	10000	99.3	90	110	
Mg	24	1	nogas	9752.588	2.170	87652677	1.27	10000	97.5	90	110	
Al	27	1	nogas	115.584	21.353	939059	20.01	100	115.6	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	9383.562	1.918	104791798	0.82	10000	93.8	90	110	
Ti	47	1	nogas	94.252	3.091	108806	1.89	100	94.3	90	110	
V	51	1	nogas	114.604	2.922	2107652	1.43	100	114.6	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	99.356	1.601	1522080	0.23	100	99.4	90	110	
Mn	55	1	nogas	99.917	1.425	1877923	1.16	100	99.9	90	110	
Co	59	1	nogas	98.689	2.246	1644440	0.94	100	98.7	90	110	
Ni	60	1	nogas	95.225	2.006	364060	0.59	100	95.2	90	110	
Cu	63	1	nogas	92.909	2.128	889752	0.81	100	92.9	90	110	
Zn	66	1	nogas	99.019	2.296	290818	1.09	100	99.0	90	110	
As	75	1	nogas	113.264	1.595	393315	2.45	100	113.3	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	101.641	2.678	1923458	1.60	100	101.6	90	110	
Ag	107	1	nogas	102.145	1.012	1134639	0.52	100	102.1	90	110	
Cd	111	1	nogas	99.008	1.887	241504	2.37	100	99.0	90	110	
Sb	121	1	nogas	106.561	1.513	1044677	0.71	100	106.6	90	110	
Tl	205	1	nogas	103.697	4.261	2053707	2.52	100	103.7	90	110	
Pb	208	1	nogas	99.211	3.510	2811068	1.76	100	99.2	90	110	
U	238	1	nogas	102.092	1.176	2983807	1.18	100	102.1	90	110	
[Pb]	206	1	nogas	102.621	4.740	705154	2.96	100	102.6	90	110	
[Pb]	207	1	nogas	93.510	4.432	596803	2.63	100	93.5	90	110	
Na	23	2	He	8747.319	2.354	5945358	1.49	10000	87.5	90	110	CCV Main CR1-2 Failed
Mg	24	2	He	8787.248	0.835	3093755	1.24	10000	87.9	90	110	CCV Main CR1-2 Failed
Al	27	2	He	85.936	4.119	14072	2.57	100	85.9	90	110	CCV Main CR1-2 Failed
K	39	2	He	10509.853	1.276	2582297	1.24	10000	105.1	90	110	
Ca	43	2	He	8438.025	6.369	7969	6.67	10000	84.4	90	110	CCV Main CR1-2 Failed
Ca	44	2	He	8298.025	2.055	134786	1.57	10000	83.0	90	110	CCV Main CR1-2 Failed
V	51	2	He	92.445	1.048	276383	1.34	100	92.4	90	110	
Cr	52	2	He	90.316	1.851	342281	1.48	100	90.3	90	110	
Mn	55	2	He	87.120	1.707	195232	1.57	100	87.1	90	110	CCV Main CR1-2 Failed
Fe	56	2	He	8332.382	1.458	26946034	0.38	10000	83.3	90	110	CCV Main CR1-2 Failed
Co	59	2	He	93.054	2.481	503545	1.76	100	93.1	90	110	
Ni	60	2	He	92.015	1.802	134634	0.90	100	92.0	90	110	
Cu	63	2	He	92.113	1.936	363259	0.55	100	92.1	90	110	
Zn	66	2	He	95.596	3.355	72412	1.99	100	95.6	90	110	
As	75	2	He	96.840	1.460	53387	0.88	100	96.8	90	110	
Se	78	2	He	92.606	3.257	3287	2.87	100	92.6	90	110	
B	11	1	nogas	482.243	8.308	956815	4.55	500	96.4	90	110	
Si	28	1	nogas	3.773	110.620	686690	4.16	5000	0.1	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	9123.724	5.414	205552	4.15	10000	91.2	90	110	
Ca	44	1	nogas	7825.063	5.757	3363940	3.46	10000	78.3	90	110	CCV Main CR1-2 Failed
Fe	56	1	nogas	9387.877	2.362	158962270	2.44	10000	93.9	90	110	
Se	77	1	nogas	209.597	5.241	43864	4.16	100	209.6	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	101.178	0.474	16151	1.98	100	101.2	90	110	
Mo	95	1	nogas	98.113	3.952	414766	2.87	100	98.1	90	110	
Sn	118	1	nogas	96.491	2.508	626175	1.59	100	96.5	90	110	
Ba	137	1	nogas	100.554	5.279	311275	1.30	100	100.6	90	110	
Sb	121	2	He	103.262	1.703	194720	0.76	100	103.3	90	110	
Li	7	1	nogas	95.845	4.281	750823	1.54	100	95.8	90	110	
P	31	1	nogas	462.114	2.400	415680	1.05	500	92.4	90	110	
La	139	1	nogas	240.931	47.692	370	25.78	100	240.9	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	87.844	203.143	13	114.56	100	87.8	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	465226	3.82	409846	113.51	70	125	
Ge	72	1	nogas	2284731	1.53	1928234	118.49	70	125	
In	115	1	nogas	2439209	4.12	2023507	120.54	70	125	
Bi	209	1	nogas	2344783	1.85	1855077	126.40	70	125	ISTD Failed

Ge	72	2	He	372784	1.36	314233	118.63	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	133_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T17:11:05-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.025	31.6	110	24.1	1	
Na	23	1	nogas	-32.350	-3.5	1695236	0.8	100	
Mg	24	1	nogas	4.572	26.9	51024	22.3	100	
Al	27	1	nogas	-6.129	-0.8	18833	1.3	5	
K	39	1	nogas	-6.296	-32.0	4181566	0.7	100	
Ti	47	1	nogas	0.048	130.9	273	25.7	2.5	
V	51	1	nogas	13.936	7.1	367085	3.8	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.033	12.0	17536	1.0	2.5	
Mn	55	1	nogas	0.346	3.1	12788	1.0	2.5	
Co	59	1	nogas	0.012	45.3	610	15.0	2.5	
Ni	60	1	nogas	-0.724	-2.3	457	14.6	2.5	
Cu	63	1	nogas	-1.083	-2.9	2200	14.3	2.5	
Zn	66	1	nogas	-0.370	-10.7	703	15.6	2.5	
As	75	1	nogas	16.976	10.4	87488	5.6	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.067	18.8	2124	12.3	2.5	
Ag	107	1	nogas	0.028	39.5	417	28.6	2.5	
Cd	111	1	nogas	0.033	64.2	87	63.6	1	
Sb	121	1	nogas	-0.021	-80.0	2217	7.2	2.5	
Tl	205	1	nogas	0.357	47.5	7232	46.3	1	
Pb	208	1	nogas	0.041	33.8	1940	20.1	2.5	
U	238	1	nogas	0.044	17.9	1457	16.8	2.5	
[Pb]	206	1	nogas	0.037	50.5	440	28.4	2.5	
[Pb]	207	1	nogas	0.034	69.8	403	36.1	2.5	
Na	23	2	He	-86.587	-5.3	123427	0.8	100	
Mg	24	2	He	2.912	8.3	1680	3.3	100	
Al	27	2	He	-3.624	-14.5	297	27.0	5	
K	39	2	He	13.220	12.0	69603	0.5	100	
Ca	43	2	He	14.947	149.5	33	62.4	100	
Ca	44	2	He	-95.943	-8.6	623	21.9	100	
V	51	2	He	0.031	52.5	1818	0.9	2.5	
Cr	52	2	He	-0.286	-19.1	2887	5.6	2.5	
Mn	55	2	He	-0.158	-27.7	390	24.7	2.5	
Fe	56	2	He	2.223	3.9	15957	0.2	100	
Co	59	2	He	-0.002	-158.8	117	17.8	2.5	
Ni	60	2	He	-0.395	-6.7	250	14.4	2.5	
Cu	63	2	He	-1.363	-0.7	737	6.8	2.5	
Zn	66	2	He	-0.691	-7.8	117	32.5	2.5	
As	75	2	He	0.168	32.5	171	15.6	2.5	
Se	78	2	He	-0.288	-69.8	34	21.5	2.5	
B	11	1	nogas	29.131	14.3	72418	10.6	10	CCB Main CR1 Failed
Si	28	1	nogas	-25.899	-4.0	548332	0.9	5	
Ca	43	1	nogas	13.111	29.5	1127	7.2	100	
Ca	44	1	nogas	-1613.988	-0.3	68409	2.2	100	
Fe	56	1	nogas	16.474	5.2	821999	1.0	100	
Se	77	1	nogas	116.605	6.9	29031	3.6	2.5	CCB Main CR1 Failed
Se	82	1	nogas	-0.562	-61.4	333	16.5	2.5	
Mo	95	1	nogas	0.223	12.4	1280	10.2	2.5	
Sn	118	1	nogas	0.119	22.0	1577	13.0	5	

Ba	137	1	nogas	0.022	90.6	223	26.2	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	-0.021	-231.8	433	22.4	2.5	
P	31	1	nogas	-29.182	-2.4	47331	0.5	10	
La	139	1	nogas	-96.317	-55.3	60	86.6	2.5	
Au	197	1	nogas	166.921	77.7	7	173.2	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	499658	2.16	409846	121.91	70	125	
Ge	72	1	nogas	2295164	0.94	1928234	119.03	70	125	
In	115	1	nogas	2460682	2.42	2023507	121.60	70	125	
Bi	209	1	nogas	2333379	2.54	1855077	125.78	70	125	ISTD Failed
Ge	72	2	He	370319	1.88	314233	117.85	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	141_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T17:34:41-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	97.371	2.222	274045	0.63	100	97.4	90	110	
Na	23	1	nogas	9791.959	4.357	138970645	0.66	10000	97.9	90	110	
Mg	24	1	nogas	9165.189	4.150	87779392	2.91	10000	91.7	90	110	
Al	27	1	nogas	80.511	2.642	716541	1.01	100	80.5	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	9253.598	1.820	110032419	3.20	10000	92.5	90	110	
Ti	47	1	nogas	93.202	1.637	114480	1.25	100	93.2	90	110	
V	51	1	nogas	136.340	3.627	2643270	4.13	100	136.3	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	96.766	1.929	1577527	1.56	100	96.8	90	110	
Mn	55	1	nogas	98.422	2.310	1967851	1.70	100	98.4	90	110	
Co	59	1	nogas	98.759	3.202	1750439	1.79	100	98.8	90	110	
Ni	60	1	nogas	98.463	3.737	400276	2.27	100	98.5	90	110	
Cu	63	1	nogas	94.989	2.693	967379	1.46	100	95.0	90	110	
Zn	66	1	nogas	98.744	1.645	308537	0.64	100	98.7	90	110	
As	75	1	nogas	127.113	0.961	465192	0.59	100	127.1	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	103.625	1.591	2086368	1.30	100	103.6	90	110	
Ag	107	1	nogas	100.006	1.323	1181746	0.77	100	100.0	90	110	
Cd	111	1	nogas	96.479	1.328	248398	2.75	100	96.5	90	110	
Sb	121	1	nogas	105.157	1.919	1096664	0.48	100	105.2	90	110	
Tl	205	1	nogas	102.267	3.861	1985017	1.80	100	102.3	90	110	
Pb	208	1	nogas	100.093	1.220	2780413	1.47	100	100.1	90	110	
U	238	1	nogas	101.236	2.124	2899383	0.57	100	101.2	90	110	
[Pb]	206	1	nogas	102.068	0.975	687719	1.58	100	102.1	90	110	
[Pb]	207	1	nogas	93.962	1.207	588009	1.72	100	94.0	90	110	
Na	23	2	He	9358.354	3.142	6933996	1.13	10000	93.6	90	110	
Mg	24	2	He	8789.544	1.648	3380476	0.94	10000	87.9	90	110	CCV Main CR1-2 Failed
Al	27	2	He	86.867	4.546	15527	1.84	100	86.9	90	110	CCV Main CR1-2 Failed
K	39	2	He	11896.137	3.846	2914147	3.76	10000	119.0	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	8539.861	1.399	8812	3.58	10000	85.4	90	110	CCV Main CR1-2 Failed
Ca	44	2	He	8433.980	2.482	149617	1.57	10000	84.3	90	110	CCV Main CR1-2 Failed
V	51	2	He	93.644	4.189	305717	2.60	100	93.6	90	110	
Cr	52	2	He	90.139	6.125	372979	4.13	100	90.1	90	110	
Mn	55	2	He	90.365	5.759	221050	3.47	100	90.4	90	110	
Fe	56	2	He	8510.837	5.503	30049368	3.04	10000	85.1	90	110	CCV Main CR1-2 Failed
Co	59	2	He	93.052	4.347	549919	2.35	100	93.1	90	110	
Ni	60	2	He	89.944	5.203	143752	3.83	100	89.9	90	110	CCV Main CR1-2 Failed
Cu	63	2	He	88.395	4.576	381153	4.56	100	88.4	90	110	CCV Main CR1-2 Failed
Zn	66	2	He	94.681	2.632	78391	3.51	100	94.7	90	110	
As	75	2	He	96.769	2.220	58276	0.27	100	96.8	90	110	
Se	78	2	He	91.251	2.879	3539	2.22	100	91.3	90	110	
B	11	1	nogas	537.505	2.479	909781	1.43	500	107.5	90	110	
Si	28	1	nogas	4.689	139.028	734634	3.05	5000	0.1	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	9124.568	5.889	218684	4.67	10000	91.2	90	110	
Ca	44	1	nogas	7878.955	5.623	3598732	3.44	10000	78.8	90	110	CCV Main CR1-2 Failed
Fe	56	1	nogas	9149.538	2.586	164819375	2.40	10000	91.5	90	110	
Se	77	1	nogas	295.547	1.644	61368	1.28	100	295.5	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.154	6.327	17012	6.35	100	100.2	90	110	
Mo	95	1	nogas	97.764	2.123	439718	0.87	100	97.8	90	110	
Sn	118	1	nogas	95.539	0.415	654482	1.74	100	95.5	90	110	
Ba	137	1	nogas	101.289	3.453	331117	1.98	100	101.3	90	110	
Sb	121	2	He	103.405	2.422	213006	1.07	100	103.4	90	110	
Li	7	1	nogas	97.826	0.711	653161	2.01	100	97.8	90	110	
P	31	1	nogas	450.731	5.075	433017	2.81	500	90.1	90	110	
La	139	1	nogas	329.996	23.201	480	14.58	100	330.0	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	83.896	163.055	13	86.60	100	83.9	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	396602	1.62	409846	96.77	70	125	
Ge	72	1	nogas	2430495	1.47	1928234	126.05	70	125	ISTD Failed
In	115	1	nogas	2573028	1.51	2023507	127.16	70	125	ISTD Failed
Bi	209	1	nogas	2298197	2.38	1855077	123.89	70	125	

Ge	72	2	He	407321	2.48	314233	129.62	70	125	ISTD Failed

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	142_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T17:37:49-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.031	40.9	117	34.6	1	
Na	23	1	nogas	552.408	6.8	9550084	2.3	100	CCB Main CR1 Failed
Mg	24	1	nogas	7.992	11.2	81814	6.3	100	
Al	27	1	nogas	-6.244	-1.4	18770	2.6	5	
K	39	1	nogas	22.071	40.6	4689212	1.2	100	
Ti	47	1	nogas	-0.013	-229.9	213	19.5	2.5	
V	51	1	nogas	26.521	3.5	612403	1.6	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.194	21.9	20889	4.7	2.5	
Mn	55	1	nogas	0.351	5.9	13475	2.2	2.5	
Co	59	1	nogas	0.016	23.5	720	11.4	2.5	
Ni	60	1	nogas	1.104	10.2	7752	5.4	2.5	
Cu	63	1	nogas	-0.403	-10.1	9036	2.7	2.5	
Zn	66	1	nogas	-0.076	-25.9	1640	6.0	2.5	
As	75	1	nogas	23.682	4.8	113825	1.5	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.112	12.4	3107	7.6	2.5	
Ag	107	1	nogas	0.037	37.8	540	28.5	2.5	
Cd	111	1	nogas	0.032	15.6	83	13.9	1	
Sb	121	1	nogas	-0.082	-28.3	1693	13.0	2.5	
Tl	205	1	nogas	0.381	45.9	7562	45.3	1	
Pb	208	1	nogas	0.042	18.6	1927	10.1	2.5	
U	238	1	nogas	0.044	23.6	1423	21.8	2.5	
[Pb]	206	1	nogas	0.054	4.0	550	3.6	2.5	
[Pb]	207	1	nogas	0.040	47.0	437	28.6	2.5	
Na	23	2	He	507.538	3.1	552087	2.0	100	CCB Main CR1 Failed
Mg	24	2	He	8.127	16.2	3777	13.6	100	
Al	27	2	He	-3.301	-7.7	373	12.1	5	
K	39	2	He	120.830	4.9	95363	1.5	100	CCB Main CR1 Failed
Ca	43	2	He	12.095	168.7	33	62.4	100	
Ca	44	2	He	-90.451	-14.3	763	27.8	100	
V	51	2	He	0.413	16.5	3174	6.0	2.5	
Cr	52	2	He	-0.325	-12.9	2957	6.3	2.5	
Mn	55	2	He	-0.167	-19.9	400	18.9	2.5	
Fe	56	2	He	2.024	8.1	16505	2.9	100	
Co	59	2	He	0.001	1676.5	143	46.5	2.5	
Ni	60	2	He	-0.418	-8.1	233	23.6	2.5	
Cu	63	2	He	-1.369	-1.5	767	12.1	2.5	
Zn	66	2	He	-0.716	-8.6	107	47.2	2.5	
As	75	2	He	0.222	10.0	217	6.7	2.5	
Se	78	2	He	-0.259	-27.4	37	8.2	2.5	
B	11	1	nogas	43.367	8.6	91217	7.9	10	CCB Main CR1 Failed
Si	28	1	nogas	-24.359	-11.7	580679	1.0	5	
Ca	43	1	nogas	4.204	143.9	967	13.1	100	
Ca	44	1	nogas	-1577.671	-0.2	84824	1.8	100	
Fe	56	1	nogas	22.032	13.7	956980	3.1	100	
Se	77	1	nogas	159.628	5.7	37603	2.5	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.212	244.1	473	15.6	2.5	
Mo	95	1	nogas	0.276	22.8	1567	15.3	2.5	
Sn	118	1	nogas	0.139	24.1	1713	11.4	5	

Ba	137	1	nogas	0.023	48.3	227	14.2	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	-0.118	-29.8	270	25.9	2.5	
P	31	1	nogas	-36.542	-3.2	43668	1.1	10	
La	139	1	nogas	-113.618	-28.2	43	70.5	2.5	
Au	197	1	nogas	160.796	87.3	7	173.2	2.5	CCB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	444225	0.34	409846	108.39	70	125	
Ge	72	1	nogas	2399393	2.73	1928234	124.43	70	125	
In	115	1	nogas	2476763	1.40	2023507	122.40	70	125	
Bi	209	1	nogas	2290782	3.09	1855077	123.49	70	125	
Ge	72	2	He	398991	1.17	314233	126.97	70	125	ISTD Failed

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLCCV5
Data File Name	143LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T17:40:45-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	4.467	6.867	14790	8.06	5	89.3	70	130	
Na	23	1	nogas	883.657	3.308	14799603	1.57	500	176.7	70	130	LLICV Main CR1 Failed
Mg	24	1	nogas	531.639	3.276	5193072	2.61	500	106.3	70	130	
Al	27	1	nogas	4.561	3.356	107377	0.91	5	91.2	70	130	
K	39	1	nogas	516.222	1.355	10529500	0.37	500	103.2	70	130	
Ti	47	1	nogas	4.873	2.119	6291	1.59	5	97.5	70	130	
V	51	1	nogas	41.676	3.944	912078	3.17	5	833.5	70	130	LLICV Main CR1 Failed
Cr	52	1	nogas	5.460	2.799	107503	1.66	5	109.2	70	130	
Mn	55	1	nogas	5.624	0.746	120366	0.36	5	112.5	70	130	
Co	59	1	nogas	5.141	4.201	92852	4.71	5	102.8	70	130	
Ni	60	1	nogas	5.532	1.203	26066	1.72	5	110.6	70	130	
Cu	63	1	nogas	4.293	5.738	57115	4.14	5	85.9	70	130	
Zn	66	1	nogas	5.340	4.312	18740	4.49	5	106.8	70	130	
As	75	1	nogas	35.586	1.804	157772	0.75	5	711.7	70	130	LLICV Main CR1 Failed
Sr	88	1	nogas	5.415	1.344	111389	0.49	5	108.3	70	130	
Ag	107	1	nogas	5.349	0.842	64196	1.30	5	107.0	70	130	
Cd	111	1	nogas	5.107	2.891	13255	4.64	5	102.1	70	130	
Sb	121	1	nogas	5.344	4.328	58975	3.67	5	106.9	70	130	
Tl	205	1	nogas	4.861	0.143	98460	1.32	5	97.2	70	130	
Pb	208	1	nogas	5.132	2.834	149142	1.94	5	102.6	70	130	
U	238	1	nogas	5.083	1.162	151703	0.22	5	101.7	70	130	
[Pb]	206	1	nogas	5.098	2.703	35934	1.85	5	102.0	70	130	
[Pb]	207	1	nogas	5.052	3.542	33085	2.83	5	101.0	70	130	
Na	23	2	He	803.301	2.874	779315	2.06	500	160.7	70	130	LLICV Main CR1 Failed
Mg	24	2	He	519.289	0.639	201180	2.02	500	103.9	70	130	
Al	27	2	He	3.932	9.663	1603	6.31	5	78.6	70	130	
K	39	2	He	756.853	0.787	247615	0.58	500	151.4	70	130	LLICV Main CR1 Failed
Ca	43	2	He	568.666	25.246	607	22.50	500	113.7	70	130	
Ca	44	2	He	382.697	1.843	9076	0.94	500	76.5	70	130	
V	51	2	He	5.686	1.065	20434	2.38	5	113.7	70	130	
Cr	52	2	He	4.552	4.805	23052	2.20	5	91.0	70	130	
Mn	55	2	He	4.579	5.304	12021	2.77	5	91.6	70	130	
Fe	56	2	He	490.256	5.184	1746665	2.96	500	98.1	70	130	
Co	59	2	He	4.937	5.741	29418	4.05	5	98.7	70	130	
Ni	60	2	He	4.283	9.438	7729	6.41	5	85.7	70	130	
Cu	63	2	He	3.529	7.174	21610	3.95	5	70.6	70	130	
Zn	66	2	He	4.337	6.275	4267	3.17	5	86.7	70	130	
As	75	2	He	5.267	5.501	3265	3.15	5	105.3	70	130	
Se	78	2	He	4.312	6.530	214	7.34	5	86.2	70	130	
B	11	1	nogas	52.881	1.378	114328	0.49	25	211.5	70	130	LLICV Main CR1 Failed
Si	28	1	nogas	262.234	2.761	2061855	1.21	25	1048.9	70	130	LLICV Main CR1 Failed
Ca	43	1	nogas	542.259	0.637	14023	1.53	500	108.5	70	130	
Ca	44	1	nogas	-1059.882	-0.780	282190	0.41	500	-212.0	70	130	LLICV Main CR1 Failed
Fe	56	1	nogas	546.556	1.640	10531163	2.08	500	109.3	70	130	
Se	77	1	nogas	209.634	4.660	47313	3.34	5	4192.7	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	5.040	15.535	1297	9.77	5	100.8	70	130	
Mo	95	1	nogas	5.247	3.369	24274	3.99	5	104.9	70	130	
Sn	118	1	nogas	5.296	2.898	37358	4.19	5	105.9	70	130	
Ba	137	1	nogas	5.148	4.362	17109	3.16	5	103.0	70	130	
Sb	121	2	He	5.436	5.116	11728	3.07	5	108.7	70	130	
Li	7	1	nogas	4.623	2.638	78777	1.58	5	92.5	70	130	
P	31	1	nogas	-9.942	-16.357	66388	2.14	25	-39.8	70	130	LLICV Main CR1 Failed
La	139	1	nogas	-68.632	-23.297	90	19.25	5	-1372.6	70	130	LLICV Main CR1 Failed
Au	197	1	nogas	91.846	71.076	13	43.30	5	1836.9	70	130	LLICV Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	465664	1.20	409846	113.62	70	125	
Ge	72	1	nogas	2464137	0.98	1928234	127.79	70	125	ISTD Failed
In	115	1	nogas	2592699	1.75	2023507	128.13	70	125	ISTD Failed
Bi	209	1	nogas	2392031	1.18	1855077	128.95	70	125	ISTD Failed

Ge	72	2	He	408807	2.28	314233	130.10	70	125	ISTD Failed

Sample Report

Sample Table

Sample Name	LLCCV2
Data File Name	144SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T17:43:40-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	1.730	1.730	4.11	5851	0.03	2000	
Na	23	1	nogas	426.847	426.847	3.48	8234471	0.01	200000	
Mg	24	1	nogas	211.030	211.030	2.55	2050053	0.01	200000	
Al	27	1	nogas	-0.061	-0.061	-413.25	68758	0.00	2000	
K	39	1	nogas	188.663	188.663	5.76	6652982	0.00	200000	
Ti	47	1	nogas	1.947	1.947	9.28	2620	0.07	2000	
V	51	1	nogas	41.336	41.336	4.74	893493	0.00	2000	
Cr	52	1	nogas	2.467	2.467	2.37	57809	0.00	2000	
Mn	55	1	nogas	2.410	2.410	2.56	54703	0.00	2000	
Co	59	1	nogas	2.010	2.010	5.38	36064	0.01	2000	
Ni	60	1	nogas	1.663	1.663	6.48	10110	0.02	2000	
Cu	63	1	nogas	1.098	1.098	6.19	24247	0.00	2000	
Zn	66	1	nogas	2.020	2.020	3.58	8172	0.02	2000	
As	75	1	nogas	32.563	32.563	3.89	145435	0.02	2000	
Sr	88	1	nogas	2.191	2.191	0.35	45011	0.00	2000	
Ag	107	1	nogas	2.138	2.138	2.54	25379	0.01	2000	
Cd	111	1	nogas	1.942	1.942	3.87	5081	0.04	2000	
Sb	121	1	nogas	2.084	2.084	2.81	24264	0.01	2000	
Tl	205	1	nogas	2.001	2.001	0.54	39904	0.01	2000	
Pb	208	1	nogas	2.071	2.071	0.29	59568	0.00	2000	
U	238	1	nogas	2.035	2.035	1.43	59728	0.00	2000	
[Pb]	206	1	nogas	2.121	2.121	2.05	14791	0.01	2000	
[Pb]	207	1	nogas	2.030	2.030	1.54	13169	0.02	2000	
Na	23	2	He	387.683	387.683	4.58	466562	0.08	200000	
Mg	24	2	He	205.290	205.290	2.08	77900	0.26	200000	
Al	27	2	He	-0.216	-0.216	-186.13	880	-0.02	2000	
K	39	2	He	336.059	336.059	0.72	146885	0.23	200000	
Ca	43	2	He	197.554	197.554	21.74	220	89.79	200000	
Ca	44	2	He	78.402	78.402	7.25	3647	2.15	200000	
V	51	2	He	2.746	2.746	1.48	10574	0.03	2000	
Cr	52	2	He	1.613	1.613	8.26	10700	0.02	2000	
Mn	55	2	He	1.797	1.797	5.16	5081	0.04	2000	
Fe	56	2	He	198.396	198.396	2.96	694522	0.03	200000	
Co	59	2	He	2.028	2.028	6.19	11858	0.02	2000	
Ni	60	2	He	1.489	1.489	4.66	3197	0.05	2000	
Cu	63	2	He	0.737	0.737	5.42	9493	0.01	2000	
Zn	66	2	He	1.546	1.546	22.16	1924	0.08	2000	
As	75	2	He	2.242	2.242	6.64	1403	0.16	2000	
Se	78	2	He	1.381	1.381	6.10	99	1.40	2000	
B	11	1	nogas	33.575	33.575	1.25	77862	0.04	2000	
Si	28	1	nogas	92.780	92.780	5.91	1179506	0.01	2000	
Ca	43	1	nogas	225.515	225.515	9.76	6265	3.60	200000	

Ca	44	1	nogas	-1389.978	-1389.978	-0.49	155738	-0.89	200000	
Fe	56	1	nogas	229.197	229.197	2.31	4690770	0.00	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Se	77	1	nogas	206.635	206.635	6.18	46160	0.45	2000	
Se	82	1	nogas	1.295	1.295	30.48	660	0.20	2000	
Mo	95	1	nogas	2.035	2.035	5.89	9500	0.02	2000	
Sn	118	1	nogas	2.056	2.056	0.61	15134	0.01	2000	
Ba	137	1	nogas	1.991	1.991	0.42	6775	0.03	2000	
Sb	121	2	He	2.129	2.129	2.08	4787	0.04	2000	
La	139	1	nogas	-99.134	-99.134	-18.12	60	-165.22	2000	
Au	197	1	nogas	127.088	127.088	90.73	10	1270.88	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	475019	0.56	409846	115.90	70	125	
Ge	72	1	nogas	2431509	1.28	1928234	126.10	70	125	ISTD Failed
In	115	1	nogas	2613279	1.55	2023507	129.15	70	125	ISTD Failed
Bi	209	1	nogas	2348680	0.74	1855077	126.61	70	125	ISTD Failed
Ge	72	2	He	398255	1.96	314233	126.74	70	125	ISTD Failed

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	145ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T17:46:36-05:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.006	94.6	43	48.0	0	ICSA Main CR1 Failed
Na	23	1	nogas	102152.494	1.5	1420213065	2.0	0	
Mg	24	1	nogas	100663.227	1.0	957655121	1.5	0	
Al	27	1	nogas	91349.342	1.6	727347909	1.9	0	
K	39	1	nogas	100549.630	2.0	1139484459	2.2	0	
Ti	47	1	nogas	2069.451	1.1	2511792	1.1	0	
V	51	1	nogas	17.882	10.3	456535	5.7	0	
Cr	52	1	nogas	1.568	6.1	42864	2.4	0	ICSA Main CR1 Failed
Mn	55	1	nogas	0.478	5.3	16021	3.2	0	ICSA Main CR1 Failed
Co	59	1	nogas	0.065	17.5	1580	11.4	0	ICSA Main CR1 Failed
Ni	60	1	nogas	0.171	13.4	4054	1.3	0	ICSA Main CR1 Failed
Cu	63	1	nogas	-0.191	-34.7	11187	7.4	0	ICSA Main CR1 Failed
Zn	66	1	nogas	1.429	3.0	6271	3.0	0	ICSA Main CR1 Failed
As	75	1	nogas	20.313	7.3	102887	3.4	0	
Sr	88	1	nogas	1.036	4.0	21514	2.2	0	ICSA Main CR1 Failed
Ag	107	1	nogas	0.024	6.1	393	2.9	0	ICSA Main CR1 Failed
Cd	111	1	nogas	0.942	7.6	2294	8.7	0	ICSA Main CR1 Failed
Sb	121	1	nogas	-0.023	-46.9	2314	5.9	0	ICSA Main CR1 Failed
Tl	205	1	nogas	0.023	16.5	600	12.0	0	ICSA Main CR1 Failed
Pb	208	1	nogas	0.089	10.4	3097	9.0	0	ICSA Main CR1 Failed
[Pb]	206	1	nogas	0.098	10.5	807	7.2	0	ICSA Main CR1 Failed
[Pb]	207	1	nogas	0.088	27.1	703	21.4	0	ICSA Main CR1 Failed
Na	23	2	He	91611.821	1.0	63172107	1.3	0	
Mg	24	2	He	89713.387	1.0	32944479	1.6	0	
Al	27	2	He	58064.952	1.4	9318901	1.0	0	
K	39	2	He	118639.010	1.0	28466352	1.0	0	
Ca	43	2	He	87014.400	1.9	85525	2.2	0	
Ca	44	2	He	89580.466	2.8	1495749	2.0	0	
V	51	2	He	0.099	56.6	2119	7.3	0	ICSA Main CR1 Failed
Cr	52	2	He	0.810	10.0	7315	4.0	0	ICSA Main CR1 Failed
Mn	55	2	He	-0.047	-132.4	670	22.6	0	ICSA Main CR1 Failed
Fe	56	2	He	88473.819	2.6	298380989	2.1	0	
Co	59	2	He	-0.001	-1353.2	133	30.3	0	ICSA Main CR1 Failed
Ni	60	2	He	-0.403	-4.8	250	12.0	0	ICSA Main CR1 Failed
Cu	63	2	He	-1.209	-0.8	1397	3.7	0	ICSA Main CR1 Failed
Zn	66	2	He	-0.359	-20.2	383	15.7	0	ICSA Main CR1 Failed
As	75	2	He	0.326	16.9	271	12.6	0	ICSA Main CR1 Failed
Se	78	2	He	-0.103	-331.4	42	29.0	0	ICSA Main CR1 Failed
B	11	1	nogas	22.547	9.0	59160	5.1	0	
Si	28	1	nogas	21.191	4.6	809988	1.1	0	
Ca	43	1	nogas	96657.175	1.1	2286036	1.1	0	
Ca	44	1	nogas	98972.926	1.0	37079911	2.2	0	
Fe	56	1	nogas	98929.129	1.2	1758721706	0.5	0	
Se	77	1	nogas	138.097	7.9	34066	3.8	0	
Se	82	1	nogas	-0.148	-298.7	417	16.3	0	ICSA Main CR1 Failed
Mo	95	1	nogas	2065.902	1.8	9192573	1.0	0	
Sn	118	1	nogas	0.052	18.4	1120	4.7	0	ICSA Main CR1 Failed
Ba	137	1	nogas	0.042	49.1	280	21.7	0	ICSA Main CR1 Failed
Sb	121	2	He	-0.042	-99.9	413	20.1	0	ICSA Main CR1 Failed

P	31	1	nogas	91661.144	0.6	72503712	1.0	0	
La	139	1	nogas	171.149	27.7	307	15.4	0	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	504999	2.82	409846	123.22	70	125	
Ge	72	1	nogas	2406302	1.66	1928234	124.79	70	125	
In	115	1	nogas	2428807	1.03	2023507	120.03	70	125	
Bi	209	1	nogas	2197046	1.15	1855077	118.43	70	125	
Ge	72	2	He	388874	0.95	314233	123.75	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	146ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\050
Acq Date Time	2017-05-02T17:49:46-05:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	82.358	4.052	277819	1.50	100	82.4	80	120	
Na	23	1	nogas	118924.653	2.248	1593723636	0.96	100	118924.7	80	120	ICSB Main CR1 Failed
Mg	24	1	nogas	112143.377	0.128	1028807856	1.39	100	112143.4	80	120	
Al	27	1	nogas	95159.047	2.834	730519242	0.90	100	95159.0	80	120	ICSB Main CR1 Failed
K	39	1	nogas	112816.040	1.550	1232381794	0.70	100	112816.0	80	120	ICSB Main CR1 Failed
Ti	47	1	nogas	2211.654	0.986	2588910	1.08	100	2211.7	80	120	ICSB Main CR1 Failed
V	51	1	nogas	106.695	2.319	2001883	0.94	100	106.7	80	120	
Cr	52	1	nogas	91.526	3.056	1425280	1.09	100	91.5	80	120	
Mn	55	1	nogas	91.492	2.672	1746979	1.72	100	91.5	80	120	
Co	59	1	nogas	88.847	2.183	1503816	1.14	100	88.8	80	120	
Ni	60	1	nogas	84.265	2.416	327582	0.73	100	84.3	80	120	
Cu	63	1	nogas	83.847	2.001	816827	0.17	100	83.8	80	120	
Zn	66	1	nogas	91.776	1.473	273936	0.49	100	91.8	80	120	
As	75	1	nogas	109.786	2.079	388173	0.16	100	109.8	80	120	
Sr	88	1	nogas	97.116	4.048	1866352	2.26	100	97.1	80	120	
Ag	107	1	nogas	90.127	0.990	1016960	1.36	100	90.1	80	120	
Cd	111	1	nogas	91.565	1.316	220953	1.20	100	91.6	80	120	
Sb	121	1	nogas	97.072	4.065	966529	2.29	100	97.1	80	120	
Tl	205	1	nogas	92.522	1.893	1665397	1.95	100	92.5	80	120	
Pb	208	1	nogas	93.880	0.845	2417424	1.19	100	93.9	80	120	
U	238	1	nogas	98.659	2.395	2619452	2.04	100	98.7	80	120	
[Pb]	206	1	nogas	92.982	0.306	580735	0.67	100	93.0	80	120	
[Pb]	207	1	nogas	92.532	0.561	536758	0.86	100	92.5	80	120	
Na	23	2	He	104041.447	2.091	69335996	2.60	100	104041.4	80	120	ICSB Main CR1 Failed
Mg	24	2	He	102275.054	2.071	36310215	2.77	100	102275.1	80	120	ICSB Main CR1 Failed
Al	27	2	He	59650.828	2.161	9256361	2.86	100	59650.8	80	120	ICSB Main CR1 Failed
K	39	2	He	128109.234	1.388	30733343	1.38	100	128109.2	80	120	
Ca	43	2	He	98116.594	1.224	93223	1.20	100	98116.6	80	120	
Ca	44	2	He	99690.106	1.796	1609162	1.95	100	99690.1	80	120	
V	51	2	He	88.384	1.265	266579	1.98	100	88.4	80	120	
Cr	52	2	He	84.762	2.131	324253	2.68	100	84.8	80	120	
Mn	55	2	He	81.963	3.087	185275	2.84	100	82.0	80	120	
Fe	56	2	He	100079.534	2.013	326309208	1.78	100	100079.5	80	120	
Co	59	2	He	85.879	2.248	468695	1.78	100	85.9	80	120	
Ni	60	2	He	81.609	2.801	120511	2.04	100	81.6	80	120	
Cu	63	2	He	82.766	2.157	329798	1.40	100	82.8	80	120	
Zn	66	2	He	88.602	0.541	67747	0.57	100	88.6	80	120	
As	75	2	He	91.593	0.536	50933	1.24	100	91.6	80	120	
Se	78	2	He	87.172	0.452	3124	1.06	100	87.2	80	120	
B	11	1	nogas	485.086	5.058	984711	0.12	100	485.1	80	120	
Si	28	1	nogas	4847.444	2.040	24017677	0.11	100	4847.4	80	120	ICSB Main CR1 Failed
Ca	43	1	nogas	108428.433	1.340	2473004	0.62	100	108428.4	80	120	
Ca	44	1	nogas	109708.034	0.972	39564840	0.99	100	109708.0	80	120	
Fe	56	1	nogas	110065.948	3.325	1886627376	1.77	100	110065.9	80	120	
Se	77	1	nogas	232.178	3.386	48235	1.73	100	232.2	80	120	
Se	82	1	nogas	92.711	2.488	15064	0.77	100	92.7	80	120	
Mo	95	1	nogas	2197.887	2.186	9431511	1.01	100	2197.9	80	120	ICSB Main CR1 Failed
Sn	118	1	nogas	92.890	2.760	596441	2.28	100	92.9	80	120	
Ba	137	1	nogas	93.403	2.493	286299	1.83	100	93.4	80	120	
Sb	121	2	He	98.098	2.776	186610	3.26	100	98.1	80	120	
La	139	1	nogas	373.244	14.298	490	9.35	100	373.2	80	120	ICSB Main CR1 Failed

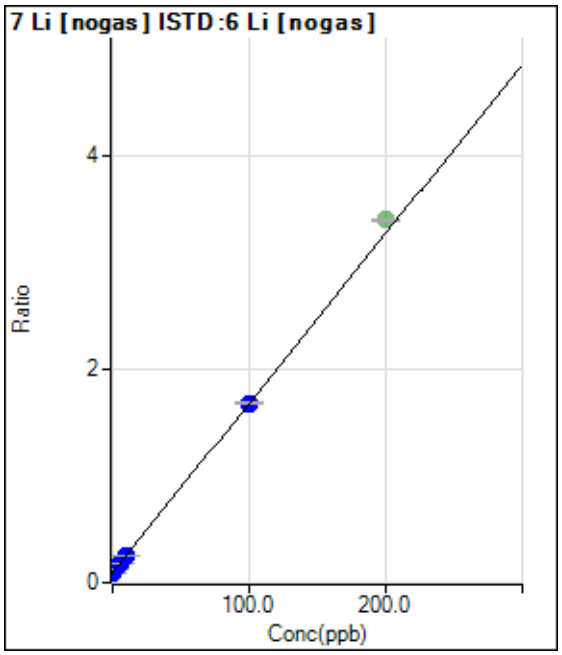
QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	475841	4.93	409846	116.10	70	125	
Ge	72	1	nogas	2320783	1.95	1928234	120.36	70	125	
In	115	1	nogas	2411914	0.65	2023507	119.19	70	125	
Bi	209	1	nogas	2129973	0.37	1855077	114.82	70	125	
Ge	72	2	He	375935	0.73	314233	119.64	70	125	

Calibration for 010_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\050217A.b\
Analysis File: 050217A.batch.bin
DA Date-Time: 2017-05-02 12:41:01
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

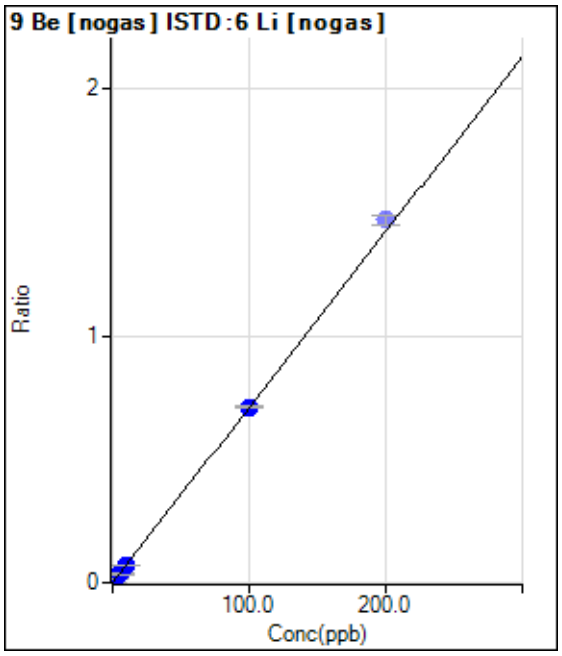
Level	Standard Data File	Sample Name	Acq. Date-Time
1	004CALB.d	CAL BLK	2017-05-02 10:45:01
2	005CALS.d	2/10/200	2017-05-02 10:47:59
3	006CALS.d	5/25/500	2017-05-02 10:50:56
4	007CALS.d	10/50/1000	2017-05-02 10:53:52
5	008CALS.d	100/500/10K	2017-05-02 10:56:47
6	009CALS.d	200/1000/20K	2017-05-02 10:59:53
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	39288.82	0.0959	P	2.0
2	☐	2.000	1.770	49854.31	0.1239	P	3.1
3	☐	5.000	4.941	69422.83	0.1742	P	1.5
4	☐	10.000	9.988	100548.67	0.2542	P	0.8
5	☐	100.000	100.009	618213.22	1.6815	P	0.5
6	☑	200.000		1150228.45	3.3982	A	0.7
7	☐	1.000					

y = 0.0159 * x + 0.0959
R = 1.0000
DL = 0.3691
BEC = 6.048

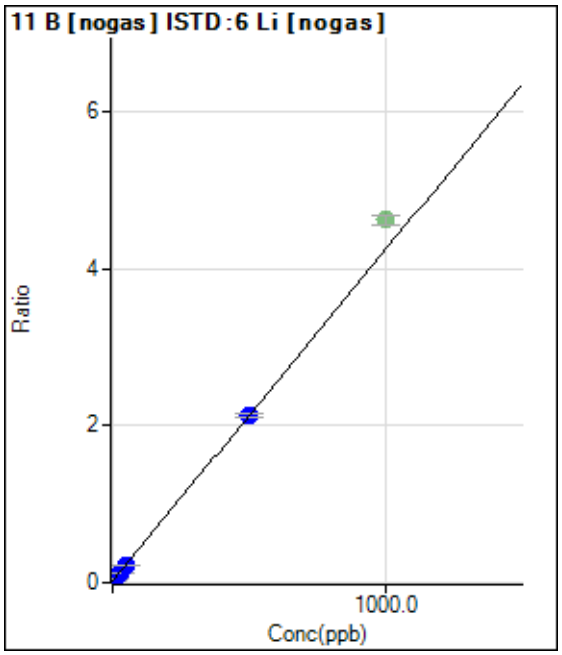
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.67	0.0000	P	92.7
2	☐	2.000	2.005	5741.11	0.0143	P	3.9
3	☐	5.000	4.998	14142.45	0.0355	P	4.8
4	☐	10.000	10.112	28402.27	0.0718	P	2.1
5	☐	100.000	99.989	260930.23	0.7097	P	1.3
6	☑	200.000		496975.93	1.4686	P	2.7
7	☐	1.000					

y = 0.0071 * x + 4.1182E-005
R = 1.0000
DL = 0.01613
BEC = 0.005802

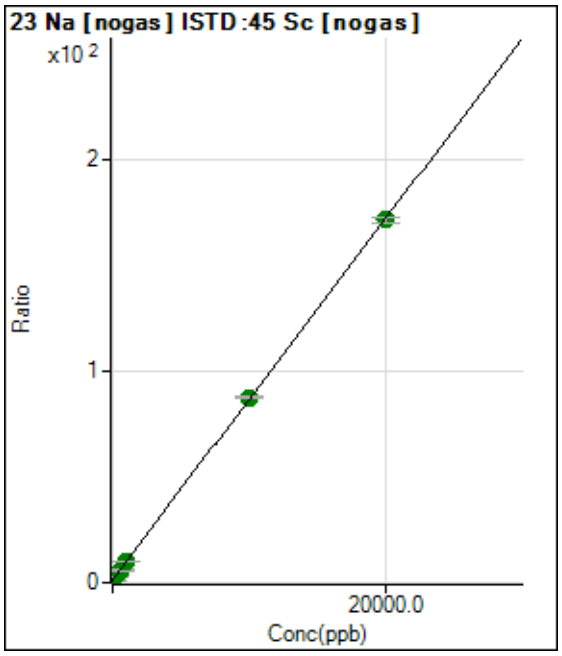
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8995.81	0.0220	P	5.4
2	☐	10.000	8.825	23859.31	0.0593	P	1.1
3	☐	25.000	23.719	48687.47	0.1222	P	4.0
4	☐	50.000	49.168	90900.48	0.2298	P	0.8
5	☐	500.000	500.171	785599.96	2.1366	P	1.6
6	☑	1000.000		1566537.16	4.6294	A	2.7
7	☐	5.000					

y = 0.0042 * x + 0.0220
R = 1.0000
DL = 0.8455
BEC = 5.196

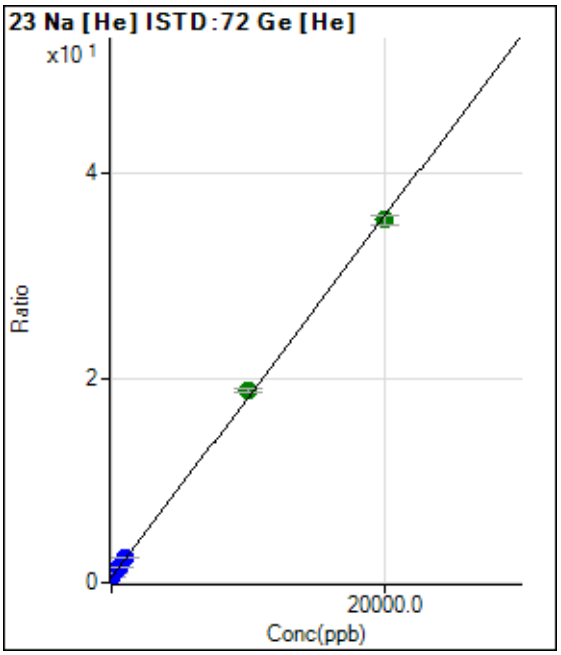
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1814357.14	1.3329	A	0.6
2	☐	200.000	204.982	4223001.40	3.0791	A	1.9
3	☐	500.000	535.820	8014441.32	5.8974	A	2.7
4	☐	1000.000	1053.186	14069550.31	10.3048	A	1.3
5	☐	10000.00	10100.81	115736677.5	87.3801	A	1.6
6	☐	20000.00	19945.99	224607430.0	171.249	A	1.3
7	☐	100.000					

y = 0.0085 * x + 1.3329
R = 1.0000
DL = 2.905
BEC = 156.5

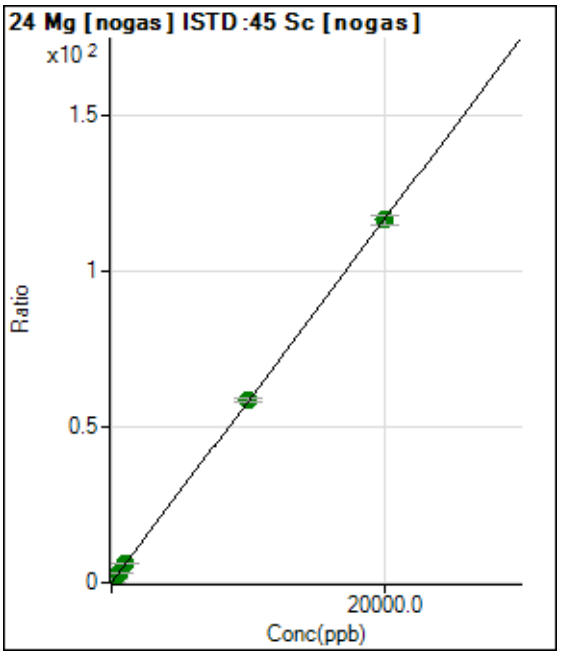
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	152821.57	0.4865	P	2.2
2	☐	200.000	211.464	276493.46	0.8603	P	0.5
3	☐	500.000	548.229	459439.72	1.4557	P	1.1
4	☐	1000.000	1122.810	776807.59	2.4715	P	0.5
5	☐	10000.00	10369.65	5810858.25	18.8193	A	1.7
6	☐	20000.00	19807.71	10902336.51	35.5052	A	2.8
7	☐	100.000					

y = 0.0018 * x + 0.4865
R = 0.9998
DL = 17.77
BEC = 275.2

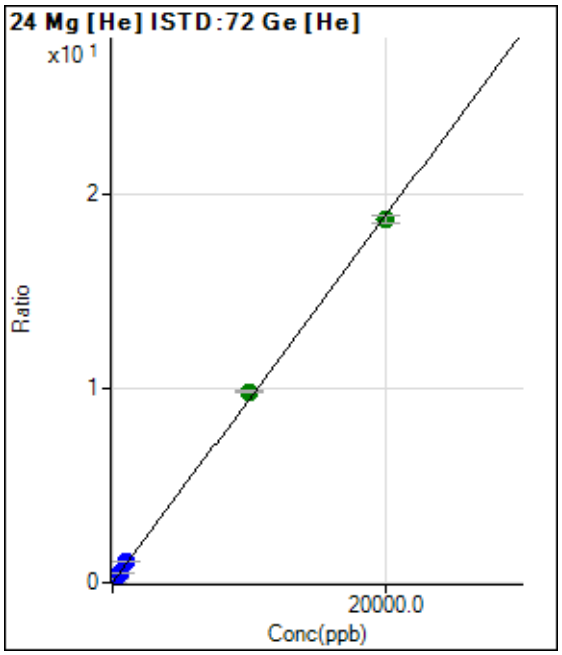
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7004.17	0.0051	P	2.9
2	☐	200.000	215.989	1736356.62	1.2661	A	2.9
3	☐	500.000	535.836	4258112.20	3.1335	A	3.6
4	☐	1000.000	1064.810	8496181.96	6.2217	A	0.8
5	☐	10000.00	10041.76	77671068.40	58.6312	A	1.9
6	☐	20000.00	19974.81	152908190.9	116.622	A	3.0
7	☐	100.000					

y = 0.0058 * x + 0.0051
R = 1.0000
DL = 0.07634
BEC = 0.8812

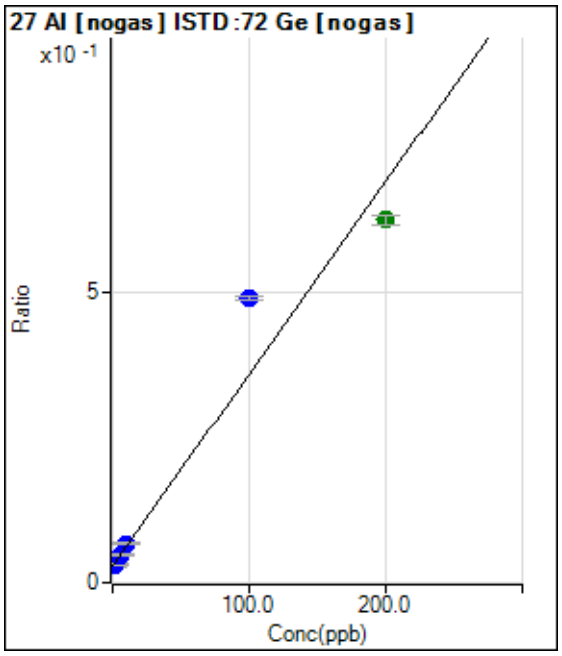
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	563.37	0.0018	P	21.4
2	☐	200.000	222.365	68054.60	0.2118	P	1.8
3	☐	500.000	565.538	169099.54	0.5358	P	1.9
4	☐	1000.000	1163.305	345826.76	1.1003	P	0.2
5	☐	10000.00	10427.16	3040539.02	9.8479	A	1.6
6	☐	20000.00	19776.39	5735264.29	18.6761	A	2.1
7	☐	100.000					

y = 9.4427E-004 * x + 0.0018
R = 0.9997
DL = 1.217
BEC = 1.896

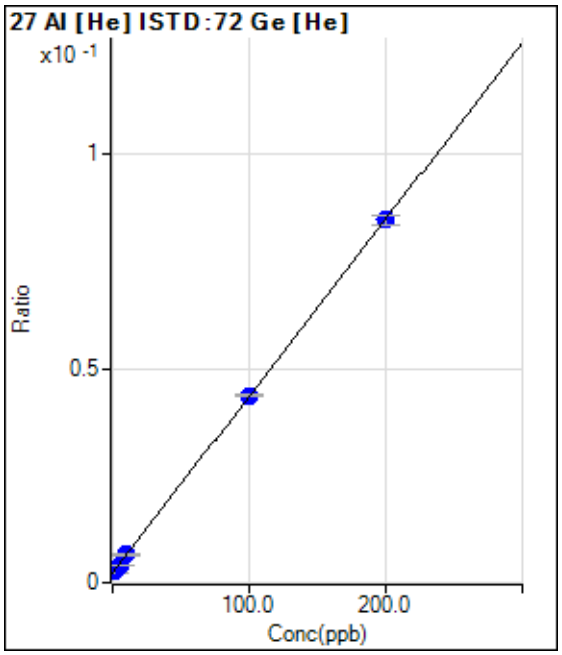
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	54916.02	0.0285	P	3.6
2	☐	2.000	0.885	60971.17	0.0314	P	1.2
3	☐	5.000	5.846	92551.41	0.0478	P	1.7
4	☐	10.000	11.803	128804.77	0.0675	P	1.5
5	☐	100.000	139.196	934164.57	0.4891	P	1.5
6	☐	200.000	180.302	1183962.51	0.6251	A	2.8
7	☐	1.000					

y = 0.0033 * x + 0.0285
R = 0.9721
DL = 0.9387
BEC = 8.609

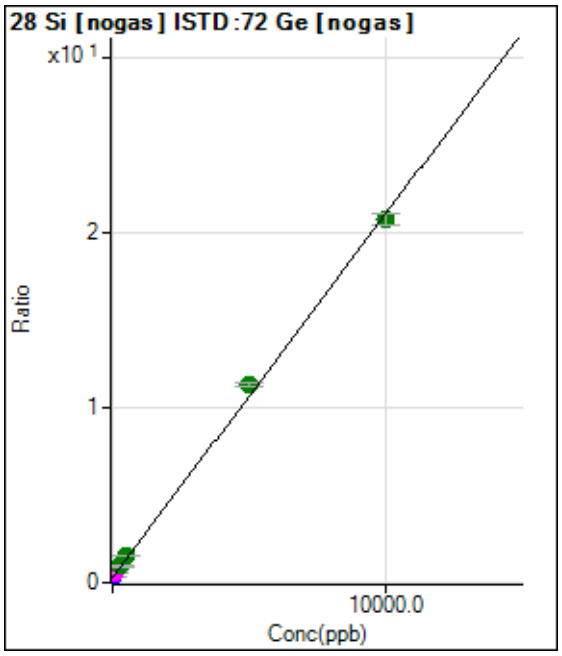
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.951	846.72	0.0027	P	20.1
2	☐	2.000	1.067	880.05	0.0027	P	22.8
3	☐	5.000	4.231	1276.77	0.0040	P	3.2
4	☐	10.000	10.527	2086.94	0.0066	P	6.1
5	☐	100.000	100.443	13508.69	0.0437	P	1.3
6	☐	200.000	199.781	26022.19	0.0847	P	2.7
7	☐	1.000					

y = 4.1269E-004 * x + 0.0023
R = 1.0000
DL = 3.931
BEC = 5.567

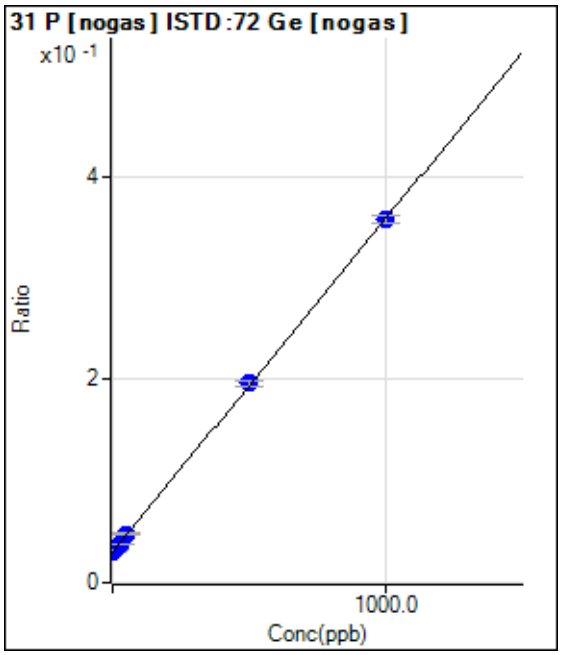
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	564283.29	0.2927	P	0.8
2	☐	100.000	124.346	1069127.93	0.5507	M	3.6
3	☐	250.000	311.163	1815684.82	0.9384	A	2.0
4	☐	500.000	611.175	2976851.72	1.5609	A	2.1
5	☐	5000.000	5296.721	21553064.68	11.2839	A	2.2
6	☐	10000.00	9844.308	39245060.25	20.7206	A	3.2
7	☐	5.000					

y = 0.0021 * x + 0.2927
R = 0.9994
DL = 3.334
BEC = 141

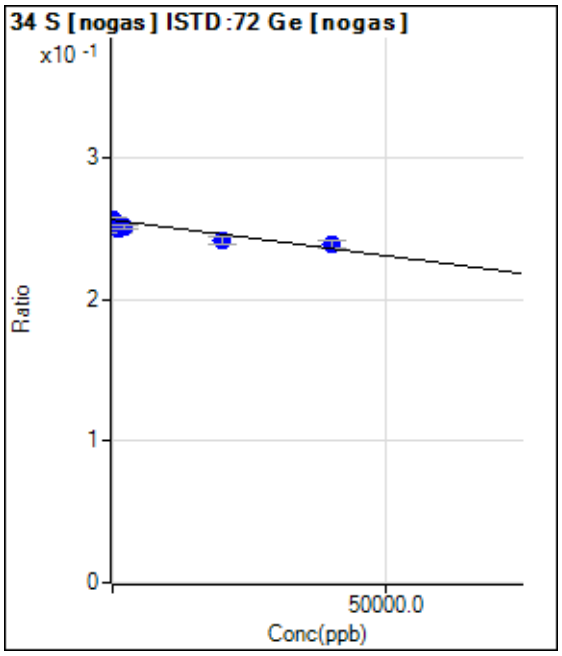
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	58237.81	0.0302	P	2.1
2	☐	10.000	7.968	63699.18	0.0328	P	1.4
3	☐	25.000	24.034	73738.76	0.0381	P	0.3
4	☐	50.000	53.091	90858.51	0.0476	P	3.5
5	☐	500.000	505.703	374896.58	0.1963	P	3.1
6	☐	1000.000	997.038	677411.19	0.3576	P	2.0
7	☐	5.000					

y = 3.2841E-004 * x + 0.0302
R = 1.0000
DL = 5.708
BEC = 91.98

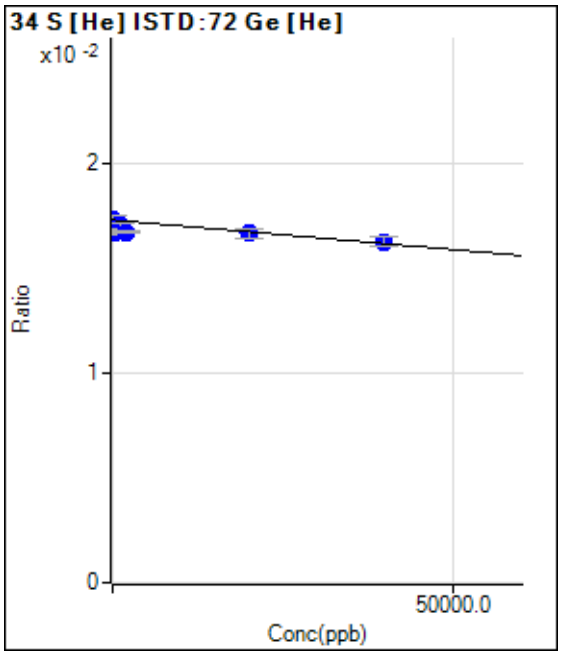
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	493964.73	0.2562	P	1.6
2	☐	400.000	9039.412	488309.89	0.2516	P	1.7
3	☐	1000.000	13153.29	482823.18	0.2495	P	2.5
4	☐	2000.000	10371.56	478610.22	0.2510	P	0.8
5	☐	20000.00	29067.94	461213.12	0.2415	P	2.3
6	☐	40000.00	34657.22	452026.22	0.2387	P	2.2
7	☐	100.000					

y = -5.0630E-007 * x + 0.2562
R = -0.9201
DL = -2.443E+04
BEC = -5.06E+05

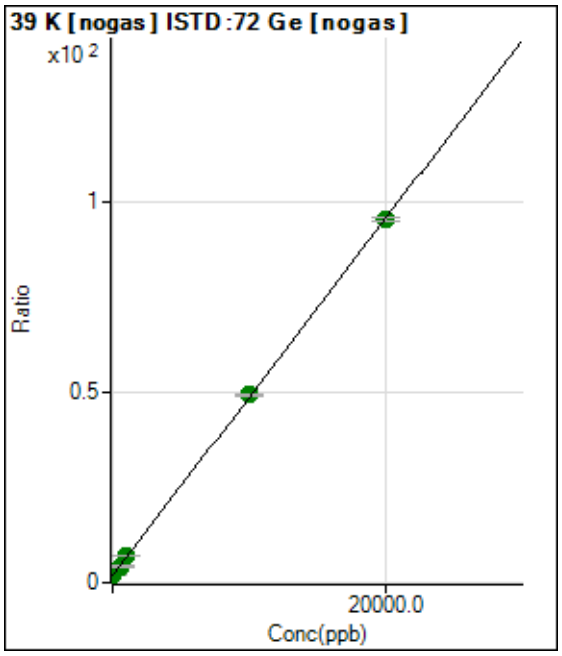
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5428.13	0.0173	P	2.2
2	☐	400.000	20561.41	5367.44	0.0167	P	1.4
3	☐	1000.000	9919.454	5365.44	0.0170	P	1.6
4	☐	2000.000	20161.08	5252.41	0.0167	P	0.4
5	☐	20000.00	22311.79	5140.05	0.0167	P	2.8
6	☐	40000.00	37511.44	4983.34	0.0162	P	2.7
7	☐	100.000					

y = -2.8194E-008 * x + 0.0173
R = -0.8113
DL = -4.136E+04
BEC = -6.129E+05

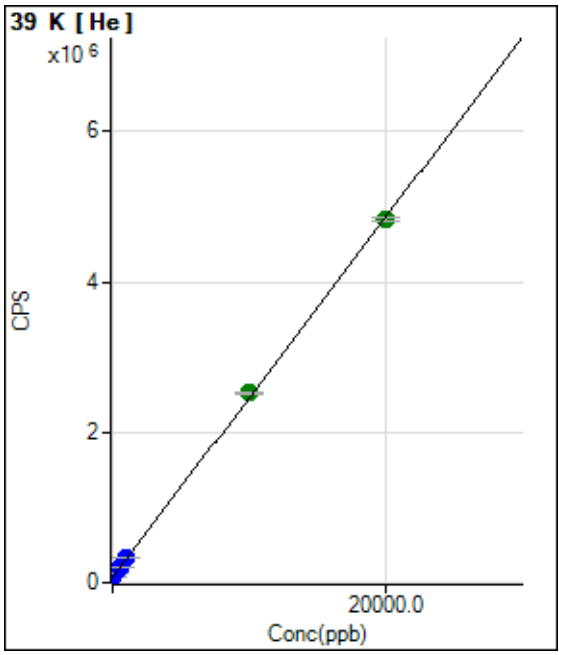
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3569598.00	1.8515	A	1.9
2	☐	200.000	206.111	5469828.51	2.8184	A	1.5
3	☐	500.000	517.063	8275296.02	4.2772	A	2.9
4	☐	1000.000	1089.760	13281760.71	6.9640	A	0.5
5	☐	10000.00	10120.79	94241508.35	49.3325	A	1.7
6	☐	20000.00	19934.62	180697387.3	95.3735	A	1.1
7	☐	100.000					

y = 0.0047 * x + 1.8515
R = 1.0000
DL = 22.78
BEC = 394.7

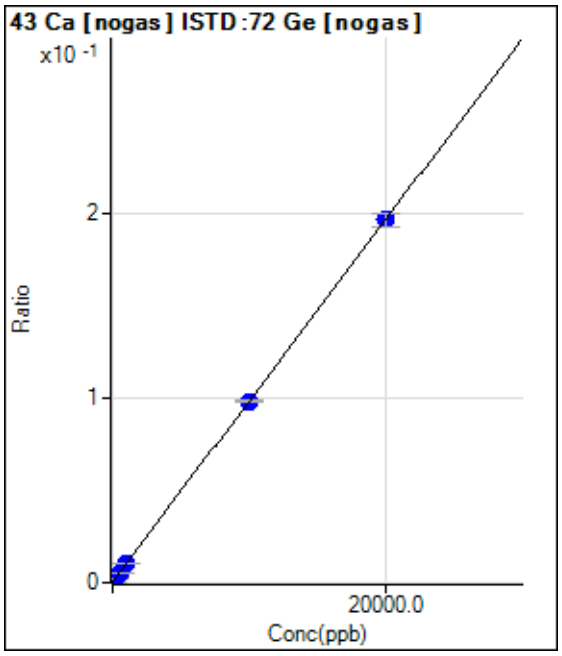
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	66438.85		P	1.8
2	☐	200.000	217.063	118399.49		P	0.4
3	☐	500.000	555.163	199334.18		P	0.8
4	☐	1000.000	1111.743	332568.94		P	0.4
5	☐	10000.00	10250.38	2520185.33		A	0.9
6	☐	20000.00	19867.67	4822379.72		A	1.1
7	☐	100.000					

y = 239.3809 * x + 66438.8533
R = 0.9999
DL = 14.7
BEC = 277.5

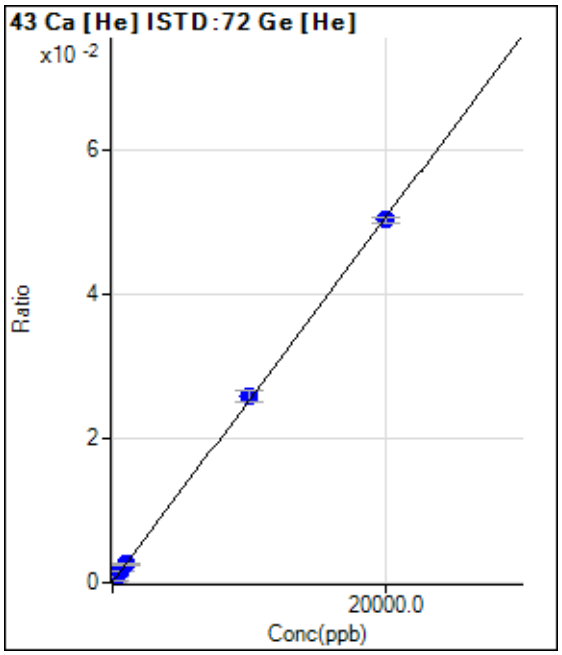
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	700.04	0.0004	P	31.7
2	☐	200.000	196.363	4447.37	0.0023	P	3.9
3	☐	500.000	505.239	10319.93	0.0053	P	8.3
4	☐	1000.000	1051.631	20398.63	0.0107	P	0.4
5	☐	10000.00	9996.465	188336.51	0.0986	P	1.3
6	☐	20000.00	19999.09	372853.66	0.1969	P	3.6
7	☐	100.000					

y = 9.8260E-006 * x + 3.6224E-004
R = 1.0000
DL = 35.01
BEC = 36.87

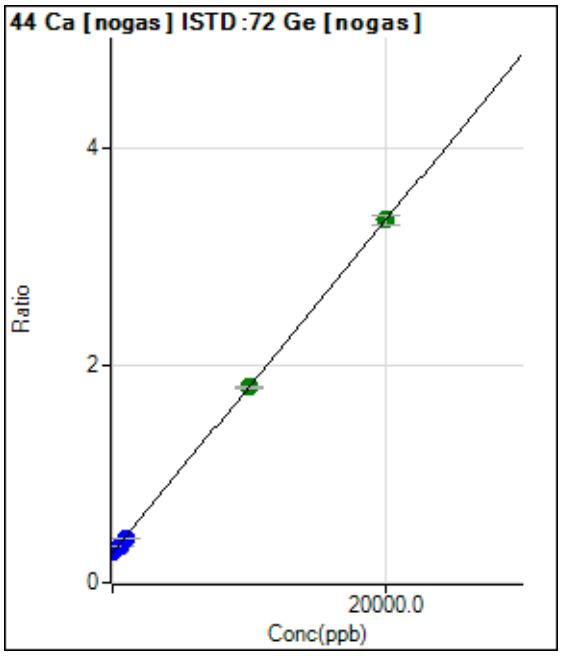
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.67	0.0001	P	90.8
2	☐	200.000	188.971	170.01	0.0005	P	53.5
3	☐	500.000	606.226	500.03	0.0016	P	3.9
4	☐	1000.000	1011.072	820.05	0.0026	P	11.0
5	☐	10000.00	10219.78	7985.37	0.0259	P	6.8
6	☐	20000.00	19887.00	15450.35	0.0503	P	1.4
7	☐	100.000					

y = 2.5269E-006 * x + 5.2594E-005
R = 0.9999
DL = 56.7
BEC = 20.81

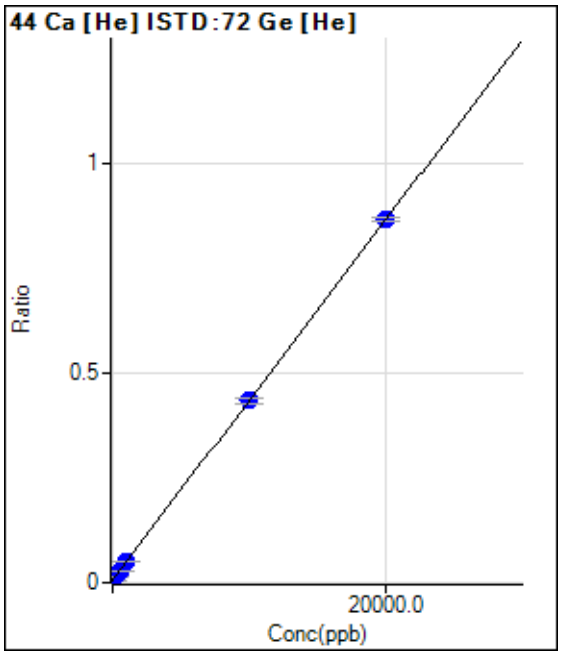
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	533255.80	0.2766	P	1.6
2	☐	200.000	113.579	570453.66	0.2939	P	1.3
3	☐	500.000	362.362	642349.39	0.3320	P	2.5
4	☐	1000.000	900.341	790041.39	0.4142	P	0.4
5	☐	10000.00	9959.607	3437175.58	1.7993	A	0.7
6	☐	20000.00	20029.48	6323842.20	3.3389	A	2.8
7	☐	100.000					

y = 1.5289E-004 * x + 0.2766
R = 1.0000
DL = 89.33
BEC = 1809

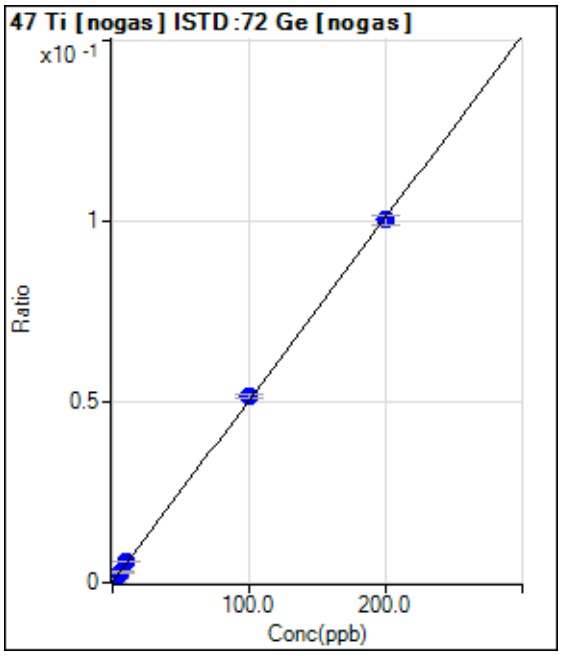
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1820.17	0.0058	P	5.2
2	☐	200.000	190.461	4487.40	0.0140	P	3.7
3	☐	500.000	530.637	9009.19	0.0285	P	3.8
4	☐	1000.000	1036.495	15787.33	0.0502	P	3.9
5	☐	10000.00	9964.153	133679.10	0.4331	P	3.0
6	☐	20000.00	20015.42	265374.44	0.8640	P	1.0
7	☐	100.000					

y = 4.2879E-005 * x + 0.0058
R = 1.0000
DL = 21.26
BEC = 135.2

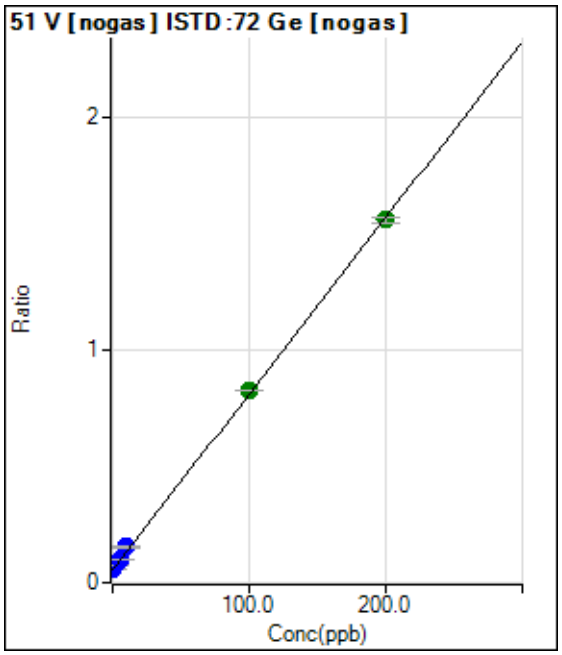
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	183.34	0.0001	P	49.5
2	☐	2.000	2.240	2376.92	0.0012	P	8.8
3	☐	5.000	5.298	5354.36	0.0028	P	13.9
4	☐	10.000	11.444	11190.42	0.0059	P	1.4
5	☐	100.000	102.216	98659.96	0.0517	P	1.5
6	☐	200.000	198.810	190116.24	0.1004	P	2.4
7	☐	1.000					

y = 5.0441E-004 * x + 9.5179E-005
R = 0.9999
DL = 0.2804
BEC = 0.1887

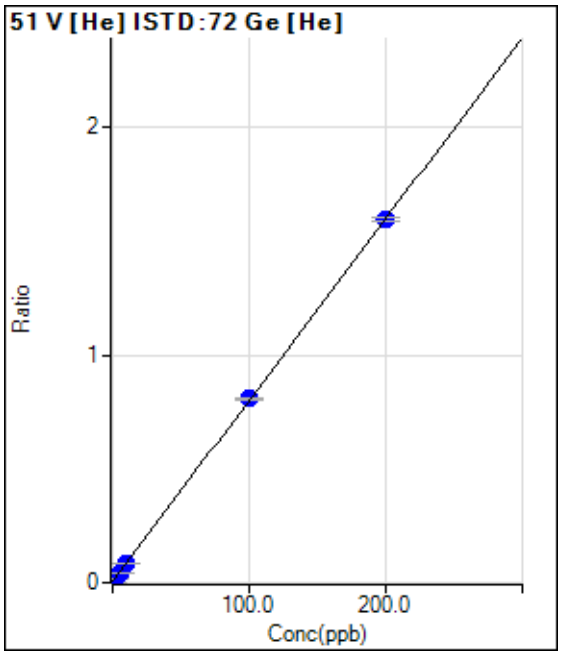
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	104868.85	0.0544	P	1.0
2	☐	2.000	2.303	139395.16	0.0718	P	3.4
3	☐	5.000	6.122	194989.72	0.1008	P	2.4
4	☐	10.000	13.113	293236.14	0.1537	P	1.8
5	☐	100.000	101.862	1578225.55	0.8262	A	0.6
6	☐	200.000	198.882	2957387.04	1.5613	A	1.6
7	☐	1.000					

y = 0.0076 * x + 0.0544
R = 0.9999
DL = 0.2132
BEC = 7.178

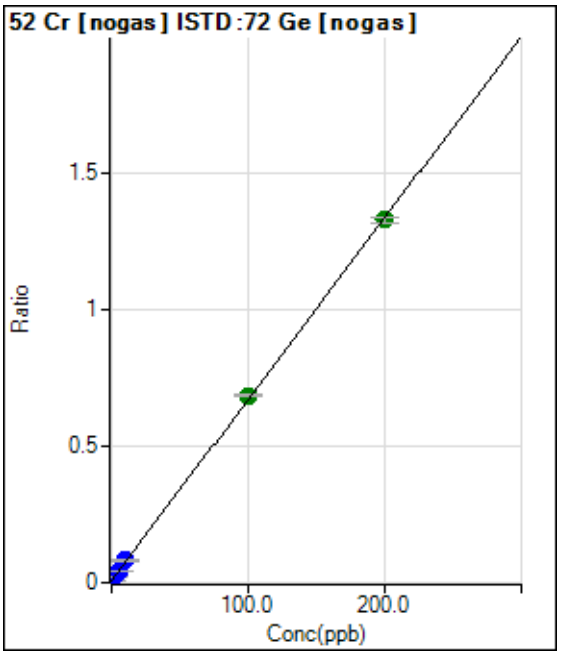
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.324	652.68	0.0021	P	10.8
2	☐	2.000	1.709	5874.98	0.0183	P	4.0
3	☐	5.000	4.971	13973.38	0.0443	P	2.5
4	☐	10.000	10.268	27186.16	0.0865	P	1.1
5	☐	100.000	100.774	249436.56	0.8078	P	0.6
6	☐	200.000	199.603	490007.22	1.5955	P	1.2
7	☐	1.000					

y = 0.0080 * x + 0.0047
R = 1.0000
DL = 0.08483
BEC = 0.5854

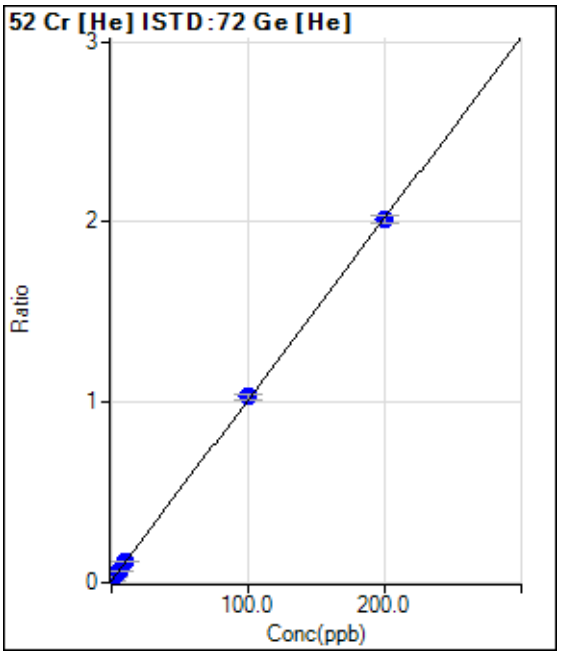
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14305.99	0.0074	P	4.0
2	☐	2.000	2.146	42019.08	0.0217	P	2.0
3	☐	5.000	5.442	84197.42	0.0435	P	1.8
4	☐	10.000	11.174	155469.04	0.0815	P	1.9
5	☐	100.000	101.857	1304409.93	0.6829	A	0.9
6	☐	200.000	199.000	2514047.15	1.3271	A	1.7
7	☐	1.000					

y = 0.0066 * x + 0.0074
R = 0.9999
DL = 0.1337
BEC = 1.119

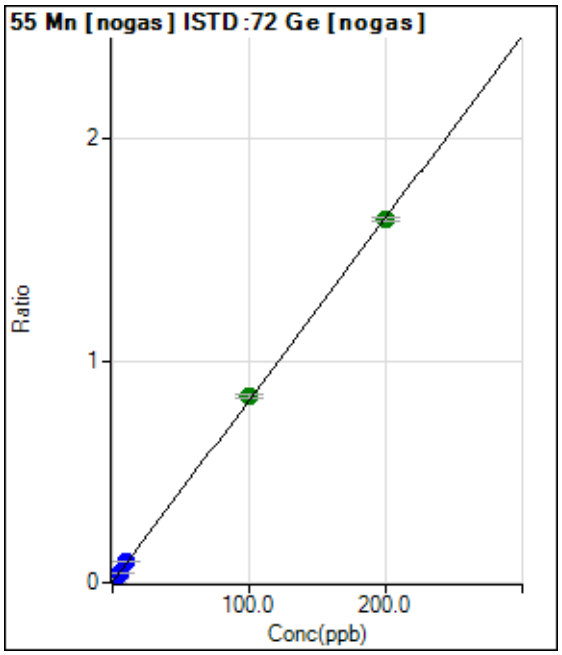
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3353.75	0.0107	P	8.2
2	☐	2.000	2.141	10343.21	0.0322	P	4.3
3	☐	5.000	5.332	20275.16	0.0643	P	6.8
4	☐	10.000	10.894	37763.15	0.1202	P	1.2
5	☐	100.000	101.608	318509.01	1.0317	P	2.9
6	☐	200.000	199.142	617809.22	2.0119	P	2.2
7	☐	1.000					

y = 0.0100 * x + 0.0107
R = 1.0000
DL = 0.2606
BEC = 1.062

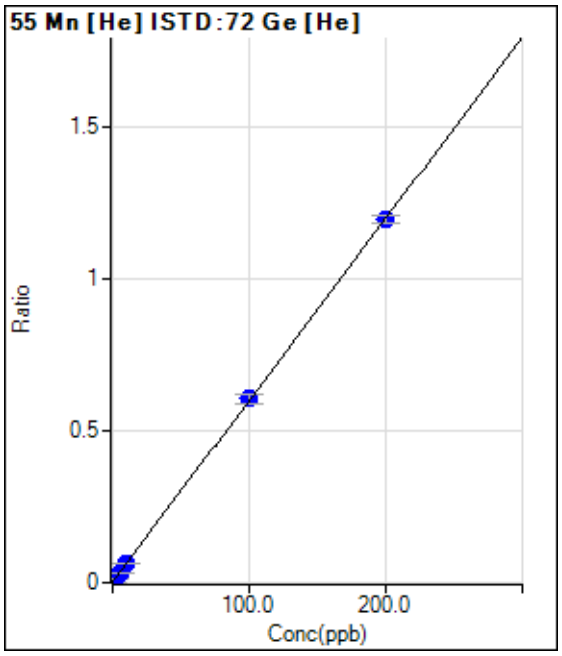
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5274.29	0.0027	P	6.9
2	☐	2.000	2.088	38521.99	0.0199	P	5.0
3	☐	5.000	5.301	89407.26	0.0462	P	2.4
4	☐	10.000	10.938	176283.33	0.0924	P	0.6
5	☐	100.000	101.953	1602003.99	0.8387	A	1.4
6	☐	200.000	198.968	3096131.31	1.6342	A	0.9
7	☐	1.000					

y = 0.0082 * x + 0.0027
R = 0.9999
DL = 0.0688
BEC = 0.3337

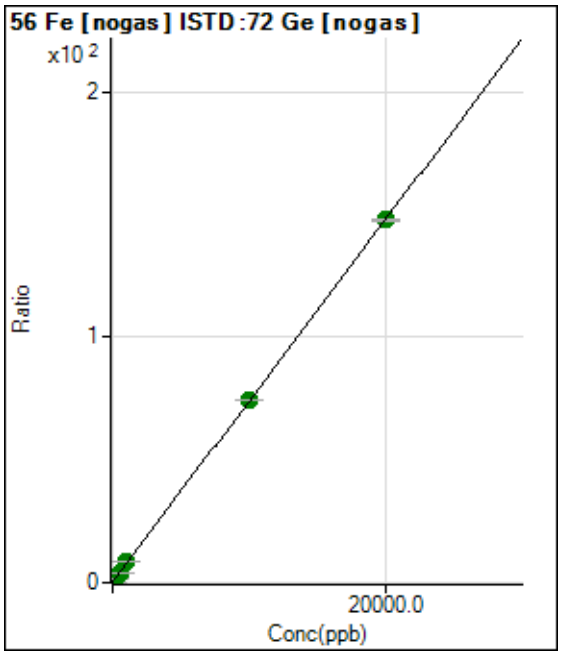
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	630.04	0.0020	P	9.5
2	☐	2.000	2.084	4654.11	0.0145	P	3.8
3	☐	5.000	5.083	10239.85	0.0324	P	1.0
4	☐	10.000	10.270	19961.47	0.0635	P	3.6
5	☐	100.000	101.054	187422.99	0.6072	P	4.7
6	☐	200.000	199.456	367435.05	1.1965	P	2.1
7	☐	1.000					

y = 0.0060 * x + 0.0020
R = 1.0000
DL = 0.09493
BEC = 0.3345

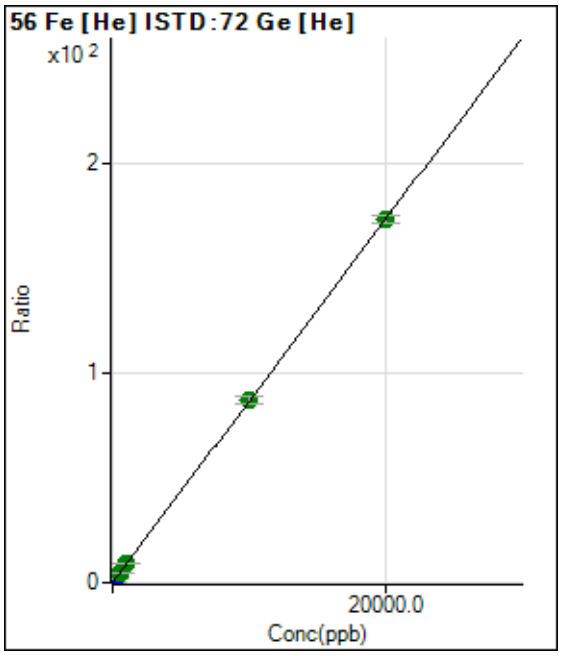
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	455923.01	0.2365	P	2.9
2	☐	200.000	209.848	3466422.87	1.7865	A	3.7
3	☐	500.000	530.593	8039689.24	4.1557	A	3.4
4	☐	1000.000	1093.895	15861564.94	8.3166	A	1.0
5	☐	10000.00	10013.65	141740749.0	74.2027	A	0.3
6	☐	20000.00	19987.61	280145431.2	147.875	A	0.8
7	☐	100.000					

y = 0.0074 * x + 0.2365
R = 1.0000
DL = 2.742
BEC = 32.02

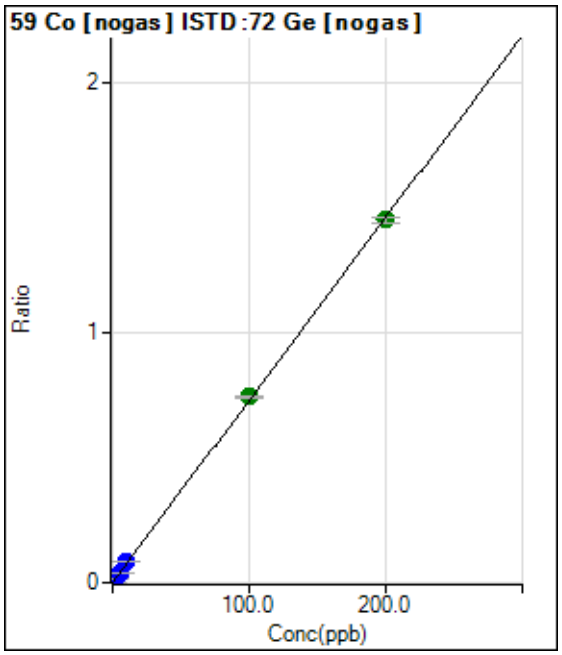
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7485.12	0.0238	P	4.1
2	☐	200.000	212.035	598692.41	1.8628	P	0.7
3	☐	500.000	534.724	1471114.72	4.6616	A	2.7
4	☐	1000.000	1077.339	2944496.00	9.3678	A	1.7
5	☐	10000.00	10048.29	26908120.43	87.1750	A	4.1
6	☐	20000.00	19970.99	53198724.21	173.236	A	2.1
7	☐	100.000					

y = 0.0087 * x + 0.0238
R = 1.0000
DL = 0.3393
BEC = 2.747

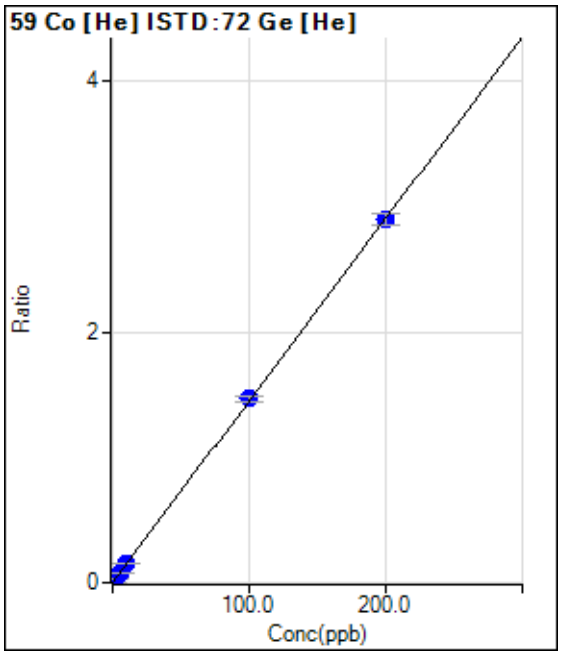
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	350.02	0.0002	P	10.6
2	☐	2.000	2.229	31898.82	0.0164	P	3.2
3	☐	5.000	5.452	77275.57	0.0399	P	2.6
4	☐	10.000	11.384	158688.15	0.0832	P	0.6
5	☐	100.000	102.036	1421686.18	0.7443	A	1.2
6	☐	200.000	198.899	2748667.77	1.4507	A	1.8
7	☐	1.000					

y = 0.0073 * x + 1.8141E-004
R = 0.9999
DL = 0.007925
BEC = 0.02488

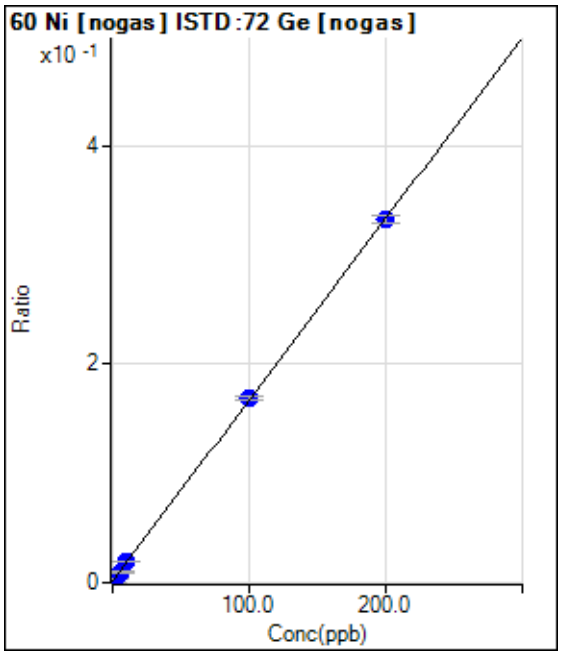
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	110.00	0.0004	P	18.3
2	☐	2.000	2.110	9953.10	0.0310	P	1.9
3	☐	5.000	5.256	24193.52	0.0766	P	1.3
4	☐	10.000	10.521	48104.89	0.1531	P	0.9
5	☐	100.000	101.034	452797.22	1.4668	P	3.1
6	☐	200.000	199.450	888961.65	2.8953	P	3.3
7	☐	1.000					

y = 0.0145 * x + 3.5009E-004
R = 1.0000
DL = 0.01326
BEC = 0.02412

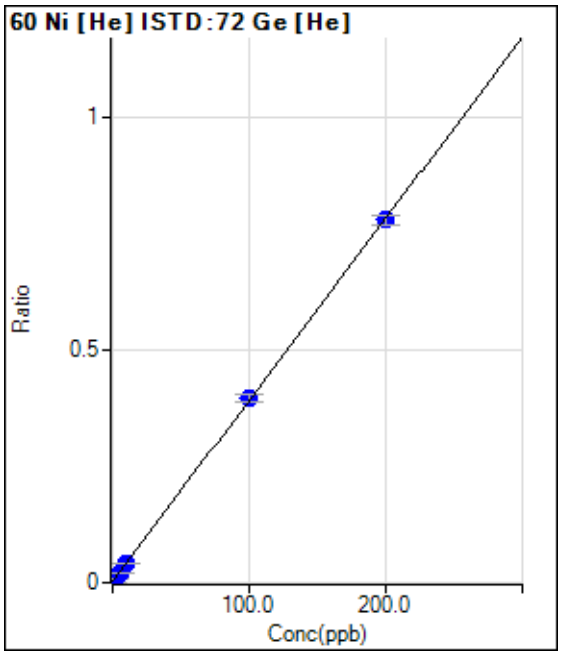
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.625	700.04	0.0004	P	16.4
2	☐	2.000	1.502	7555.19	0.0039	P	3.0
3	☐	5.000	4.896	18423.32	0.0095	P	4.5
4	☐	10.000	10.701	36531.40	0.0192	P	1.5
5	☐	100.000	101.107	323058.61	0.1691	P	1.4
6	☐	200.000	199.419	629363.86	0.3322	P	2.2
7	☐	1.000					

y = 0.0017 * x + 0.0014
R = 1.0000
DL = 0.1077
BEC = 0.8443

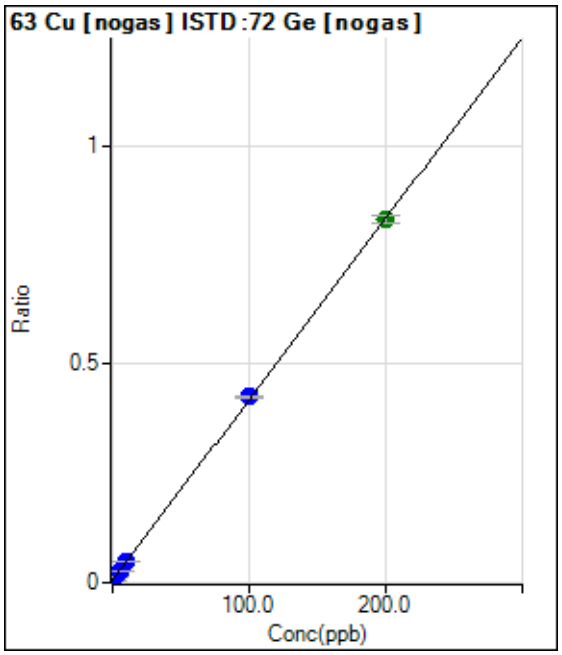
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.250	390.02	0.0012	P	1.1
2	☐	2.000	1.747	2903.68	0.0090	P	2.5
3	☐	5.000	4.910	6744.80	0.0214	P	2.9
4	☐	10.000	9.955	12905.03	0.0411	P	2.6
5	☐	100.000	101.261	122618.88	0.3973	P	4.9
6	☐	200.000	199.376	239524.28	0.7801	P	3.0
7	☐	1.000					

y = 0.0039 * x + 0.0022
R = 1.0000
DL = 0.01065
BEC = 0.5681

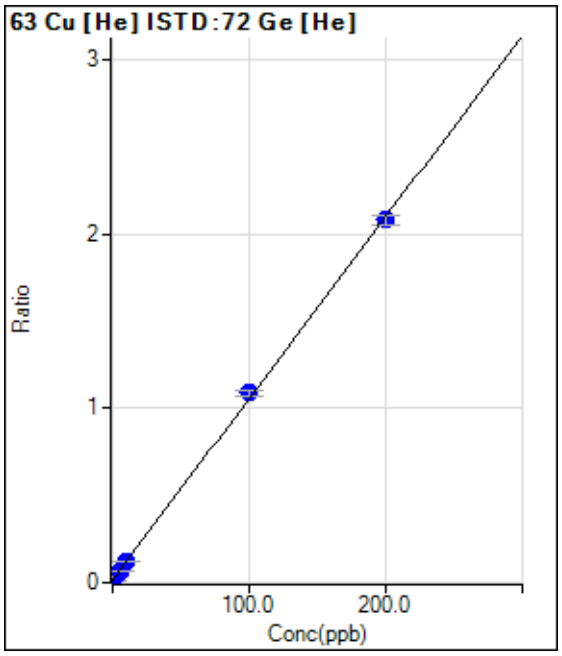
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10476.66	0.0054	P	6.1
2	☐	2.000	2.021	26770.42	0.0138	P	4.2
3	☐	5.000	5.023	50691.68	0.0262	P	3.3
4	☐	10.000	10.662	94432.64	0.0495	P	1.1
5	☐	100.000	101.304	810347.17	0.4242	P	0.6
6	☐	200.000	199.314	1571327.16	0.8294	A	2.1
7	☐	1.000					

y = 0.0041 * x + 0.0054
R = 1.0000
DL = 0.2401
BEC = 1.315

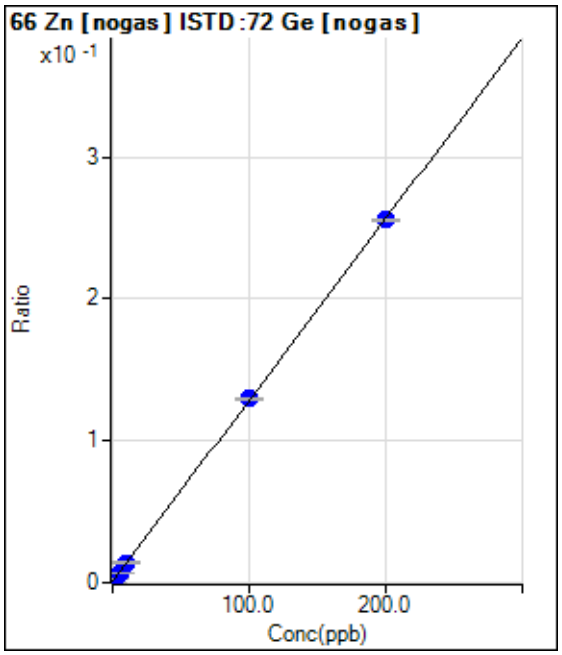
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.539	3317.08	0.0106	P	8.6
2	☐	2.000	1.432	9986.50	0.0311	P	6.8
3	☐	5.000	4.453	19728.04	0.0625	P	1.7
4	☐	10.000	10.132	38217.74	0.1216	P	1.2
5	☐	100.000	103.018	335886.61	1.0881	P	3.3
6	☐	200.000	198.504	639195.81	2.0816	P	2.6
7	☐	1.000					

y = 0.0104 * x + 0.0162
R = 0.9998
DL = 0.2628
BEC = 1.554

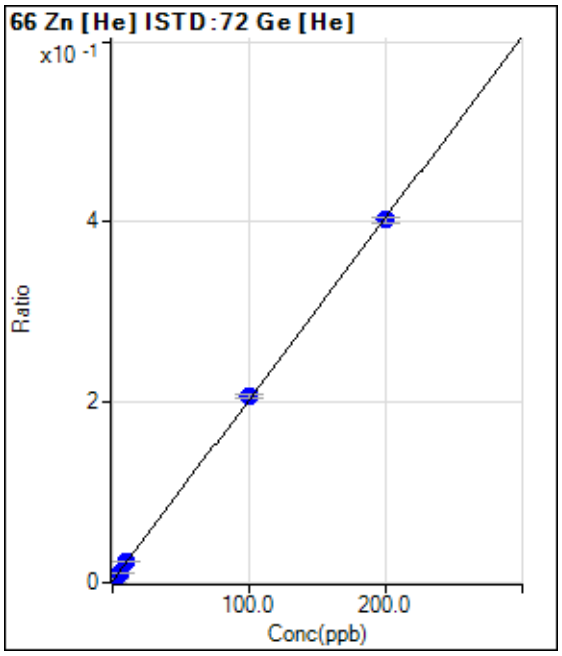
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.410	493.36	0.0003	P	2.5
2	☐	2.000	1.673	5661.11	0.0029	P	4.4
3	☐	5.000	4.895	13615.53	0.0070	P	0.9
4	☐	10.000	10.432	26910.98	0.0141	P	2.3
5	☐	100.000	100.853	247686.40	0.1297	P	1.6
6	☐	200.000	199.558	484599.73	0.2558	P	0.5
7	☐	1.000					

y = 0.0013 * x + 7.7985E-004
R = 1.0000
DL = 0.01485
BEC = 0.6103

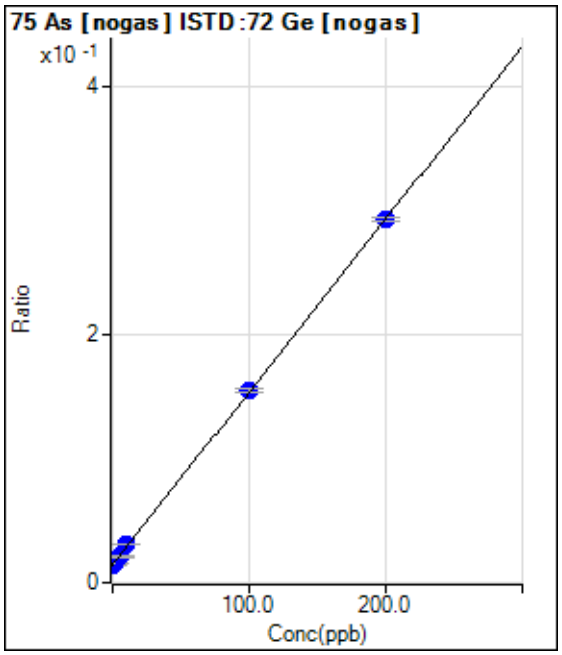
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.718	83.34	0.0003	P	67.1
2	☐	2.000	1.340	1416.78	0.0044	P	5.1
3	☐	5.000	4.819	3603.82	0.0114	P	3.5
4	☐	10.000	10.488	7178.36	0.0228	P	2.6
5	☐	100.000	102.169	64080.30	0.2075	P	1.7
6	☐	200.000	198.902	123592.51	0.4024	P	1.3
7	☐	1.000					

y = 0.0020 * x + 0.0017
R = 0.9999
DL = 0.2624
BEC = 0.8482

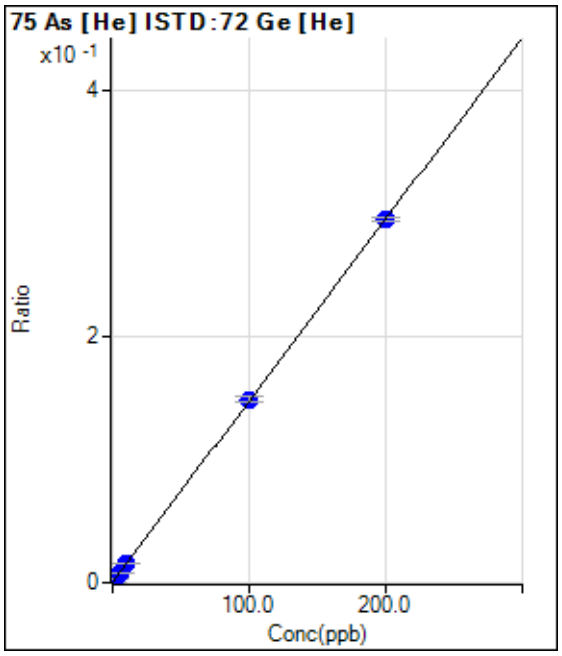
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.624	26299.87	0.0136	P	2.4
2	☐	2.000	1.089	31094.09	0.0160	P	1.5
3	☐	5.000	4.663	40639.93	0.0210	P	1.6
4	☐	10.000	11.664	58625.83	0.0307	P	1.4
5	☐	100.000	100.549	295019.24	0.1544	P	2.0
6	☐	200.000	199.660	553858.74	0.2924	P	1.0
7	☐	1.000					

y = 0.0014 * x + 0.0145
R = 0.9999
DL = 0.7109
BEC = 10.42

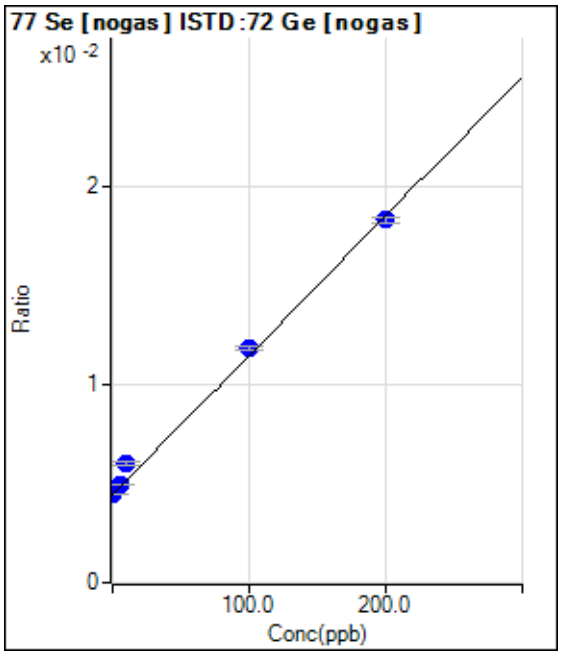
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	67.78	0.0002	P	33.0
2	☐	2.000	1.835	940.04	0.0029	P	2.1
3	☐	5.000	5.056	2424.63	0.0077	P	4.7
4	☐	10.000	10.638	5005.19	0.0159	P	0.9
5	☐	100.000	100.596	45926.01	0.1488	P	3.0
6	☐	200.000	199.670	90646.87	0.2951	P	1.2
7	☐	1.000					

y = 0.0015 * x + 2.1497E-004
R = 1.0000
DL = 0.1439
BEC = 0.1456

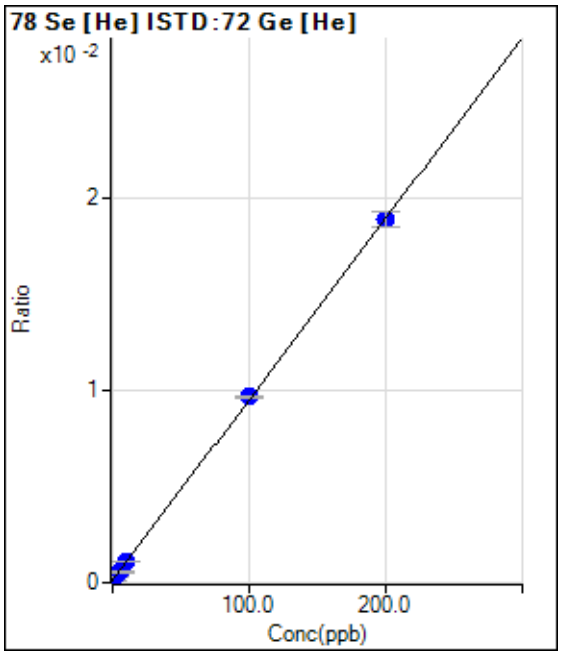
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8565.65	0.0044	P	0.6
2	☐	2.000	2.441	8959.25	0.0046	P	7.6
3	☐	5.000	6.991	9549.57	0.0049	P	1.0
4	☐	10.000	22.770	11530.77	0.0060	P	3.8
5	☐	100.000	104.555	22548.08	0.0118	P	1.5
6	☐	200.000	197.030	34690.91	0.0183	P	1.6
7	☐	1.000					

y = 7.0408E-005 * x + 0.0044
R = 0.9980
DL = 1.057
BEC = 63.09

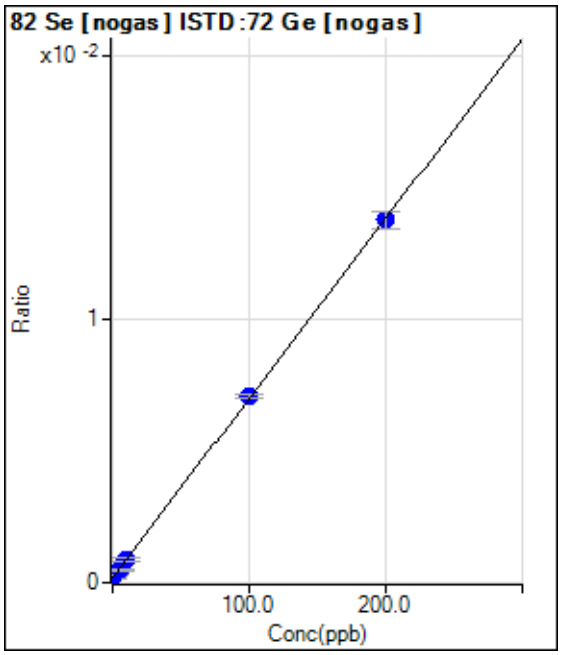
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.614	19.00	0.0001	P	32.5
2	☐	2.000	2.124	102.00	0.0003	P	9.9
3	☐	5.000	4.673	175.67	0.0006	P	7.7
4	☐	10.000	10.143	336.67	0.0011	P	2.6
5	☐	100.000	101.349	2976.92	0.0096	P	0.8
6	☐	200.000	199.326	5786.60	0.0188	P	4.2
7	☐	1.000					

y = 9.3963E-005 * x + 1.1789E-004
R = 1.0000
DL = 0.6257
BEC = 1.255

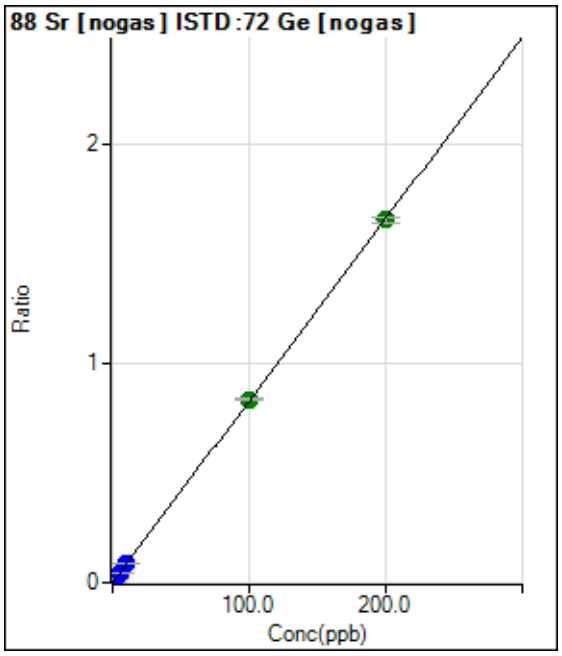
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	353.35	0.0002	P	15.6
2	☐	2.000	2.179	643.37	0.0003	P	11.1
3	☐	5.000	4.503	946.73	0.0005	P	15.5
4	☐	10.000	10.358	1693.48	0.0009	P	14.8
5	☐	100.000	101.099	13492.21	0.0071	P	1.4
6	☐	200.000	199.443	26069.80	0.0138	P	4.5
7	☐	1.000					

y = 6.8053E-005 * x + 1.8345E-004
R = 1.0000
DL = 1.263
BEC = 2.696

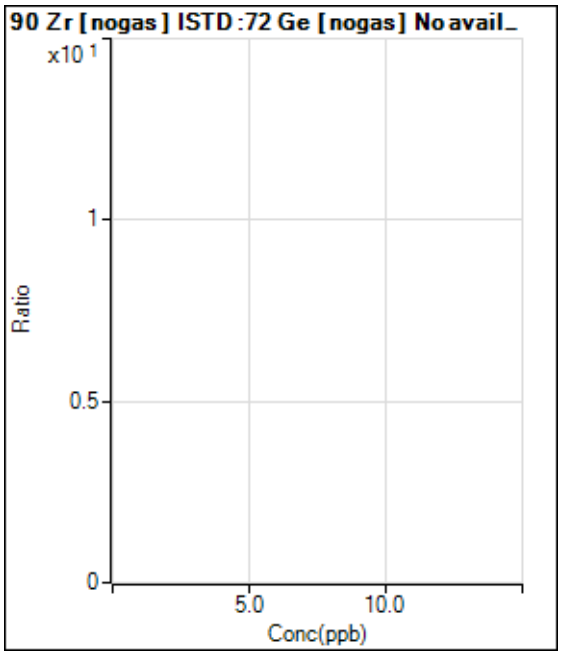
Weight: <None>
Min Conc: <None>



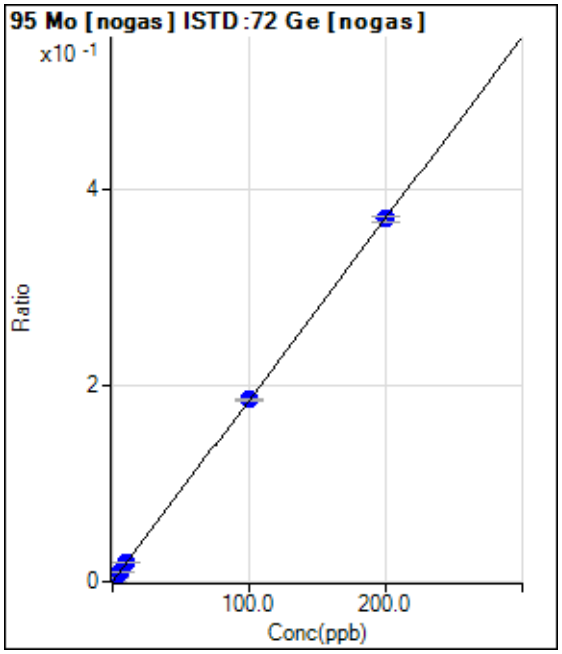
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	706.71	0.0004	P	11.5
2	☐	2.000	2.153	35306.37	0.0182	P	2.5
3	☐	5.000	5.216	84277.93	0.0436	P	4.7
4	☐	10.000	10.849	172058.04	0.0902	P	1.4
5	☐	100.000	100.803	1595278.78	0.8351	A	0.5
6	☐	200.000	199.549	3131277.97	1.6529	A	1.9
7	☐	1.000					

y = 0.0083 * x + 3.6679E-004
R = 1.0000
DL = 0.01529
BEC = 0.04429

Weight: <None>
Min Conc: <None>



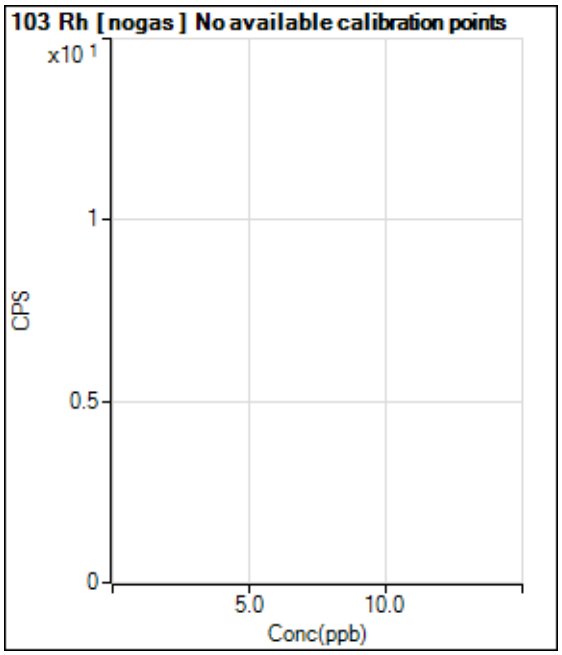
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



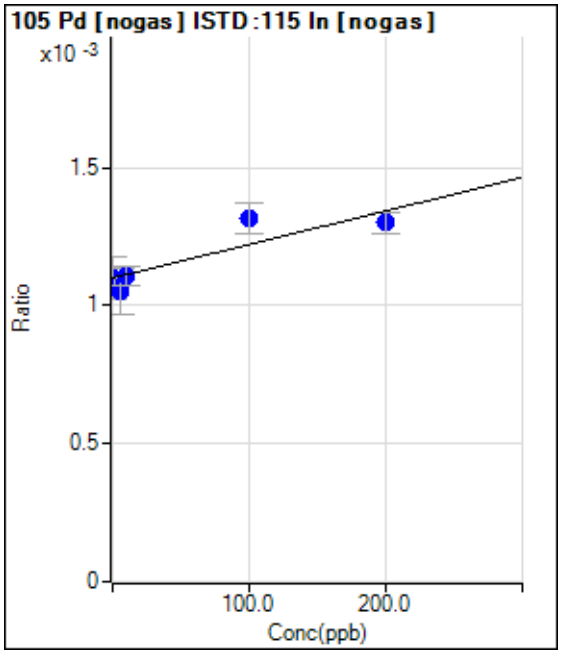
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	280.02	0.0001	P	28.5
2	☐	2.000	2.136	7945.39	0.0041	P	5.9
3	☐	5.000	5.249	19064.39	0.0099	P	4.9
4	☐	10.000	10.549	37487.45	0.0197	P	2.2
5	☐	100.000	100.434	355080.67	0.1859	P	1.2
6	☐	200.000	199.748	700142.23	0.3696	P	1.5
7	☐	1.000					

y = 0.0018 * x + 1.4541E-004
R = 1.0000
DL = 0.06712
BEC = 0.07862

Weight: <None>
Min Conc: <None>



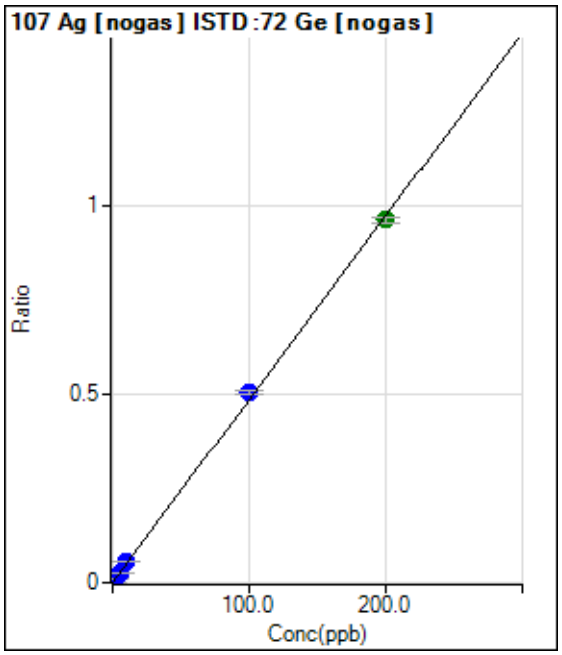
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			20.00		P	50.0
2	☐			33.33		P	34.6
3	☐			40.00		P	90.1
4	☐			43.33		P	58.1
5	☐			176.67		P	73.0
6	☐			290.01		P	20.7
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2226.91	0.0011	P	14.5
2	☐	2.000	-26.413	2116.87	0.0011	P	6.4
3	☐	5.000	-40.846	2106.87	0.0011	P	15.6
4	☐	10.000	5.681	2193.55	0.0011	P	6.7
5	☐	100.000	176.025	2586.96	0.0013	P	8.4
6	☐	200.000	163.634	2490.29	0.0013	P	5.8
7	☐	1.000					

y = 1.2130E-006 * x + 0.0011
R = 0.8921
DL = 394.2
BEC = 907.8

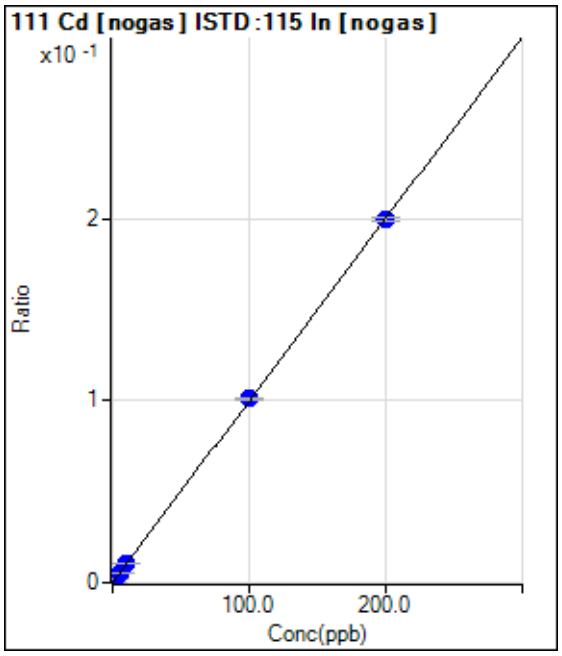
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	90.00	0.0000	P	38.0
2	☐	2.000	2.052	19451.39	0.0100	P	2.7
3	☐	5.000	5.452	51383.10	0.0266	P	2.3
4	☐	10.000	11.073	102772.06	0.0539	P	0.6
5	☐	100.000	103.846	964446.13	0.5049	P	1.7
6	☐	200.000	198.012	1823639.09	0.9628	A	1.7
7	☐	1.000					

y = 0.0049 * x + 4.6626E-005
R = 0.9997
DL = 0.01093
BEC = 0.00959

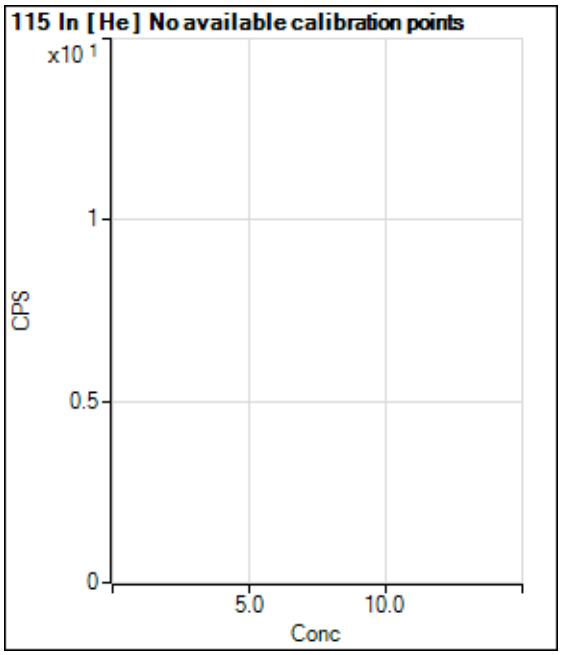
Weight: <None>
Min Conc: <None>



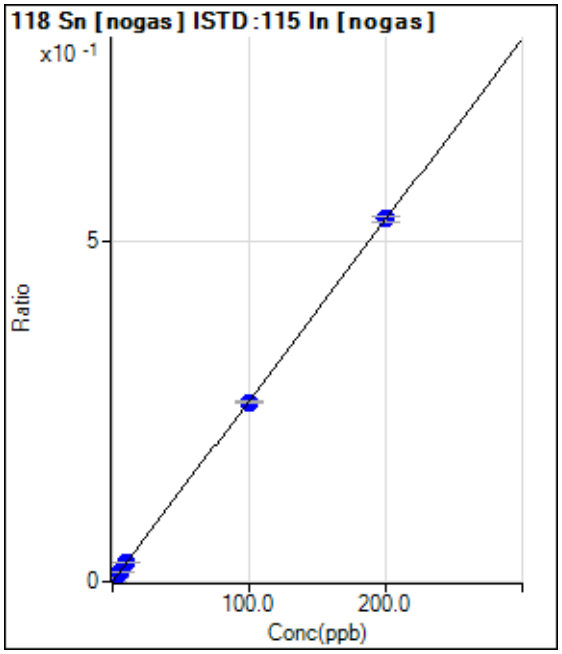
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.
2	☐	2.000	2.132	4234.06	0.0021	P	12.5
3	☐	5.000	5.342	10716.97	0.0053	P	4.7
4	☐	10.000	10.734	21273.57	0.0107	P	1.8
5	☐	100.000	100.991	198865.48	0.1010	P	0.8
6	☐	200.000	199.458	382281.83	0.1996	P	0.9
7	☐	1.000					

y = 0.0010 * x + 1.6557E-006
R = 1.0000
DL = 0.008599
BEC = 0.001655

Weight: <None>
Min Conc: <None>



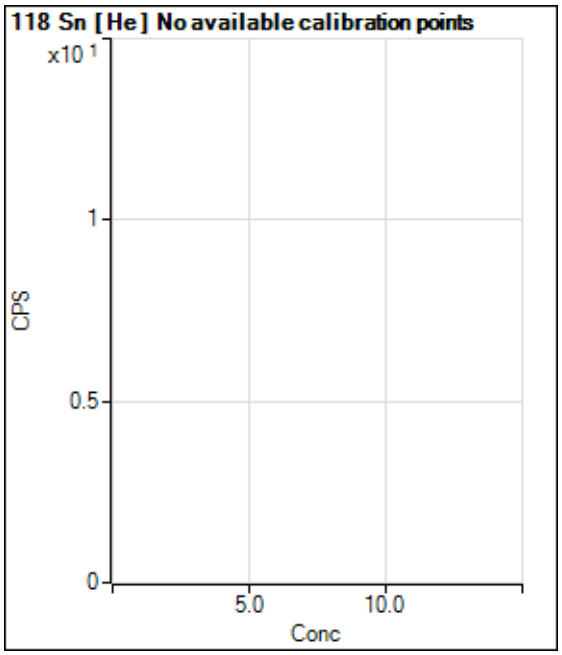
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			390824.87		P	0.6
2	☐			394430.68		P	1.3
3	☐			395627.28		P	2.3
4	☐			389924.96		P	1.8
5	☐			388121.61		P	2.3
6	☐			375190.68		P	1.8
7	☐						



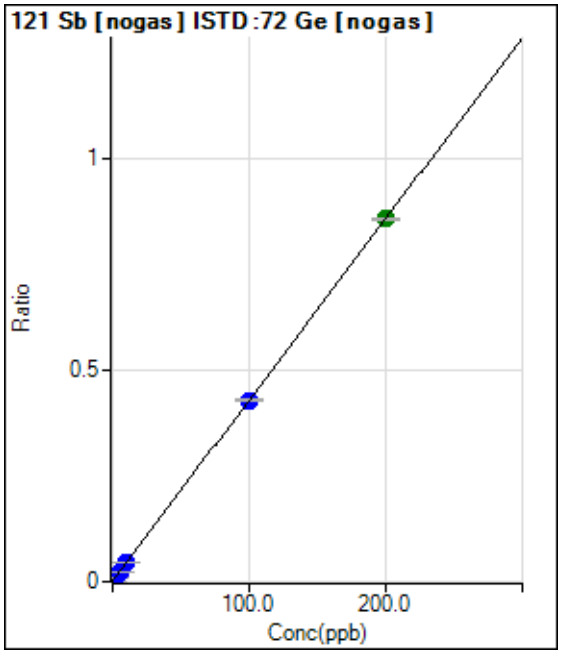
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	653.37	0.0003	P	4.0
2	☐	2.000	2.047	11427.50	0.0058	P	2.4
3	☐	5.000	5.064	27639.52	0.0138	P	3.5
4	☐	10.000	10.162	54162.61	0.0273	P	0.5
5	☐	100.000	98.940	518329.73	0.2634	P	1.1
6	☐	200.000	200.520	1021865.74	0.5335	P	1.6
7	☐	1.000					

y = 0.0027 * x + 3.2286E-004
R = 1.0000
DL = 0.01471
BEC = 0.1214

Weight: <None>
Min Conc: <None>



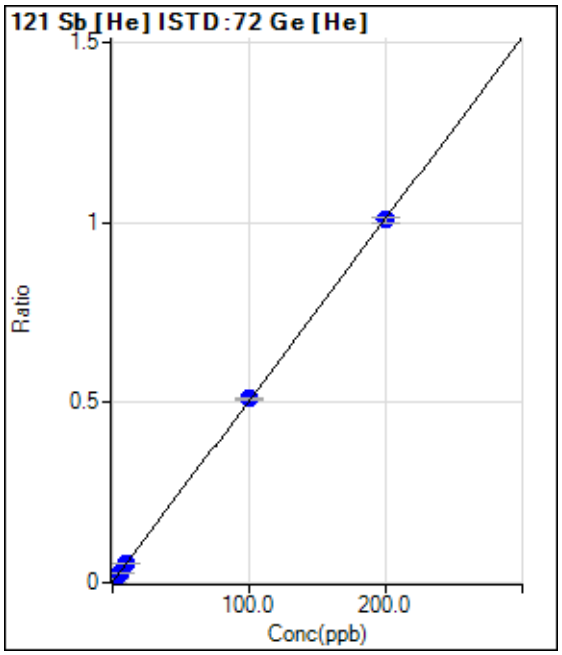
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			136.67		P	44.7
2	☐			2426.93		P	12.4
3	☐			6011.27		P	7.1
4	☐			12131.41		P	3.4
5	☐			111808.06		P	2.0
6	☐			218876.19		P	0.1
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2040.20	0.0011	P	4.8
2	☐	2.000	2.139	19825.33	0.0102	P	2.3
3	☐	5.000	5.264	45661.48	0.0236	P	1.1
4	☐	10.000	10.482	87605.91	0.0459	P	1.8
5	☐	100.000	99.866	818748.06	0.4286	P	0.7
6	☐	200.000	200.035	1624538.31	0.8575	A	0.2
7	☐	1.000					

y = 0.0043 * x + 0.0011
R = 1.0000
DL = 0.03525
BEC = 0.2471

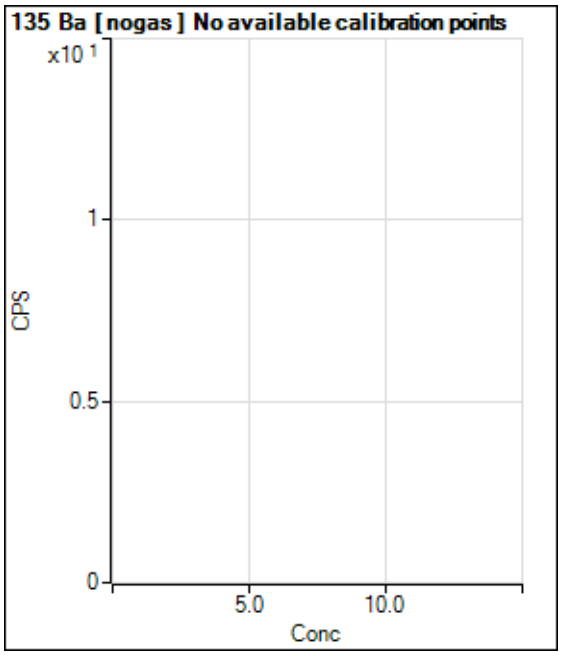
Weight: <None>
Min Conc: <None>



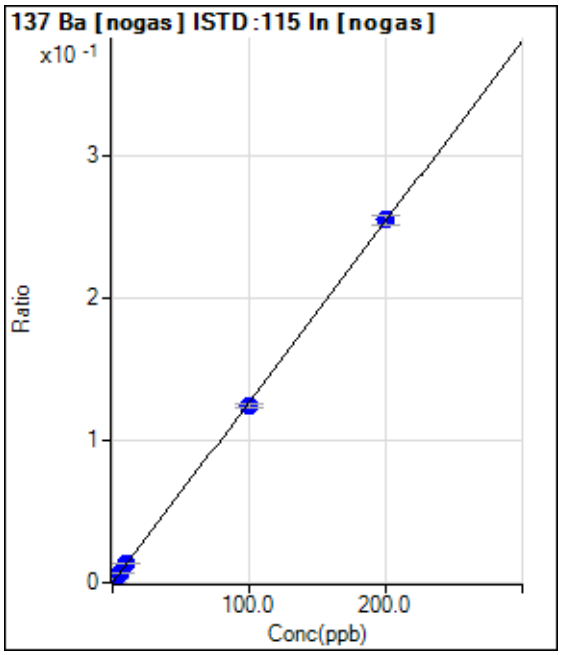
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	400.02	0.0013	P	5.4
2	☐	2.000	2.001	3653.86	0.0114	P	4.0
3	☐	5.000	5.037	8422.35	0.0267	P	4.6
4	☐	10.000	10.527	17099.03	0.0544	P	1.5
5	☐	100.000	101.088	157913.59	0.5114	P	1.1
6	☐	200.000	199.429	309509.77	1.0077	P	1.4
7	☐	1.000					

y = 0.0050 * x + 0.0013
R = 1.0000
DL = 0.04056
BEC = 0.2521

Weight: <None>
Min Conc: <None>



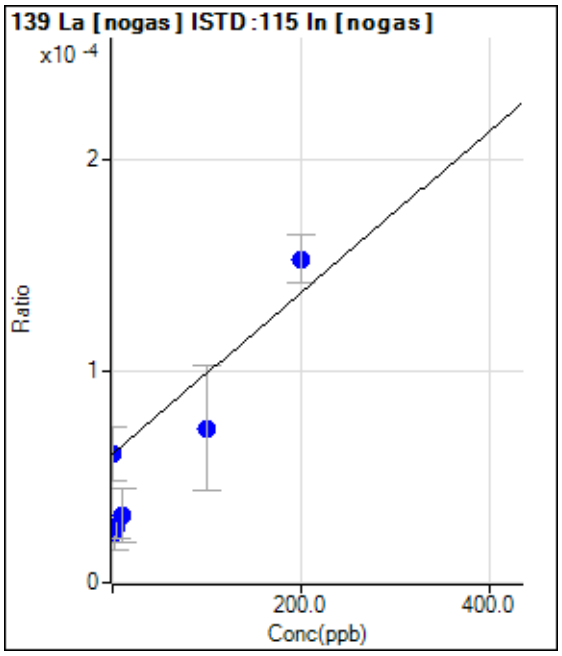
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			26.67		P	43.3
2	☐			2860.35		P	5.5
3	☐			7768.77		P	3.4
4	☐			14950.43		P	1.5
5	☐			140390.31		P	1.9
6	☐			279466.39		P	1.5
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	126.67	0.0001	P	12.7
2	☐	2.000	1.959	5054.26	0.0026	P	4.4
3	☐	5.000	5.073	13048.74	0.0065	P	1.2
4	☐	10.000	10.311	26067.33	0.0132	P	1.0
5	☐	100.000	98.266	245743.94	0.1249	P	2.3
6	☐	200.000	200.850	488809.21	0.2552	P	2.4
7	☐	1.000					

y = 0.0013 * x + 6.2637E-005
R = 0.9999
DL = 0.01877
BEC = 0.04931

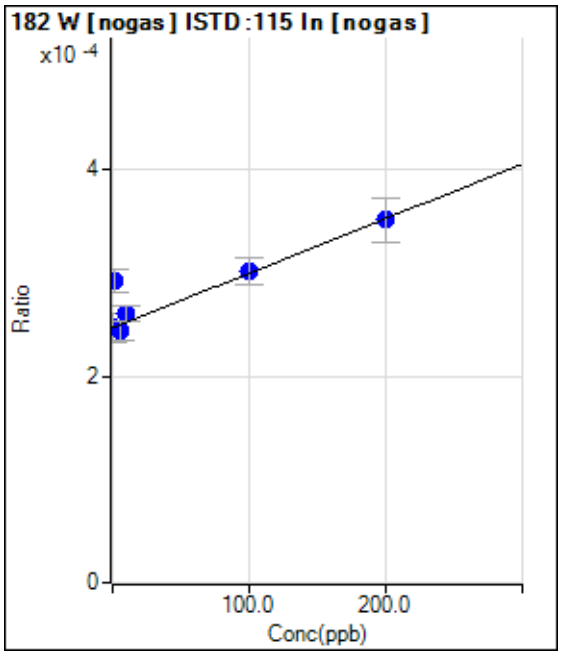
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	123.34	0.0001	P	40.8
2	☐	2.000	-97.459	46.67	0.0000	P	65.8
3	☐	5.000	-89.840	53.33	0.0000	P	42.7
4	☐	10.000	-75.795	63.34	0.0000	P	80.3
5	☐	100.000	32.205	143.34	0.0001	P	80.3
6	☐	200.000	241.553	293.35	0.0002	P	14.5
7	☐	100.000					

y = 3.8156E-007 * x + 6.0840E-005
R = 0.9435
DL = 195.4
BEC = 159.4

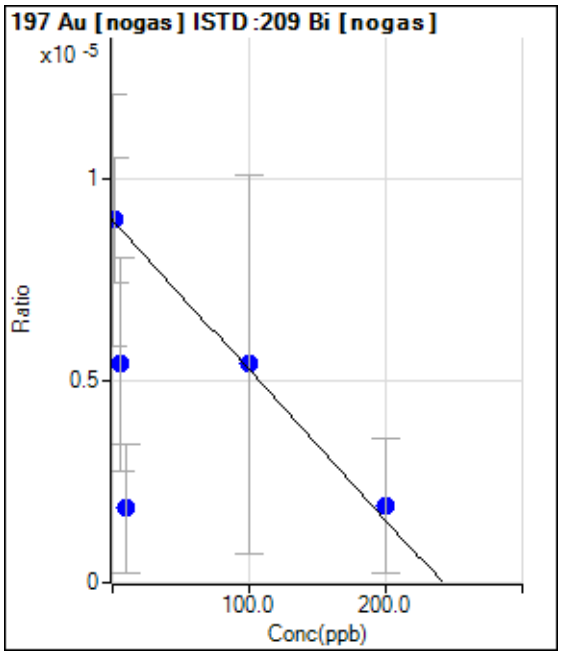
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	500.03	0.0002	P	11.2
2	☐	2.000	86.503	580.03	0.0003	P	7.9
3	☐	5.000	-5.600	490.03	0.0002	P	7.8
4	☐	10.000	26.021	516.70	0.0003	P	5.2
5	☐	100.000	102.280	593.37	0.0003	P	8.6
6	☐	200.000	197.479	673.37	0.0004	P	12.0
7	☐	1.000					

y = 5.3000E-007 * x + 2.4711E-004
R = 0.9038
DL = 156.2
BEC = 466.2

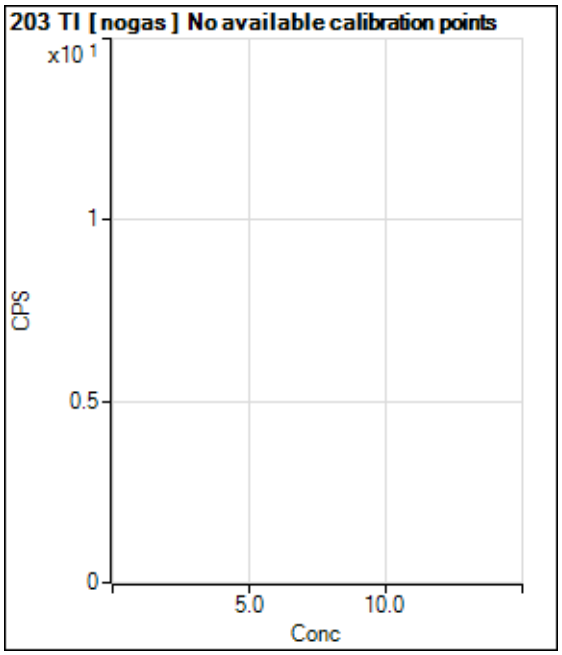
Weight: <None>
Min Conc: <None>



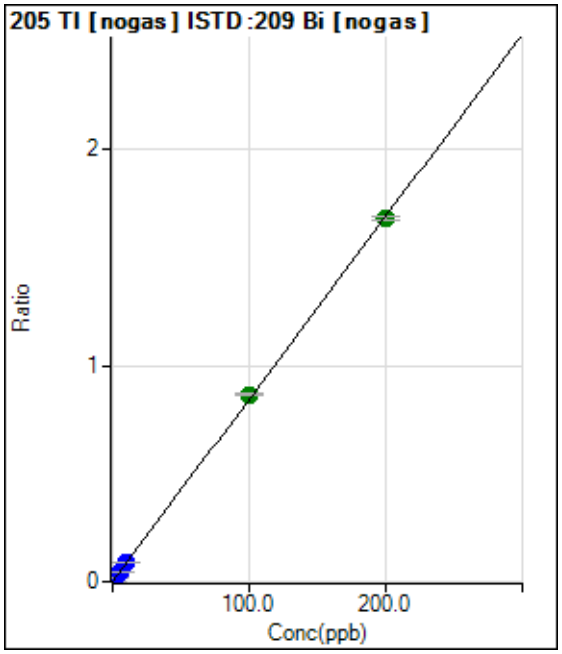
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.67	0.0000	P	69.5
2	☐	2.000	-0.081	16.67	0.0000	P	34.5
3	☐	5.000	96.174	10.00	0.0000	P	98.2
4	☐	10.000	192.401	3.33	0.0000	P	173.
5	☐	100.000	95.994	10.00	0.0000	P	173.
6	☐	200.000	190.624	3.33	0.0000	P	173.
7	☐	100.000					

y = -3.7190E-008 * x + 8.9934E-006
R = -0.5641
DL = -504.3
BEC = -241.8

Weight: <None>
Min Conc: <None>



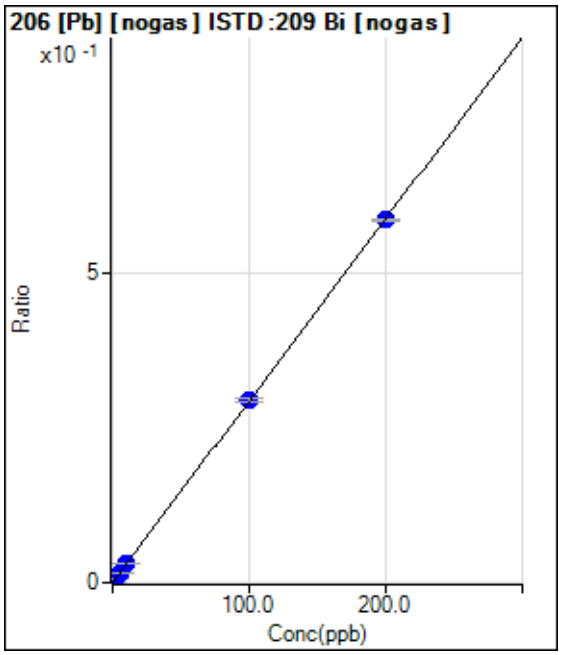
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			56.67		P	36.7
2	☐			12918.92		P	3.0
3	☐			32961.14		P	2.6
4	☐			67551.78		P	0.7
5	☐			647777.72		P	0.8
6	☐			1251537.30		A	1.1
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	153.34	0.0001	P	24.4
2	☐	2.000	1.959	30800.20	0.0166	P	2.0
3	☐	5.000	5.107	79559.59	0.0432	P	2.2
4	☐	10.000	10.561	163934.01	0.0893	P	3.3
5	☐	100.000	102.288	1565068.52	0.8644	A	1.0
6	☐	200.000	198.825	2991990.79	1.6801	A	0.9
7	☐	1.000					

y = 0.0084 * x + 8.2617E-005
R = 0.9999
DL = 0.007156
BEC = 0.009777

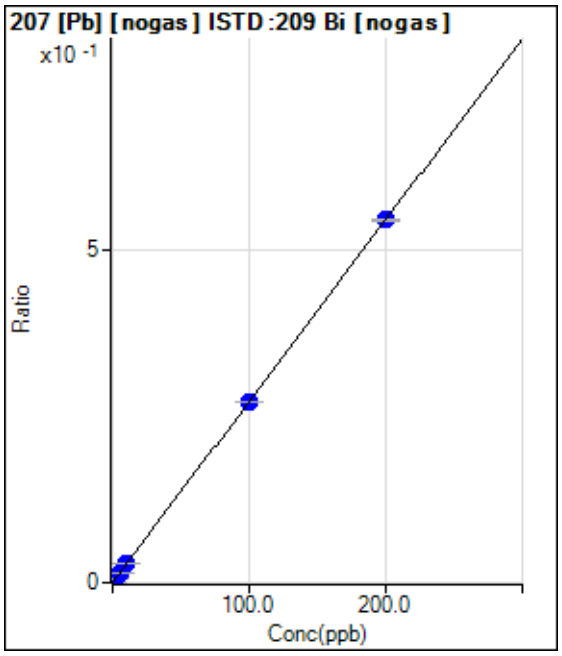
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	150.01	0.0001	P	13.4
2	☐	2.000	2.059	11317.66	0.0061	P	5.6
3	☐	5.000	5.332	28906.72	0.0157	P	3.8
4	☐	10.000	10.765	58068.67	0.0316	P	1.8
5	☐	100.000	100.661	534365.33	0.2952	P	1.5
6	☐	200.000	199.623	1042332.22	0.5853	P	0.7
7	☐	1.000					

y = 0.0029 * x + 8.0869E-005
R = 1.0000
DL = 0.0111
BEC = 0.02759

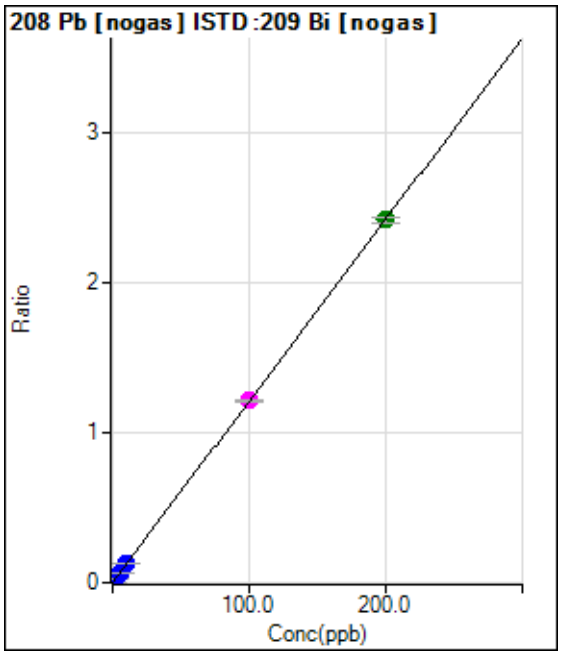
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	150.01	0.0001	P	18.1
2	☐	2.000	2.056	10507.15	0.0057	P	5.3
3	☐	5.000	5.301	26699.46	0.0145	P	3.8
4	☐	10.000	10.690	53566.59	0.0292	P	2.0
5	☐	100.000	99.661	491366.37	0.2714	P	1.0
6	☐	200.000	200.127	970481.44	0.5449	P	0.8
7	☐	1.000					

y = 0.0027 * x + 8.0911E-005
R = 1.0000
DL = 0.01612
BEC = 0.02972

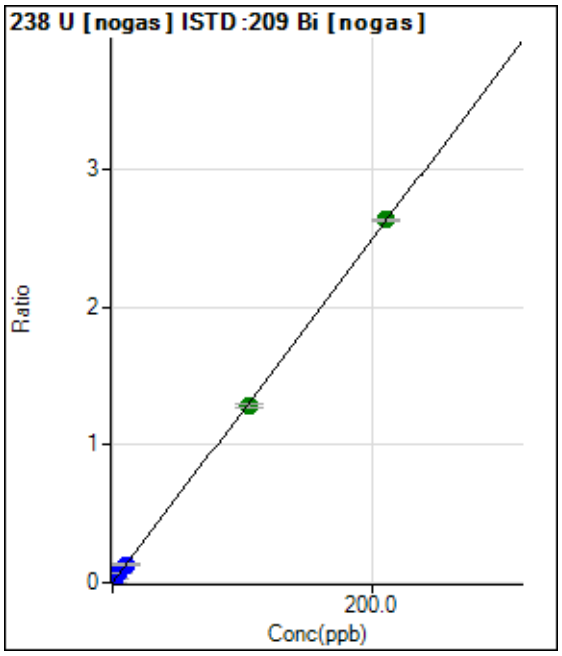
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	623.37	0.0003	P	1.6
2	☐	2.000	2.076	47055.32	0.0254	P	3.2
3	☐	5.000	5.253	117416.13	0.0638	P	4.1
4	☐	10.000	10.716	238320.22	0.1298	P	1.9
5	☐	100.000	100.113	2190964.84	1.2103	M	1.5
6	☐	200.000	199.900	4303038.43	2.4163	A	1.4
7	☐	1.000					

y = 0.0121 * x + 3.3603E-004
R = 1.0000
DL = 0.001358
BEC = 0.0278

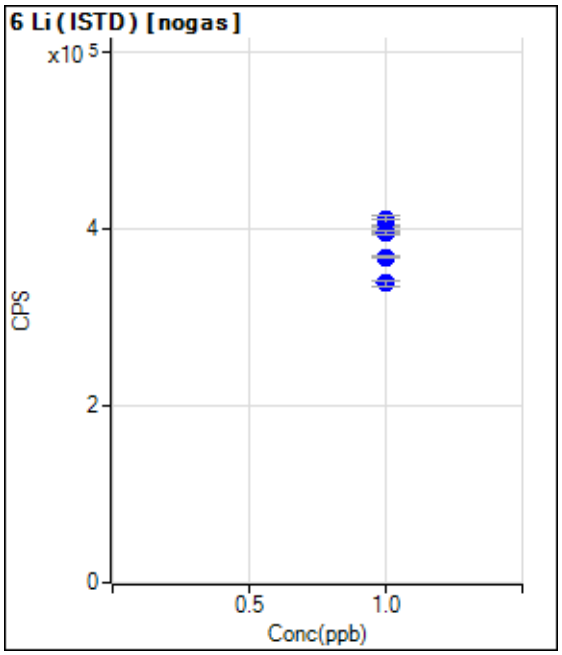
Weight: <None>
Min Conc: <None>



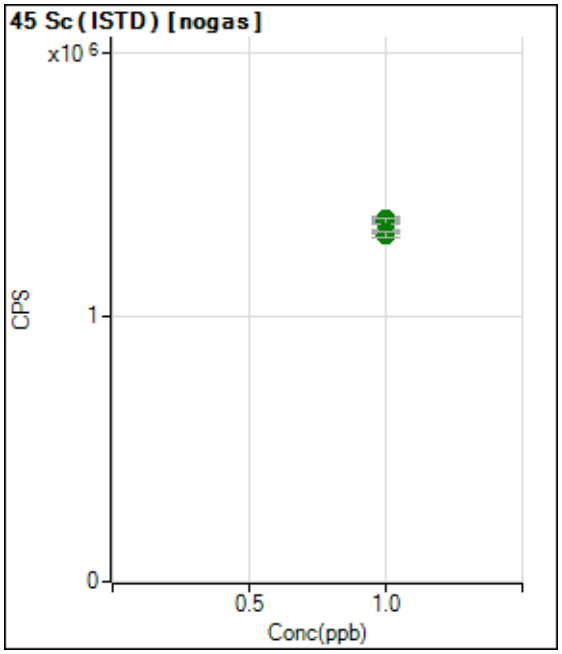
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	130.01	0.0001	P	35.3
2	☐	2.000	2.117	48983.45	0.0265	P	2.3
3	☐	5.000	5.266	120945.61	0.0657	P	1.4
4	☐	10.000	10.559	241696.93	0.1317	P	2.7
5	☐	105.000	102.816	2320656.01	1.2817	A	2.4
6	☐	210.000	211.058	4685540.35	2.6310	A	0.6
7	☐	1.000					

y = 0.0125 * x + 7.0073E-005
R = 0.9999
DL = 0.005953
BEC = 0.005622

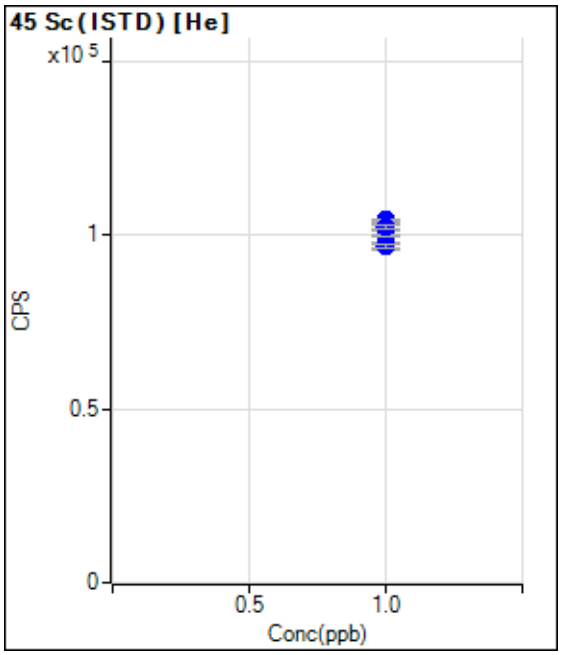
Weight: <None>
Min Conc: <None>



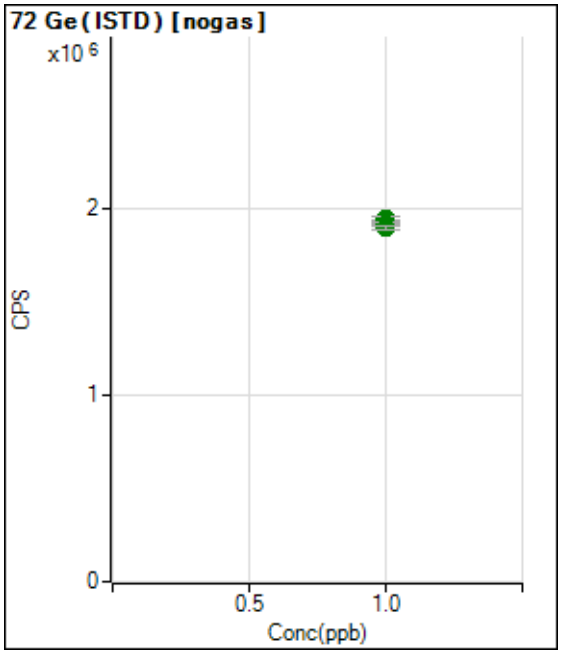
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		409845.80		P	2.5
2	☐	1.000		402546.00		P	4.0
3	☐	1.000		398420.21		P	1.7
4	☐	1.000		395515.74		P	1.0
5	☐	1.000		367657.05		P	0.8
6	☐	1.000		338503.98		P	1.9
7	☐	1.000					



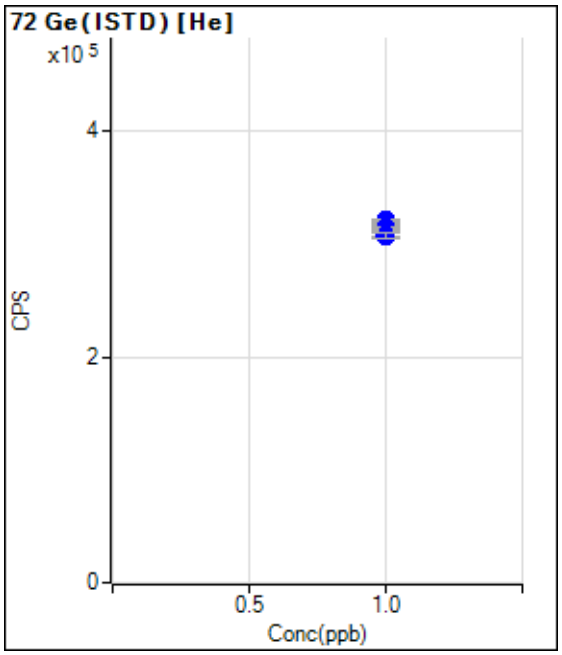
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1361284.62		A	0.9
2	☐	1.000		1371798.83		A	1.6
3	☐	1.000		1359338.73		A	1.5
4	☐	1.000		1365531.90		A	1.7
5	☐	1.000		1324627.06		A	0.8
6	☐	1.000		1311517.35		A	1.5
7	☐	1.000					



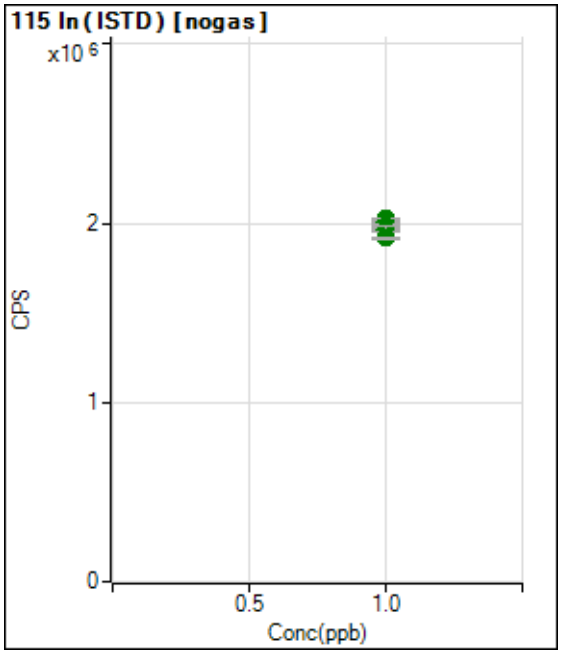
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		102230.43		P	1.9
2	☐	1.000		104377.49		P	0.3
3	☐	1.000		99743.39		P	0.5
4	☐	1.000		102247.81		P	1.2
5	☐	1.000		96881.57		P	2.3
6	☐	1.000		96685.21		P	1.1
7	☐	1.000					



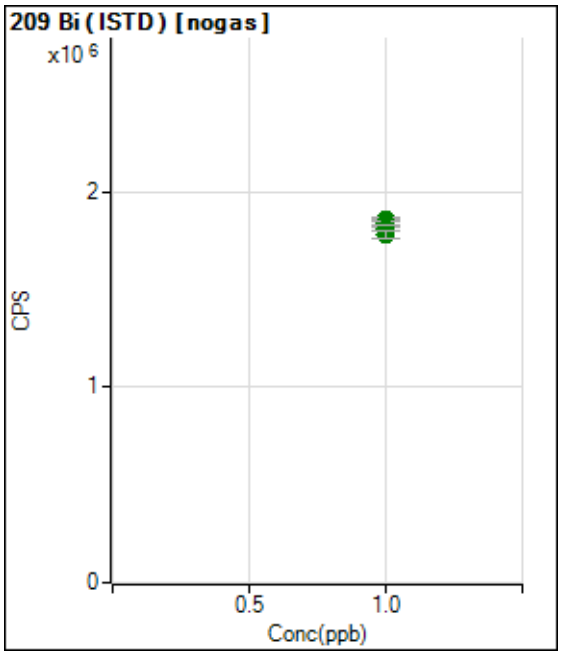
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1928234.03		A	1.1
2	☐	1.000		1940875.44		A	1.2
3	☐	1.000		1935470.13		A	2.0
4	☐	1.000		1907231.90		A	0.6
5	☐	1.000		1910189.29		A	1.0
6	☐	1.000		1894437.68		A	1.4
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		314232.85		P	2.1
2	☐	1.000		321387.44		P	0.6
3	☐	1.000		315645.80		P	1.5
4	☐	1.000		314308.81		P	0.9
5	☐	1.000		308806.08		P	1.8
6	☐	1.000		307161.83		P	1.8
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2023506.71		A	0.7
2	☐	1.000		1981882.80		A	2.1
3	☐	1.000		2005545.83		A	2.1
4	☐	1.000		1980741.80		A	1.2
5	☐	1.000		1968009.34		A	1.2
6	☐	1.000		1915570.78		A	0.9
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1855077.26		A	0.5
2	☐	1.000		1851730.39		A	2.0
3	☐	1.000		1840934.14		A	2.9
4	☐	1.000		1835771.43		A	1.5
5	☐	1.000		1810618.93		A	1.8
6	☐	1.000		1780994.45		A	1.9
7	☐	1.000					

Moisture Raw Data

ARCADIS U.S., Inc.
PROJECT: CLOSED CASTNER FIRING RANGE
ALS WO# HS17041053

ALS Environmental

Analyst	Delmy Flores	Temp In Deg C	110
Method	Moisture_HS_01	Temp Out Deg C	110
Data Analyzed	24-Apr-17 11:50 am	Oven ID	Oven 6
		Balance ID	WC Bal 07

SampleID	Type	Dish	PanWt (g)	Wet Wt (g)	1st Wt (g)	2nd Wt (g)	3rd Wt (g)		Moisture (%)
HS17041036-01	SAMP	1	1.1691	6.3563	5.5656	5.5693		0	30.80
HS17041036-02	SAMP	2	1.1472	6.2192	5.5771	5.5804		0	28.70
HS17041036-03	SAMP	3	1.153	6.1516	5.4566	5.4596		0	30.00
HS17041036-04	SAMP	4	1.1552	6.844	6.0063	6.0096		0	29.10
HS17041053-01	SAMP	5	1.17	6.4179	7.5182	7.5221		0	1.03
HS17041053-02	SAMP	6	1.1738	6.6921	7.8194	7.823		0	0.64
HS17041053-03	SAMP	7	1.1488	6.747	7.8003	7.8049		0	1.35
HS17041053-04	SAMP	8	1.1404	6.4596	7.4605	7.4658		0	2.08
HS17041053-05	SAMP	9	1.1346	6.3483	7.3934	7.3981		0	1.34
HS17041053-06	SAMP	10	1.1372	6.7871	7.8669	7.8704		0	0.79
HS17041053-07	SAMP	11	1.1487	6.8957	7.9902	7.9934		0	0.74
HS17041053-08	SAMP	12	1.1546	6.4072	7.413	7.4169		0	2.26
HS17041053-09	SAMP	13	1.1471	6.4189	7.2289	7.2325		0	5.20
HS17041053-10	SAMP	14	1.1409	6.7481	7.8132	7.8171		0	1.07
HS17041053-11	SAMP	15	1.1459	6.7265	7.7795	7.783		0	1.33
HS17041053-12	SAMP	16	1.1314	6.0814	7.0912	7.0944		0	1.95
HS17041053-13	SAMP	17	1.1574	6.9317	8.0413	8.0445		0	0.64
HS17041053-14	SAMP	18	1.1571	6.6603	7.7477	7.7506		0	1.00
HS17041053-15	SAMP	19	1.1495	6.4924	7.5974	7.6002		0	0.64
HS17041053-16	SAMP	20	1.1564	6.2132	7.3033	7.3063		0	1.02
HS17041053-16DUP	DUP	21	1.1594	6.2095	7.3002	7.303		0	1.06

Date: 04/26/2017 12:26:41

Analyst	Delmy Flores	Temp In Deg C	110
Method	Moisture_HS_01	Temp Out Deg C	110
Data Analyzed	24-Apr-17 11:52 am	Oven ID	Oven 6
		Balance ID	WC Bal 07

SampleID	Type	Dish	PanWt (g)	Wet Wt (g)	1st Wt (g)	2nd Wt (g)	3rd Wt (g)		Moisture (%)
HS17041053-17	SAMP	22	1.1523	6.0738	7.1904	7.1915	0		0.57
HS17041053-18	SAMP	23	1.1679	6.0558	7.1557	7.1571	0		1.10
HS17041053-19	SAMP	24	1.1494	6.0396	7.0714	7.073	0		1.92
HS17041053-20	SAMP	25	1.1444	6.1978	7.2067	7.2078	0		2.17
HS17041053-21	SAMP	26	1.1579	6.038	6.9006	6.9018	0		4.87
HS17041053-21DUP	DUP	27	1.156	6.0334	6.8985	6.8997	0		4.80

Date: 04/26/2017 12:27:39

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

June 8, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed is the final validation report for the fraction listed below. This SDG was received on June 5, 2017. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #38811:

SDG #	**Fraction:**
HS17041053	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #38811 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	(4) Metals (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	HS17041053	06/05/17	06/19/17	0	21																														
A	HS17041053	06/05/17	06/19/17	0	2																														
Total	J/PG			0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23

Shaded cells indicate Level IV validation (all other cells are ADR validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\38811ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDG: HS17041053

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

June 7, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and Level IV data validation results for samples collected during the April 2017 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by Environmental Protection Agency (EPA) SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Please note that sample names had to be truncated due to database limitations. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample (LCS), field duplicate samples, split duplicate samples, and internal standards.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
HS17041053/ 6020A	ICB/CCB	Antimony	0.445 ug/L	FTBL-SS-B43-0-12-042017-R FTBL-SS-B44-0-12-042017-R FTBL-SS-B55-0-12-042017-R FD042017 FTBL-SS-B56-0-12-042017-R
HS17041053/ 6020A	ICB/CCB	Lead	4.092 ug/L	FTBL-SS-B55-0-12-042017-R FTBL-SS-B56-0-12-042017-R

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks.

VII. Field Blanks

No field blanks were identified in this SDG.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on associated project samples. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for antimony and zinc and one MS/MSD pair for lead, antimony, and zinc. No data were qualified for MS/MSD %R outside QC limits when the post digestion spike was within QC limits or where sample concentrations were significantly greater (>4x) than the spike amount.

IX. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XII. Field/Split Duplicates

Two field duplicate pairs were collected and analyzed for metals. All RPDs were within QC limits. The field duplicate result comparisons are provided in Enclosure I.

Samples FTBL-SS-B19-0-12-041917-R and FTBL-SS-B19-0-12-041917-R-QA (from SDG FA43270) and samples FTBL-SS-B44-0-12-042017-R and FTBL-SS-B44-0-12-042017-R-QA (from SDG FA43270) were identified as split duplicate samples. No metals were detected in any of the split samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B19-0-12-041917-R (SDG: HS17041053)	FTBL-SS-B19-0-12-041917-R-QA (SDG: FA43270)		
Copper	7.55	6.7	12	
Lead	10.4	12.0	14	
Zinc	48.1	53.8	11	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B44-0-12-042017-R (SDG: HS1704053)	FTBL-SS-B44-0-12-042017-R -QA (SDG: FA43270)		
Antimony	46.8	57.5	21	
Copper	212	348	49	
Lead	6710	12600	61	J det/A
Zinc	65.9	86.9	27	

XIII. Internal Standards

All internal standard areas and percent recoveries were within QC limits.

XIV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to split duplicate RPD, data were qualified as estimated in one sample.

Due to results below the LOQ, data were qualified as estimated in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the data validation all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Apr-2017	FD041917	HS17041053-03	FD	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B19-0-12-R	HS17041053-01	N	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B20-0-12-R	HS17041053-02	N	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B13-0-12-R	HS17041053-04	N	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B13-0-12-RMS	HS17041053-04MS	MS	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B13-0-12-RMSD	HS17041053-04MSD	MSD	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B14-0-12-R	HS17041053-05	N	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B25-0-12-R	HS17041053-06	N	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B26-0-12-R	HS17041053-07	N	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B31-0-12-R	HS17041053-08	N	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B31-12-24-R	HS17041053-09	N	SW3050	6020A	III
19-Apr-2017	FTBL-SS-B32-0-12-R	HS17041053-10	N	SW3050	6020A	IV
20-Apr-2017	FD042017	HS17041053-17	FD	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B37-0-12-R	HS17041053-11	N	SW3010	6020R	III
20-Apr-2017	FTBL-SS-B37-0-12-R	HS17041053-11	N	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B37-12-24-R	HS17041053-12	N	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B38-0-12-R	HS17041053-13	N	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B43-0-12-R	HS17041053-14	N	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B44-0-12-R	HS17041053-15	N	SW3010	6020R	III
20-Apr-2017	FTBL-SS-B44-0-12-R	HS17041053-15	N	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B55-0-12-R	HS17041053-16	N	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B55-0-12-RMS	HS17041053-16MS	MS	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B55-0-12-RMSD	HS17041053-16MSD	MSD	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B56-0-12-R	HS17041053-18	N	SW3050	6020A	IV
20-Apr-2017	FTBL-SS-B49-0-12-R	HS17041053-19	N	SW3050	6020A	III
20-Apr-2017	FTBL-SS-B50-0-12-R	HS17041053-20	N	SW3050	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
20-Apr-2017	FTBL-SS-B50-12-24-R	HS17041053-21	N	SW3050	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: HS17041053 **Laboratory: ALSHS**

EDD Filename: HS17041053__SEDD **eQAPP Name: Arcadis_FtBliss_ALS_170419**

Method Category: METALS

Method: 6020A **Matrix: Soil**

Sample ID: FTBL-SS-B32-0-12-041917-R **Collected:** 4/19/2017 4:35:00 PM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.215	J	0.237	LOD	0.474	LOQ	MG/KG	J	RI

Sample ID: FTBL-SS-B44-0-12-042017-R **Collected:** 4/20/2017 9:35:00 AM **Analysis Type:** Dilution-1 **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	6710		4.77	LOD	23.8	LOQ	MG/KG	J	Fd

Sample ID: FTBL-SS-B49-0-12-042017-R **Collected:** 4/20/2017 11:00:00 AM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.230	J	0.242	LOD	0.485	LOQ	MG/KG	J	RI

Sample ID: FTBL-SS-B50-0-12-042017-R **Collected:** 4/20/2017 11:20:00 AM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.236	J	0.241	LOD	0.482	LOQ	MG/KG	J	RI

Sample ID: FTBL-SS-B50-12-24-042017-R **Collected:** 4/20/2017 11:30:00 AM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.219	J	0.244	LOD	0.488	LOQ	MG/KG	J	RI

Sample ID: FTBL-SS-B56-0-12-042017-R **Collected:** 4/20/2017 10:20:00 AM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.307	J	0.231	LOD	0.462	LOQ	MG/KG	J	RI

* denotes a non-reportable result

Project Name and Number: 06261038.ALS1.00100 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: HS17041053 **Laboratory: ALSHS**

EDD Filename: HS17041053__SEDD **eQAPP Name: Arcadis_FtBliss_ALS_170419**

Reason Code Legend

Reason Code	*Description*
Fd	Field Duplicate Precision
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.ALS1.00100 - Closed Castner Firing Range

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

HS17041053

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: HS17041053 **Laboratory: ALSHS**

EDD Filename: HS17041053__SEDD **eQAPP Name: Arcadis_FtBliss_ALS_170419**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B13-0-12-041917-RMS (Wet) FTBL-SS-B13-0-12-041917-RMSD (Wet) (FTBL-SS-B13-0-12-041917-R)	ZINC	133	124	82.00-119.00	-	ZINC	Post spike in No qual
FTBL-SS-B13-0-12-041917-RMS (Wet) FTBL-SS-B13-0-12-041917-RMSD (Wet) (FTBL-SS-B13-0-12-041917-R)	ANTIMONY	52	52	72.00-124.00	-	ANTIMONY	Post spike in No qual
FTBL-SS-B55-0-12-042017-RMS (Wet) FTBL-SS-B55-0-12-042017-RMSD (Wet) (FTBL-SS-B55-0-12-042017-R)	LEAD ANTIMONY	159 46.6	- 48.8	84.00-118.00 72.00-124.00	- -	LEAD ANTIMONY	Post spike in No qual
FTBL-SS-B55-0-12-042017-RMS (Wet) FTBL-SS-B55-0-12-042017-RMSD (Wet) (FTBL-SS-B55-0-12-042017-R)	ZINC	179	135	82.00-119.00	-	ZINC	>4x, No qual

Reporting Limit Outliers

Lab Reporting Batch ID: HS17041053 **Laboratory: ALSHS**

EDD Filename: HS17041053__SEDD **eQAPP Name: Arcadis_FtBliss_ALS_170419**

Method: **6020A**

Matrix: **Soil**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
FTBL-SS-B32-0-12-041917-R	ANTIMONY	J	0.215	0.474	LOQ	MG/KG	J (all detects)
FTBL-SS-B49-0-12-042017-R	ANTIMONY	J	0.230	0.485	LOQ	MG/KG	J (all detects)
FTBL-SS-B50-0-12-042017-R	ANTIMONY	J	0.236	0.482	LOQ	MG/KG	J (all detects)
FTBL-SS-B50-12-24-042017-R	ANTIMONY	J	0.219	0.488	LOQ	MG/KG	J (all detects)
FTBL-SS-B56-0-12-042017-R	ANTIMONY	J	0.307	0.462	LOQ	MG/KG	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: HS17041053 **Laboratory: ALSHS**

EDD Filename: HS17041053__SEDD **eQAPP Name: Arcadis_FtBliss_ALS_170419**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (MG/KG)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B19-0-12-041917-R	FD041917 (Dry)			
COPPER	7.55	6.95	8	50.00	No Qualifiers Applied
LEAD	10.4	9.89	5	50.00	
ZINC	48.1	44.6	8	50.00	

Analyte	*Concentration (MG/KG)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B44-0-12-042017-R	FD042017 (Dry)			
ANTIMONY	46.8	39.2	18	50.00	No Qualifiers Applied
COPPER	212	141	40	50.00	
LEAD	6710	5600	18	50.00	
ZINC	65.9	64.1	3	50.00	

Project Name and Number: 06261038.ALS1.00100 - Closed Castner Firing Range

LDC #: 38811A4a
SDG #: HS17041053
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR/IV

Date: 6/6/17
Page: 1 of 2
Reviewer: a
2nd Reviewer: KK

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. MS/D (26/27: Sb PS in Zn SP in, no QLs) (28/29: Sb PS in Pb PS in, no QLs (28/29: Zn >4x)
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	only reviewed for Level IV
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B19-0-12-041917-R	HS17041053-01	Soil	04/19/17
2	FTBL-SS-B20-0-12-041917-R	HS17041053-02	Soil	04/19/17
3	FD041917	HS17041053-03	Soil	04/19/17
4	FTBL-SS-B13-0-12-041917-R	HS17041053-04	Soil	04/19/17
5	FTBL-SS-B14-0-12-041917-R	HS17041053-05	Soil	04/19/17
6	FTBL-SS-B25-0-12-041917-R	HS17041053-06	Soil	04/19/17
7	FTBL-SS-B26-0-12-041917-R	HS17041053-07	Soil	04/19/17
8	FTBL-SS-B31-0-12-041917-R	HS17041053-08	Soil	04/19/17
9	FTBL-SS-B31-12-24-041917-R	HS17041053-09	Soil	04/19/17
10	FTBL-SS-B32-0-12-041917-R**	HS17041053-10**	Soil	04/19/17
11	FTBL-SS-B37-0-12-042017-R	HS17041053-11	Soil	04/201/17
12	FTBL-SS-B37-0-12-042017-RDL TCLP	HS17041053-11DL	Soil	04/201/17
13	FTBL-SS-B37-12-24-042017-R	HS17041053-12	Soil	04/201/17
14	FTBL-SS-B38-0-12-042017-R	HS17041053-13	Soil	04/201/17
15	FTBL-SS-B43-0-12-042017-R	HS17041053-14	Soil	04/201/17

LDC #: 38811A4a **VALIDATION COMPLETENESS WORKSHEET** Date: 6/6/17
SDG #: HS17041053 ADR/IV Page: 2 of 2
Laboratory: ALS Environmental Reviewer: CR
2nd Reviewer: KK

METHOD: Metals (EPA SW 846 Method 6020A)

	Client ID	Lab ID	Matrix	Date
16	FTBL-SS-B44-0-12-042017-R	HS17041053-15	Soil	04/201/17
17	FTBL-SS-B44-0-12-042017-RDX TCLP	HS17041053-15DL	Soil	04/201/17
18	FTBL-SS-B55-0-12-042017-R	HS17041053-16	Soil	04/201/17
19	FD042017	HS17041053-17	Soil	04/201/17
20	FTBL-SS-B56-0-12-042017-R**	HS17041053-18**	Soil	04/201/17
21	FTBL-SS-B49-0-12-042017-R	HS17041053-19	Soil	04/201/17
22	FTBL-SS-B50-0-12-042017-R	HS17041053-20	Soil	04/201/17
23	FTBL-SS-B50-12-24-042017-R	HS17041053-21	Soil	04/201/17
~~24~~	~~FTBL-SS-B19-0-12-041917-RMS~~	~~HS17041053-01MS~~	~~Soil~~	~~04/19/17~~
~~25~~	~~FTBL-SS-B19-0-12-041917-RMSD~~	~~HS17041053-01MSD~~	~~Soil~~	~~04/19/17~~
26	FTBL-SS-B13-0-12-041917-RMS	HS17041053-04MS	Soil	04/19/17
27	FTBL-SS-B13-0-12-041917-RMSD	HS17041053-04MSD	Soil	04/19/17
28	FTBL-SS-B55-0-12-042017-RMS	HS17041053-16MS	Soil	04/201/17
29	FTBL-SS-B55-0-12-042017-RMSD	HS17041053-16MSD	Soil	04/201/17
30				
31				
32				
33				
34				

Notes:

LDC #: 38811A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer:
2nd Reviewer:

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Soil preparation factor applied: 100x

Sample Concentration units, unless otherwise noted: mg/Kg
Associated Samples: 15, 16, 18-20

				Sample Identification										
Analyte	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	No qualifiers (>5x)										
Sb		0.445	0.2225											

Sample Concentration units, unless otherwise noted: mg/Kg
Associated Samples: 18, 20

				Sample Identification										
Analyte	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	No qualifiers (>5x)										
Pb		4.092	2.046											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 38602A4b

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: AL
2nd Reviewer: KK

METHOD: Metals (EPA Method 6010C/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers (Parent Only)
	1	FTBL-SS-B19-0-12-041917-R-QA		
Copper	7.55	6.7	12	~~NQ~~
Lead	10.4	12.0	14	
Zinc	48.1	53.8	11	

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers (Parent Only)
	16	FTBL-SS-B44-0-12-041917-R-QA		
Antimony	46.8	57.5	21	
Copper	212	348	49	
Lead	6710	12600	61	J det/A
Zinc	65.9	86.9	27	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\38811A4a.wpd

NQ = no qualifier because one or both results are <LOQ

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: June 7, 2017

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): HS17041053

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-SS-B32-0-12-041917-R	HS17041053-10	Soil	04/19/17
FTBL-SS-B56-0-12-042017-R	HS17041053-18	Soil	04/20/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Copper, Lead, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

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I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Antimony Lead	0.445 ug/L 4.092 ug/L	FTBL-SS-B56-0-12-042017-R

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For FTBL-SS-B55-0-12-042017-RMS/MSD, no data were qualified for Zinc percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration. No data were qualified for MS/MSD %R outside QC limits when the post digestion spike was within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG HS17041053

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG HS17041053

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG HS17041053

No Sample Data Qualified in this SDG

LDC #: 38811A4a **VALIDATION COMPLETENESS WORKSHEET** Date: 6/6/17
SDG #: HS17041053 ADR/IV Page: 1 of 2
Laboratory: ALS Environmental Reviewer:
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. MS/D (26/27: Sb PS in Zn SD in, no qual) (28/29: Sb PS in Pb PS in, no qual) (28/29: Zn >4x)
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	only reviewed for Level IV
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B19-0-12-041917-R	HS17041053-01	Soil	04/19/17
2	FTBL-SS-B20-0-12-041917-R	HS17041053-02	Soil	04/19/17
3	FD041917	HS17041053-03	Soil	04/19/17
4	FTBL-SS-B13-0-12-041917-R	HS17041053-04	Soil	04/19/17
5	FTBL-SS-B14-0-12-041917-R	HS17041053-05	Soil	04/19/17
6	FTBL-SS-B25-0-12-041917-R	HS17041053-06	Soil	04/19/17
7	FTBL-SS-B26-0-12-041917-R	HS17041053-07	Soil	04/19/17
8	FTBL-SS-B31-0-12-041917-R	HS17041053-08	Soil	04/19/17
9	FTBL-SS-B31-12-24-041917-R	HS17041053-09	Soil	04/19/17
10	FTBL-SS-B32-0-12-041917-R**	HS17041053-10**	Soil	04/19/17
11	FTBL-SS-B37-0-12-042017-R	HS17041053-11	Soil	04/201/17
12	FTBL-SS-B37-0-12-042017-RDL TCLP	HS17041053-11DL	Soil	04/201/17
13	FTBL-SS-B37-12-24-042017-R	HS17041053-12	Soil	04/201/17
14	FTBL-SS-B38-0-12-042017-R	HS17041053-13	Soil	04/201/17
15	FTBL-SS-B43-0-12-042017-R	HS17041053-14	Soil	04/201/17

LDC #: 38811A4a **VALIDATION COMPLETENESS WORKSHEET** Date: 6/6/17
SDG #: HS17041053 ~~ADR~~ (IV) Page: 2 of 2
Laboratory: ALS Environmental Reviewer:
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020A)

	Client ID	Lab ID	Matrix	Date
~~16~~	~~FTBL-SS-B44-0-12-042017-R~~	~~HS17041053-15~~	~~Soil~~	~~04/201/17~~
17	FTBL-SS-B44-0-12-042017-R~~X~~ TCLP	HS17041053-15DL	Soil	04/201/17
18	FTBL-SS-B55-0-12-042017-R	HS17041053-16	Soil	04/201/17
~~19~~	~~FD042017~~	~~HS17041053-17~~	~~Soil~~	~~04/201/17~~
20	FTBL-SS-B56-0-12-042017-R**	HS17041053-18**	Soil	04/201/17
~~21~~	~~FTBL-SS-B49-0-12-042017-R~~	~~HS17041053-19~~	Soil	04/201/17
22	FTBL-SS-B50-0-12-042017-R	HS17041053-20	Soil	04/201/17
23	FTBL-SS-B50-12-24-042017-R	HS17041053-21	Soil	04/201/17
~~24~~	~~FTBL-SS-B19-0-12-041917-RMS~~	~~HS17041053-01MS~~	~~Soil~~	~~04/19/17~~
~~25~~	~~FTBL-SS-B19-0-12-041917-RMSD~~	~~HS17041053-01MSD~~	~~Soil~~	~~04/19/17~~
26	FTBL-SS-B13-0-12-041917-RMS	HS17041053-04MS	Soil	04/19/17
27	FTBL-SS-B13-0-12-041917-RMSD	HS17041053-04MSD	Soil	04/19/17
28	FTBL-SS-B55-0-12-042017-RMS	HS17041053-16MS	Soil	04/201/17
29	FTBL-SS-B55-0-12-042017-RMSD	HS17041053-16MSD	Soil	04/201/17
30				
31				
32				
33				
34				

Notes:

LDC #: 35611A4c

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: CE
2nd Reviewer: [signature]

Method: Metals (EPA SW 846 Method 6010/6020/7000)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were the low standard checks within 70-130%	✓			
Were all initial calibration correlation coefficients within limits as specified by the method?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

LDC #: 35881A4a

VALIDATION FINDINGS CHECKLIST

Reviewer: CP
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.		✓	✓	
Target analytes were detected in the field blanks.				

LDC #: 38811A

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: CR
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
~~D~~1-11, 13-16,		Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ____
18-23		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
12, 17		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
QC: 24, 25		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
26, 27		Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ____
28, 29		Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

LDC #: 38811A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: a
2nd Reviewer:

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000) Soil preparation factor applied: 100x

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: ~~15, 16, 18-20~~ 20

				Sample Identification										
Analyte	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	No qualifiers (>5x)										
Sb		0.445	0.2225											

Sample Concentration units, unless otherwise noted: mg/Kg Associated Samples: ~~18, 20~~ 20

				Sample Identification										
Analyte	Maximum PB[a] (ug/l)	Maximum ICB/CCB[a] (ug/l)	Action Level	No qualifiers (>5x)										
Pb		4.092	2.046											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 38514A4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: a
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration)	Cu	102.655	100	103	103	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV	ICP/MS (Continuing calibration)	Pb	101.796	100	102	102	Y
	CVAA (Continuing calibration)						

Comments:

LDC #: 38814Q

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: A
2nd Reviewer: _____

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check	Cu	94.61	100	94.6	94.6	Y
LCS	Laboratory control sample	Pb	9.774	10	97.7	97.7	
26	Matrix spike	Sb	(SSR-SR) 4.9252	9.464	52.0	52.0	
26|27	Duplicate	Pb	18.09	17.62	2.58	2.58	
4	ICP serial dilution	Zn	35.76	34.1	4.88	4.88	

Comments: _____

LDC #: 38511A4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd reviewer: _____

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Zn were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$10 = \frac{50mL\ (381.877ug/L)}{0.9893\ (0.5331g)(1000)} = 36.20mg/kg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	10	Zn	36.2	36.2	Y
	20	Pb	16.5	16.5	Y

Note: _____

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September 08, 2016

Analytical Report for Service Request No: K1608207

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

RE: Closed Castner Firing Range / 06261038.0001.00400

Dear (b) (6),

Enclosed are the results of the sample(s) submitted to our laboratory July 20, 2016
For your reference, these analyses have been assigned our service request number **K1608207.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is (b) (6). You may also contact me via email at (b) (6).

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

(b) (6)
Senior Project
Manager

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Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
Chain of Custody
Total Solids
Metals
Raw Data
    Total Solids
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
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ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1608207
Project:	Closed Castner Firing Range/ 06261038.0001.00400	**Date Received:**	07/20/16
Sample Matrix:	Soil and Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Fifteen samples were received for analysis at ALS Environmental on 07/20/16. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:
Antimony recoveries are generally low for soil and sediment samples when digested using EPA Method 3050B. Despite anticipated low recoveries, the method is still generally prescribed because of its versatility for general metals analysis. Antimony results (in conjunction with the matrix spike recovery) from this procedure should only be used as indicators to estimate concentrations. The matrix spike recoveries of Antimony for sample FTBL-SS-B57-0-6-071816 were below the DoD QSM control criterion. Since low recoveries resulted from a method defect and were possibly magnified by certain matrix components, no corrective action was appropriate. Alternative procedures that specifically target Antimony are available but were not specified for this project. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control.

The matrix spike duplicate recovery of Lead for sample FTBL-SS-B57-0-6-071816 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by (b) (6) _____

TRRP

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Appendix A ALS Kelso-Laboratory Data Package Signature Page

This data package consists of:

- ☒ This signature page, the laboratory review checklist, and the following reportable data:
- ☒ R1 Field chain-of-custody documentation;
- ☒ R2 Sample identification cross-reference;
- ☒ R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
- ☒ R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
- ☒ R5 Test reports/summary forms for blank samples;
- ☒ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
- ☒ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
- ☒ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) the amount of analyte measured in the duplicate,
  b) the calculated RPD, and
  c) the laboratory's QC limits for analytical duplicates.
- ☒ R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;
- ☒ R10 Other problems or anomalies.
- ☒ The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable:] [This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

[redacted] (b) (6) _____ [redacted] Senior Project Mgr 09/08/16

Name (Printed) Official Title (printed) Date

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608207				
Reviewer Name: (b) (6)			Prep Batch Number(s): Various				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X1			
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608207				
Reviewer Name: [redacted]			Prep Batch Number(s): Various				
#[1]	**A[2]**	**Description**	**Yes**	**No**	**NA[3]**	**NR[4]**	**ER#[5]**
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 09/08/2016
Project Name: Closed Castner Firing Range	Laboratory Job Number: K1608207
Reviewer Name: (b) (6)	Prep Batch Number(s): Various

ER#[5]	Description
X1	See Total Metals Matrix Spike Recovery Exceptions narrative notes.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Chain of Custody

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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: VN1608207

Project Manager:	(b) (6)	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:	[redacted]		
Project Number:	[redacted]		
Send copy to:	[redacted]		
Sampler's Name:	(b) (6)		

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present			
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

REQUESTED ANALYSIS

TAT

- ■ Standard 15 day
- □ Same Day ' 100%
- □ Next Day ***
- □ 3 Day
- ■ EDD

Surcharges. Please call for availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Explosives	TCLP Lead	Comments
FTBL-SS-BS5-0-12-0718160	S	0718160	0935		2	X		X	~~Hold~~ AG Hold
FTBL-SS-BS10-0-12-0718160	S	0718160	1110		2	X		X	~~Hold~~ AG Hold
FTBL-SS-BS7-0-6-0718160	S	0718160	0935		1	X			
FTBL-SS-BS8-0-6-0718160	S	0718160	0925		1	X			
FTBL-SS-BS9-0-6-0718160	S	0718160	0915		1	X			
FTBL-SS-BS10-0-6-0718160	S	0718160	0900		1	X			
FTBL-SS-BS19-0-12-0718160	S	0718160	1210 AG		2	X		X	~~Hold~~ AG Hold
FTBL-SS-BS19 SG AG-12-24-0718160	S	0718160	132035		2	X		X	Hold
FTBL-SS-BS20-0-12-0718160	S	0718160	1320		2	X		X	Hold
FTBL-SS-BS1-0-6-0718160	S	0718160	1155		1	X			
FTBL-SS-BS2-0-6-0718160	S	0718160	1145		1	X			

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6) [redacted]		0718160/1400	(b) (6) [redacted]		7/20/16 1020

* Note: Hold TCLP Lead for highest Total Lead interval per berm location
Confirm with Garett Ferguson before running any TCLP Pb samples.

Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: h1608207

Project Manager:	(b) (6)	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
Send copy to:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present			
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

REQUESTED ANALYSIS

TAT
- ■ Standard 15 day
- ☐ Same Day * 100%
- ☐ Next Day ***
- ☐ 3 Day
- ■ EDD

Surcharges. Please call for availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Explosives	Comments
FTBL-SS-BS3-0-6-0718160	S	071816	1210		1	X		
FTBL-SS-1354-0-6-0718160	S	071816	1220		1	X		
FD0718160	S	071816	—		1	X		
EB0718160	W	071816	1350		1	X		

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6)		071816 1400	(b) (6)		7/20/16 1020

PC Hrg

Cooler Receipt and Preservation Form

Client Arcadis Service Request *K16* 08207

Received: 7/20/16 Opened: 7/20/16 By: KS Unloaded: 7/20/16 By: KS

1. Samples were received via? *Mail* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1, Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number NA	Filed
1.4	1.1	.7	.4	-.3	342		7836 1697 4063	
-.1	-.2	1.0	.9	-.1	359		7836 1697 4041	
-.3	-.5	1.0	.8	-.2	354		7836 1697 4052	

4. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Page ____ *of* ____

Total Solids

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www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/18/16
Sample Matrix:	Soil	**Date Received:**	07/20/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
FTBL-SS-B57-0-6-071816	K1608207-003	**94.0**	-	-	1	08/01/16 16:56	
FTBL-SS-B58-0-6-071816	K1608207-004	**91.0**	-	-	1	08/01/16 16:56	
FTBL-SS-B59-0-6-071816	K1608207-005	**90.7**	-	-	1	08/01/16 16:56	
FTBL-SS-B60-0-6-071816	K1608207-006	**89.9**	-	-	1	08/01/16 16:56	
FTBL-SS-B51-0-6-071816	K1608207-010	**99.1**	-	-	1	08/01/16 16:56	
FTBL-SS-B52-0-6-071816	K1608207-011	**91.4**	-	-	1	08/01/16 16:56	
FTBL-SS-B53-0-6-071816	K1608207-012	**90.8**	-	-	1	08/01/16 16:56	
FTBL-SS-B54-0-6-071816	K1608207-013	**99.7**	-	-	1	08/01/16 16:56	
FD071816	K1608207-014	**98.8**	-	-	1	08/01/16 16:56	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/18/16
Sample Matrix:	Soil	**Date Received:**	07/20/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
FTBL-SS-B57-0-6-071816	K1608207-003DUP	-	94.0	94.3	94.2	<1	20	08/01/16
Batch QC	K1608211-002DUP	-	91.6	91.5	91.6	<1	20	08/01/16

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project No.:	06261038.0001.00400	**Date Collected:**	7/18/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B57-0-6-071816** **Lab Code:** **K1608207-003**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.021	0.017	5.0	08/05/16	08/24/16	0.193		J
Copper	6020A	0.085	0.043	0.017	5.0	08/05/16	08/24/16	17.8		
Lead	6020A	0.043	0.011	0.004	5.0	08/05/16	08/24/16	32.2		J
Zinc	6020A	0.43	0.21	0.09	5.0	08/05/16	08/24/16	59.3		

% Solids: **94.0**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project No.:	06261038.0001.00400	**Date Collected:**	7/18/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B58-0-6-071816** **Lab Code:** **K1608207-004**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.022	0.017	5.0	08/05/16	08/24/16	0.168		J
Copper	6020A	0.087	0.043	0.017	5.0	08/05/16	08/24/16	24.0		
Lead	6020A	0.043	0.011	0.004	5.0	08/05/16	08/24/16	46.7		J
Zinc	6020A	0.43	0.22	0.09	5.0	08/05/16	08/24/16	54.7		

% Solids: **91.0**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project No.:	06261038.0001.00400	**Date Collected:**	7/18/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B59-0-6-071816** **Lab Code:** **K1608207-005**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.040	0.020	0.016	5.0	08/05/16	08/24/16	0.207		J
Copper	6020A	0.080	0.040	0.016	5.0	08/05/16	08/24/16	30.4		
Lead	6020A	0.040	0.010	0.004	5.0	08/05/16	08/24/16	49.9		J
Zinc	6020A	0.40	0.20	0.08	5.0	08/05/16	08/24/16	67.2		

% Solids: **90.7**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project No.:	06261038.0001.00400	**Date Collected:**	7/18/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B60-0-6-071816** **Lab Code:** **K1608207-006**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.045	0.022	0.018	5.0	08/05/16	08/24/16	0.146		J
Copper	6020A	0.090	0.045	0.018	5.0	08/05/16	08/24/16	19.2		
Lead	6020A	0.045	0.011	0.004	5.0	08/05/16	08/24/16	25.7		J
Zinc	6020A	0.45	0.22	0.09	5.0	08/05/16	08/24/16	39.6		

% Solids: **89.9**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project No.:	06261038.0001.00400	**Date Collected:**	7/18/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B51-0-6-071816** **Lab Code:** **K1608207-010**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.022	0.017	5.0	08/05/16	08/24/16	0.822		J
Copper	6020A	0.087	0.043	0.017	5.0	08/05/16	08/24/16	40.1		
Lead	6020A	0.043	0.011	0.004	5.0	08/05/16	08/24/16	119		J
Zinc	6020A	0.44	0.22	0.09	5.0	08/05/16	08/24/16	63.7		

% Solids: **99.1**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project No.:	06261038.0001.00400	**Date Collected:**	7/18/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B52-0-6-071816** **Lab Code:** **K1608207-011**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.046	0.023	0.018	5.0	08/05/16	08/24/16	0.321		J
Copper	6020A	0.091	0.046	0.018	5.0	08/05/16	08/24/16	30.6		
Lead	6020A	0.046	0.011	0.005	5.0	08/05/16	08/24/16	74.9		J
Zinc	6020A	0.46	0.23	0.09	5.0	08/05/16	08/24/16	59.2		

% Solids: **91.4**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608207
Date Collected: 7/18/2016
Date Received: 7/20/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B53-0-6-071816 **Lab Code:** K1608207-012

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.041	0.020	0.016	5.0	08/05/16	08/24/16	0.175		J
Copper	6020A	0.082	0.041	0.016	5.0	08/05/16	08/24/16	15.4		
Lead	6020A	0.041	0.010	0.004	5.0	08/05/16	08/24/16	29.1		J
Zinc	6020A	0.41	0.20	0.08	5.0	08/05/16	08/24/16	56.9		

% Solids: 90.8

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project No.:	06261038.0001.00400	**Date Collected:**	7/18/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B54-0-6-071816** **Lab Code:** **K1608207-013**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.046	0.023	0.018	5.0	08/05/16	08/24/16	2.16		J
Copper	6020A	0.091	0.046	0.018	5.0	08/05/16	08/24/16	40.1		
Lead	6020A	0.046	0.011	0.005	5.0	08/05/16	08/24/16	330		J
Zinc	6020A	0.46	0.23	0.09	5.0	08/05/16	08/24/16	67.3		

% Solids: **99.7**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project No.:	06261038.0001.00400	**Date Collected:**	7/18/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FD071816** **Lab Code:** **K1608207-014**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.021	0.017	5.0	08/05/16	08/24/16	0.166		J
Copper	6020A	0.085	0.043	0.017	5.0	08/05/16	08/24/16	9.95		
Lead	6020A	0.043	0.011	0.004	5.0	08/05/16	08/24/16	21.2		J
Zinc	6020A	0.43	0.21	0.09	5.0	08/05/16	08/24/16	110		

% Solids: **98.8**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Service Request: K1608207
Project No.: 06261038.0001.00400
Date Collected:
Project Name: Closed Castner Firing Range
Date Received:
Matrix: SOIL
Units: mg/Kg
Basis: DRY

Sample Name: Method Blank
Lab Code: KQ1609274-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.025	0.020	5.0	08/05/16	08/24/16	0.025	U	J
Copper	6020A	0.100	0.050	0.020	5.0	08/05/16	08/24/16	0.050	U	
Lead	6020A	0.050	0.012	0.005	5.0	08/05/16	08/24/16	0.026	J	J
Zinc	6020A	0.50	0.25	0.10	5.0	08/05/16	08/24/16	0.19	J	

% Solids: 100.0

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	25.1	100	25.0	24.6	98	24.8	99	6020A
Copper	12.5	12.9	103	25.0	25.2	101	25.5	102	6020A
Lead	25.0	25.7	103	25.0	25.1	100	24.8	99	6020A
Zinc	25.0	25.3	101	25.0	24.2	97	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	25.4	102	24.7	99	6020A
Copper				25.0	25.0	100	25.5	102	6020A
Lead				25.0	26.2	105	25.0	100	6020A
Zinc				25.0	24.8	99	24.6	98	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99			6020A
Copper				25.0	25.5	102			6020A
Lead				25.0	25.4	102			6020A
Zinc				25.0	24.6	98			6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608207

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVS1									
	Antimony	0.104	0.100	104	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Copper	0.178	0.200	89	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Lead	0.102	0.100	102	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Zinc	0.992	1.000	99	80.0 - 120.0	MS	8/24/2016	17:29	082416d
LLCCVS1									
	Antimony	0.129	0.100	129	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Copper	0.191	0.200	96	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Lead	0.108	0.100	108	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Zinc	0.848	1.000	85	70.0 - 130.0	MS	8/24/2016	18:47	082416d
LLCCVS2									
	Antimony	0.098	0.100	98	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Copper	0.202	0.200	101	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Lead	0.102	0.100	102	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Zinc	1.141	1.000	114	70.0 - 130.0	MS	8/24/2016	20:02	082416d

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.040	U	0.040	U	0.040	U	0.048	J	6020A
Copper	0.040	U	0.040	U	0.040	U	0.040	U	6020A
Lead	0.010	U	0.010	U	0.010	U	0.010	U	6020A
Zinc	0.20	U	0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.040	U	0.040	U			6020A
Copper			0.040	U	0.040	U			6020A
Lead			0.010	U	0.010	U			6020A
Zinc			0.20	U	0.20	U			6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.0	0.0				
Copper	0.0	50.0	0.6	45.6	91			
Lead	0.0		0.1	0.1				
Zinc	0.0	25.0	0.2	21.7	87			

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 94.0

Sample Name: FTBL-SS-B57-0-6-071816S **Lab Code:** K1608207-003S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	33.035		0.193		87.199	38	J	6020A
Copper	84 - 119	60.679		17.843		43.60	98		6020A
Lead	84 - 118	111.474		32.227		87.20	91		6020A
Zinc	82 - 119	139.09		59.35		87.20	91		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 94.0

Sample Name: FTBL-SS-B57-0-6-071816SD **Lab Code:** K1608207-003SD

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	33.293		0.193		86.490	38	J	6020A
Copper	84 - 119	58.560		17.843		43.25	94		6020A
Lead	84 - 118	103.903		32.227		86.49	83	J	6020A
Zinc	82 - 119	139.83		59.35		86.49	93		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: WATER

Sample Name: FTBL-SS-B57-0-6-071816A **Lab Code:** K1608207-003A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	51.32		0.45		50.0	102		6020A
Copper	75 - 125	91.14		41.93		50.0	98		6020A
Lead	75 - 125	119.770		75.734		50.0	88		6020A
Zinc	75 - 125	190.48		139.47		50.0	102		6020A

Metals

- 6 -

DUPLICATES

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608207
Project No.:	06261038.0001.00400	**Units:**	MG/KG
Project Name:	Closed Castner Firing Range	**Basis:**	DRY
Matrix:	SOIL	**% Solids:**	94.0

Sample Name: **FTBL-SS-B57-0-6-071816SD** **Lab Code:** **K1608207-003SD**

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Antimony	20	33.035		33.293		0.8		6020A
Copper	20	60.679		58.560		3.6		6020A
Lead	20	111.474		103.903		7.0		6020A
Zinc	20	139.09		139.83		0.5		6020A

An empty field in the Control Limit column indicates the control limit is not applicable.

Form VI - IN

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	1000.0	975.2	98					
Copper	500.0	485.4	97					
Lead	1000.0	953.7	95					
Zinc	1000.0	955.6	96					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **FTBL-SS-B57-0-6-071816L** **Lab Code:** **K1608207-003L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	0.453		0.476	J	5		MS
Copper	41.93		44.66		7		MS
Lead	75.73		78.96		4		MS
Zinc	139.47		144.29		3		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-04**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.10	0.05	0.04	MS
Copper	65		0.20	0.10	0.04	MS
Lead	208		0.100	0.025	0.010	MS
Zinc	66		1.00	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	45.000	3000	6020A
Copper	45.000	3000	6020A
Lead	45.000	3000	6020A
Zinc	45.000	3000	6020A

Comments:

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Weight (g)	Final Volume(mL)
K1608207-003	8/5/2016	1.25	100.0
K1608207-003S	8/5/2016	1.22	100.0
K1608207-003SD	8/5/2016	1.23	100.0
K1608207-004	8/5/2016	1.27	100.0
K1608207-005	8/5/2016	1.37	100.0
K1608207-006	8/5/2016	1.24	100.0
K1608207-010	8/5/2016	1.16	100.0
K1608207-011	8/5/2016	1.20	100.0
K1608207-012	8/5/2016	1.35	100.0
K1608207-013	8/5/2016	1.10	100.0
K1608207-014	8/5/2016	1.19	100.0
KQ1609274-01	8/5/2016	1.00	100.0
KQ1609274-02	8/5/2016	100.0	100.0

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Blank	1.0	17:11			X								X		X										X	
Standard 1	1.0	17:14			X								X		X										X	
ICV1	1.0	17:17			X								X		X										X	
CCV1	1.0	17:20			X								X		X										X	
ICB1	1.0	17:23			X								X		X										X	
CCB1	1.0	17:26			X								X		X										X	
LLICVS1	1.0	17:29			X								X		X										X	
ICS-A1	1.0	17:32			X								X		X										X	
ICS-AB1	1.0	17:35			X								X		X										X	
ZZZZZZ	5.0	17:38																								
ZZZZZZ	5.0	17:41																								
ZZZZZZ	5.0	17:44																								
ZZZZZZ	5.0	17:47																								
ZZZZZZ	5.0	17:50																								
ZZZZZZ	5.0	17:53																								
ZZZZZZ	5.0	17:56																								
ZZZZZZ	5.0	17:59																								
ZZZZZZ	5.0	18:02																								
CCV2	1.0	18:05			X								X		X										X	
CCB2	1.0	18:08			X								X		X										X	
ZZZZZZ	5.0	18:11																								
ZZZZZZ	5.0	18:14																								
ZZZZZZ	1.0	18:17																								
ZZZZZZ	1.0	18:20																								
ZZZZZZ	5.0	18:23																								
ZZZZZZ	5.0	18:26																								
ZZZZZZ	5.0	18:29																								
ZZZZZZ	5.0	18:32																								
ZZZZZZ	1.0	18:35																								
ZZZZZZ	5.0	18:38																								
CCV3	1.0	18:41			X								X		X										X	
CCB3	1.0	18:44			X								X		X										X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
LLCCVS1	1.0	18:47			X								X		X										X	
ZZZZZZ	5.0	18:50																								
ZZZZZZ	5.0	18:53																								
ZZZZZZ	5.0	18:56																								
KQ1609274-01	5.0	18:59			X								X		X										X	
K1608207-003	5.0	19:02			X								X		X										X	
K1608207-003L	5.0	19:05			X								X		X										X	
K1608207-003A	5.0	19:08			X								X		X										X	
K1608207-003S	5.0	19:11			X								X		X										X	
K1608207-003SD	5.0	19:14			X								X		X										X	
KQ1609274-02	5.0	19:17			X								X		X										X	
CCV4	1.0	19:20			X								X		X										X	
CCB4	1.0	19:23			X								X		X										X	
ZZZZZZ	1.0	19:26																								
K1608207-004	5.0	19:29			X								X		X										X	
K1608207-005	5.0	19:32			X								X		X										X	
K1608207-006	5.0	19:35			X								X		X										X	
K1608207-010	5.0	19:38			X								X		X										X	
K1608207-011	5.0	19:41			X								X		X										X	
K1608207-012	5.0	19:44			X								X		X										X	
K1608207-013	5.0	19:47			X								X		X										X	
K1608207-014	5.0	19:50			X								X		X										X	
ZZZZZZ	5.0	19:53																								
CCV5	1.0	19:56			X								X		X										X	
CCB5	1.0	19:59			X								X		X										X	
LLCCVS2	1.0	20:02			X								X		X										X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608207

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
Blank	Blank	1711	100		100		100							
Standard 1	Standard 1	1714	101		101		102							
ICV1	ICV	1717	101		103		100							
CCV1	CCV	1720	101		102		101							
ICB1	ICB	1723	101		102		99							
CCB1	CCB	1726	99		100		100							
LLICVS1	LLICVS1	1729	99		102		100							
ICS-A1	ICSA	1732	85		88		94							
ICS-AB1	ICSAB	1735	87		89		94							
ZZZZZZ	ZZZZZZ	1738												
ZZZZZZ	ZZZZZZ	1741												
ZZZZZZ	ZZZZZZ	1744												
ZZZZZZ	ZZZZZZ	1747												
ZZZZZZ	ZZZZZZ	1750												
ZZZZZZ	ZZZZZZ	1753												
ZZZZZZ	ZZZZZZ	1756												
ZZZZZZ	ZZZZZZ	1759												
ZZZZZZ	ZZZZZZ	1802												
CCV2	CCV	1805	103		105		103							
CCB2	CCB	1808	102		102		101							
ZZZZZZ	ZZZZZZ	1811												
ZZZZZZ	ZZZZZZ	1814												
ZZZZZZ	ZZZZZZ	1817												
ZZZZZZ	ZZZZZZ	1820												
ZZZZZZ	ZZZZZZ	1823												
ZZZZZZ	ZZZZZZ	1826												
ZZZZZZ	ZZZZZZ	1829												
ZZZZZZ	ZZZZZZ	1832												
ZZZZZZ	ZZZZZZ	1835												
ZZZZZZ	ZZZZZZ	1838												
CCV3	CCV	1841	98		95		94							
CCB3	CCB	1844	98		99		101							
LLCCVS1	LLCCVS1	1847	101		102		103							
ZZZZZZ	ZZZZZZ	1850												
ZZZZZZ	ZZZZZZ	1853												
ZZZZZZ	ZZZZZZ	1856												
KQ1609274-01	Method Blank	1859	100		104		103							
K1608207-003	FTBL-SS-B57-0-6-	1902	104		104		106							
K1608207-003L	FTBL-SS-B57-0-6-	1905	107		109		107							
K1608207-003A	FTBL-SS-B57-0-6-	1908	104		103		109							
K1608207-003S	FTBL-SS-B57-0-6-	1911	104		104		110							
K1608207-003SD	FTBL-SS-B57-0-6-	1914	104		103		111							
KQ1609274-02	Lab Control	1917	110		107		109							
CCV4	CCV	1920	109		108		107							

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608207

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
CCB4	CCB	1923	108		109		106							
ZZZZZZ	ZZZZZZ	1926												
K1608207-004	FTBL-SS-B58-0-6-	1929	103		104		107							
K1608207-005	FTBL-SS-B59-0-6-	1932	103		106		109							
K1608207-006	FTBL-SS-B60-0-6-	1935	103		103		107							
K1608207-010	FTBL-SS-B51-0-6-	1938	86		92		99							
K1608207-011	FTBL-SS-B52-0-6-	1941	104		105		109							
K1608207-012	FTBL-SS-B53-0-6-	1944	104		102		106							
K1608207-013	FTBL-SS-B54-0-6-	1947	105		106		108							
K1608207-014	FD071816	1950	102		102		110							
ZZZZZZ	ZZZZZZ	1953												
CCV5	CCV	1956	109		106		105							
CCB5	CCB	1959	108		107		106							
LLCCVS2	LLCCVS2	2002	107		108		108							

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: WATER

Service Request: K1608207
Date Collected: 7/18/2016
Date Received: 7/20/2016
Units: ug/L
Basis: NA

Sample Name: EB071816 **Lab Code:** K1608207-015

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	07/21/16	08/03/16	0.012	U	
Copper	6020A	0.10	0.05	0.02	1.0	07/21/16	08/03/16	0.15		
Lead	6020A	0.020	0.010	0.004	1.0	07/21/16	08/03/16	0.038		
Zinc	6020A	0.5	0.5	0.2	1.0	08/04/16	08/05/16	0.3	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: WATER

Service Request: K1608207
Date Collected:
Date Received:
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1608449-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	07/21/16	08/03/16	0.012	U	
Copper	6020A	0.10	0.05	0.02	1.0	07/21/16	08/03/16	0.05	U	
Lead	6020A	0.020	0.010	0.004	1.0	07/21/16	08/03/16	0.007	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: WATER

Service Request: K1608207
Date Collected:
Date Received:
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1609201-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Zinc	6020A	0.5	0.5	0.2	1.0	08/04/16	08/05/16	0.5	U	

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	26.1	104	25.0	24.8	99	25.1	100	6020A
Copper	12.5	12.4	99	25.0	25.0	100	25.2	101	6020A
Lead	25.0	25.2	101	25.0	25.0	100	25.4	102	6020A
Zinc	25.0	25.5	102	25.0	25.2	101	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99	24.8	99	6020A
Copper				25.0	25.5	102	25.5	102	6020A
Lead				25.0	25.1	100	25.4	102	6020A
Zinc				25.0	24.8	99			6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.7	99			6020A
Copper				25.0	25.2	101			6020A
Lead				25.0	25.1	100			6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608207

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVW1									
	Antimony	0.051	0.05	102	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Copper	0.101	0.10	101	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Lead	0.020	0.02	100	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
LLCCVW1									
	Antimony	0.046	0.05	92	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Copper	0.090	0.10	90	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Lead	0.020	0.02	100	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
LLCCVW2									
	Antimony	0.057	0.05	114	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Copper	0.106	0.10	106	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Lead	0.024	0.02	120	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
LLICVW1									
	Zinc	0.44	0.50	88	80.0 - 120.0	MS	8/5/2016	05:59	080516AMS
LLCCVW1									
	Zinc	0.47	0.50	94	70.0 - 130.0	MS	8/5/2016	06:43	080516AMS

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.012	J	0.006	U	0.020	J	0.006	U	6020A
Copper	0.02	U	0.02	U	0.02	U	0.02	U	6020A
Lead	0.005	J	0.004	U	0.008	J	0.007	J	6020A
Zinc	0.2	U	0.2	U	0.2	U	0.2	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.006	U	0.013	J			6020A
Copper			0.02	U	0.02	U			6020A
Lead			0.008	J	0.006	J			6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.06	0.04				
Copper	0.0	50.0	2.38	47.7	95			
Lead	0.0		0.17	0.14				
Zinc	0.0	25.0	2.04	26.4	106			

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** NA

Matrix: WATER

Sample Name: Batch QC1A **Lab Code:** K1608011-007A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	21.572		0.012	J	20.0	108		6020A
Copper	75 - 125	22.14		0.12		20.0	110		6020A
Lead	75 - 125	21.497		0.037		20.0	107		6020A
Zinc	75 - 125	22.49		0.30	J	20.0	111		6020A

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	49.8	100					
Copper	12.5	12.8	102					
Lead	50	50.6	101					
Zinc	25	23.9	96					

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	50.7	101					
Copper	12.5	12.7	102					
Lead	50	51.7	103					
Zinc	25	24.4	98					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **Batch QC1L** **Lab Code:** **K1608011-007L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	0.012	J	0.030	U	100.0		MS
Copper	0.12		0.11	J	8		MS
Lead	0.037		0.034	J	8		MS
Zinc	0.30	J	2.19	J	630		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-03**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.050	0.013	0.006	MS
Copper	65		0.10	0.05	0.02	MS
Lead	208		0.020	0.010	0.004	MS
Zinc	66		0.50	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	15.000	2000	6020A
Copper	15.000	2000	6020A
Lead	15.000	2000	6020A
Zinc	15.000	2000	6020A

Comments:

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608207-015	7/21/2016	25.0	25.0
KQ1608449-01	7/21/2016	25.0	25.0
KQ1608449-02	7/21/2016	25.0	25.0
KQ1608449-03	7/21/2016	25.0	25.0

Metals

-13-

PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608207-015	8/4/2016	25.0	25.0
KQ1609201-01	8/4/2016	25.0	25.0
KQ1609201-02	8/4/2016	25.0	25.0
KQ1609201-03	8/4/2016	25.0	25.0

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Cal. Blk	1.0	11:58			X								X		X											
Cal. Stn	1.0	12:05			X								X		X											
ICV1	1.0	12:08			X								X		X											
CCV1	1.0	12:13			X								X		X											
ZZZZZZ	1.0	12:20																								
ICB1	1.0	12:24			X								X		X											
CCB1	1.0	12:28			X								X		X											
LLICVW1	1.0	12:32			X								X		X											
ZZZZZZ	1.0	12:35																								
ICS-A1	1.0	12:43			X								X		X											
ICS-AB1	1.0	12:46			X								X		X											
ZZZZZZ	1.0	12:50																								
ZZZZZZ	1.0	13:06																								
ZZZZZZ	1.0	13:10																								
ZZZZZZ	1.0	13:14																								
ZZZZZZ	5.0	13:18																								
ZZZZZZ	1.0	13:22																								
ZZZZZZ	1.0	13:25																								
ZZZZZZ	1.0	13:29																								
ZZZZZZ	1.0	13:33																								
CCV2	1.0	13:36			X								X		X											
CCB2	1.0	13:44			X								X		X											
ZZZZZZ	1.0	13:48																								
ZZZZZZ	1.0	13:52																								
ZZZZZZ	1.0	13:55																								
ZZZZZZ	1.0	13:59																								
ZZZZZZ	1.0	14:03																								
ZZZZZZ	1.0	14:07																								
ZZZZZZ	1.0	14:10																								
ZZZZZZ	1.0	14:14																								
ZZZZZZ	1.0	14:17																								
CCV3	1.0	14:21			X								X		X											

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
ZZZZZZ	1.0	14:30																												
CCB3	1.0	14:34			X								X		X															
LLCCVW1	1.0	14:37			X								X		X															
KQ1608449-01	1.0	14:41			X								X		X															
KQ1608449-02	1.0	14:45			X								X		X															
KQ1608449-03	1.0	14:50			X								X		X															
ZZZZZZ	1.0	14:55																												
K1608011-007L	5.0	14:59			X								X		X															
K1608011-007A	1.0	15:02			X								X		X															
K1608207-015	1.0	15:06			X								X		X															
ZZZZZZ	1.0	15:10																												
ZZZZZZ	1.0	15:14																												
CCV4	1.0	15:17			X								X		X															
ZZZZZZ	1.0	15:27																												
CCB4	1.0	15:30			X								X		X															
ZZZZZZ	1.0	15:34																												
ZZZZZZ	1.0	15:37																												
ZZZZZZ	1.0	15:43																												
ZZZZZZ	1.0	15:49																												
ZZZZZZ	5.0	15:53																												
ZZZZZZ	1.0	15:56																												
ZZZZZZ	1.0	16:00																												
CCV5	1.0	16:04			X								X		X															
CCB5	1.0	16:13			X								X		X															
LLCCVW2	1.0	16:17			X								X		X															

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608207

Project No.: 06261038.0001.00400 **Run Number:** 080516AMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/5/2016 **End Date:** 8/5/2016

Sample No.	D/F	Time	% R	Analytes																									
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Cal. Blk	1.0	05:39																							X	
Cal. Stn	1.0	05:42																							X	
ICV1	1.0	05:44																							X	
CCV1	1.0	05:46																							X	
ICB1	1.0	05:48																							X	
CCB1	1.0	05:57																							X	
LLICVW1	1.0	05:59																							X	
ZZZZZZ	1.0	06:01																								
ICS-A1	1.0	06:05																							X	
ICS-AB1	1.0	06:08																							X	
KQ1609201-01	1.0	06:10																							X	
KQ1609201-02	1.0	06:12																							X	
KQ1609201-03	1.0	06:14																							X	
ZZZZZZ	1.0	06:16																								
K1608011-007L	5.0	06:19																							X	
K1608011-007A	1.0	06:21																							X	
CCV2	1.0	06:23																							X	
CCB2	1.0	06:25																							X	
K1608207-015	1.0	06:28																							X	
ZZZZZZ	1.0	06:30																								
ZZZZZZ	1.0	06:32																								
ZZZZZZ	1.0	06:34																								
ZZZZZZ	1.0	06:37																								
CCV3	1.0	06:39																							X	
CCB3	1.0	06:41																							X	
LLCCVW1	1.0	06:43																							X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608207

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
Cal. Blk	Cal. Blk	1158	100		100		100		100		100		100	
Cal. Stn	Cal. Stn	1205	97		99		100		100		101		102	
ICV1	ICV1	1208	96		99		100		100		100		102	
CCV1	CCV1	1213	103		99		100		100		101		101	
ZZZZZZ	ZZZZZZ	1220												
ICB1	ICB1	1224	107		100		100		101		100		100	
CCB1	CCB1	1228	107		101		100		101		101		100	
LLICVW1	LLICVW1	1232	103		99		99		100		100		100	
ZZZZZZ	ZZZZZZ	1235												
ICS-A1	ICSA	1243	100		95		94		90		92		93	
ICS-AB1	ICSAB	1246	103		97		95		92		95		97	
ZZZZZZ	ZZZZZZ	1250												
ZZZZZZ	ZZZZZZ	1306												
ZZZZZZ	ZZZZZZ	1310												
ZZZZZZ	ZZZZZZ	1314												
ZZZZZZ	ZZZZZZ	1318												
ZZZZZZ	ZZZZZZ	1322												
ZZZZZZ	ZZZZZZ	1325												
ZZZZZZ	ZZZZZZ	1329												
ZZZZZZ	ZZZZZZ	1333												
CCV2	CCV2	1336	95		95		97		99		99		101	
CCB2	CCB2	1344	99		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1348												
ZZZZZZ	ZZZZZZ	1352												
ZZZZZZ	ZZZZZZ	1355												
ZZZZZZ	ZZZZZZ	1359												
ZZZZZZ	ZZZZZZ	1403												
ZZZZZZ	ZZZZZZ	1407												
ZZZZZZ	ZZZZZZ	1410												
ZZZZZZ	ZZZZZZ	1414												
ZZZZZZ	ZZZZZZ	1417												
CCV3	CCV3	1421	102		98		98		98		98		99	
ZZZZZZ	ZZZZZZ	1430												
CCB3	CCB3	1434	104		99		100		101		100		99	
LLCCVW1	LLCCVW1	1437	103		100		99		101		100		99	
KQ1608449-01	Method Blank	1441	103		98		98		98		98		98	
KQ1608449-02	Lab Control	1445	103		99		99		100		99		99	
KQ1608449-03	Duplicate Lab	1450	101		97		98		99		98		99	
ZZZZZZ	ZZZZZZ	1455												
K1608011-007L	Batch QC1L	1459	99		97		97		98		98		99	
K1608011-007A	Batch QC1A	1502	100		96		97		98		98		99	
K1608207-015	EB071816	1506	99		96		96		97		97		98	
ZZZZZZ	ZZZZZZ	1510												
ZZZZZZ	ZZZZZZ	1514												

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608207

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
CCV4	CCV4	1517	98		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1527												
CCB4	CCB4	1530	106		101		101		101		100		99	
ZZZZZZ	ZZZZZZ	1534												
ZZZZZZ	ZZZZZZ	1537												
ZZZZZZ	ZZZZZZ	1543												
ZZZZZZ	ZZZZZZ	1549												
ZZZZZZ	ZZZZZZ	1553												
ZZZZZZ	ZZZZZZ	1556												
ZZZZZZ	ZZZZZZ	1600												
CCV5	CCV5	1604	103		99		99		99		99		100	
CCB5	CCB5	1613	106		102		100		100		99		97	
LLCCVW2	LLCCVW2	1617	107		101		101		101		100		98	

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608207

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/05/2016 End Date: 08/05/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ga_71	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
Cal. Blk	Cal. Blk	0539	100											
Cal. Stn	Cal. Stn	0542	102											
ICV1	ICV1	0544	101											
CCV1	CCV1	0546	101											
ICB1	ICB1	0548	101											
CCB1	CCB1	0557	99											
LLICVW1	LLICVW1	0559	98											
ZZZZZZ	ZZZZZZ	0601												
ICS-A1	ICSA	0605	93											
ICS-AB1	ICSAB	0608	93											
KQ1609201-01	Method Blank	0610	94											
KQ1609201-02	Lab Control	0612	95											
KQ1609201-03	Duplicate Lab	0614	95											
ZZZZZZ	ZZZZZZ	0616												
K1608011-007L	Batch QC1L	0619	95											
K1608011-007A	Batch QC1A	0621	95											
CCV2	CCV2	0623	95											
CCB2	CCB2	0625	95											
K1608207-015	EB071816	0628	94											
ZZZZZZ	ZZZZZZ	0630												
ZZZZZZ	ZZZZZZ	0632												
ZZZZZZ	ZZZZZZ	0634												
ZZZZZZ	ZZZZZZ	0637												
CCV3	CCV3	0639	95											
CCB3	CCB3	0641	95											
LLCCVW1	LLCCVW1	0643	96											

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Benchsheet

Service Request #: K1608207, KQ1609058, K1608211 **Run #:** 507992
Test: TS **Balance ID:** K-Balance-16
Method: 160.3 Modified

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1608207-003	1.31	12.67	13.22	11.9	94.0	
	K1608207-003DUP	1.29	10.01	10.73	9.44	94.3	<1
	K1608207-004	1.32	12.48	12.68	11.4	91.0	
	K1608207-005	1.29	12.97	13.06	11.8	90.7	
	K1608207-006	1.30	10.33	10.59	9.29	89.9	
	K1608207-010	1.29	10.03	11.23	9.94	99.1	
	K1608207-011	1.29	10.45	10.84	9.55	91.4	
	K1608207-012	1.30	14.63	14.58	13.3	90.8	
	K1608207-013	1.33	12.10	13.39	12.1	99.7	
	K1608207-014	1.30	10.44	11.61	10.3	98.8	
	K1608211-001	1.29	10.81	11.78	10.5	97.0	
	K1608211-002	1.30	10.75	11.15	9.85	91.6	
	K1608211-002DUP	1.31	14.39	14.47	13.2	91.5	<1
	K1608211-003	1.28	10.33	10.98	9.70	93.9	
	K1608211-004	1.29	12.01	11.84	10.6	87.8	
	K1608211-005	1.30	12.91	12.79	11.5	89.0	
	K1608211-006	1.28	10.79	8.99	7.71	71.5	

	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
Oven1	K-OVEN 07	105	105	8/1/2016	16:56	8/2/2016	08:05	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	K-Balance-16	1.00, 100.01	1.00, 100.01	8/1/2016	16:39	8/1/2016	16:56
Calibration2	K-Balance-16	1.00, 100.01	1.00, 100.01	8/2/2016	08:50	8/2/2016	08:53

Comments: ZR Reviewed 8-2-16 L.J.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 267971 **Prep Workflow:** MetDigSICP **Status:** Prepped **Prep Date:** 08/05/2016 12:50
Team: Metals **Prep Method:** EPA 3050B **Current Step:** Digestion **Due Date:** 08/06/2016
Analyst: AURBAN **Rush/NPDES:** N/A **Hold Date:** 01/11/2017

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1609274-01	Method Blank		1.00 g	As Received.	100 mL			10% HNO3, 10% HCl
KQ1609274-02	Lab Control Sample		1.01 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608207-003	FTBL-SS-B57-0-6-071816	.01	1.25 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-003: KQ1609274-03	Matrix Spike	.01	1.22 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608207-003: KQ1609274-04	Duplicate Matrix Spike	.01	1.23 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608207-004	FTBL-SS-B58-0-6-071816	.01	1.27 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-005	FTBL-SS-B59-0-6-071816	.01	1.37 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-006	FTBL-SS-B60-0-6-071816	.01	1.24 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-010	FTBL-SS-B51-0-6-071816	.01	1.16 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-011	FTBL-SS-B52-0-6-071816	.01	1.20 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-012	FTBL-SS-B53-0-6-071816	.01	1.35 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-013	FTBL-SS-B54-0-6-071816	.01	1.10 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-014	FD071816	.01	1.19 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-003	FTBL-SS-B27-0-6-071516	.01	1.43 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-004	FTBL-SS-B28-0-6-071516	.01	1.24 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-005	FTBL-SS-B29-0-6-071516	.01	1.31 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-006	FTBL-SS-B30-0-6-071516	.01	1.34 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-010	FTBL-SS-B39-0-6-071516	.01	1.23 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-011	FTBL-SS-B40-0-6-071516	.01	1.22 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-012	FD071516	.01	1.32 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-013	FTBL-SS-B42-0-6-071516	.01	1.33 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-014	FTBL-SS-B41-0-6-071516	.01	1.21 g	As Received.	100 mL			10% HNO3, 10% HCl

22 Total Samples consisting of 18 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET SS1	Spike	174411	7/12/2017	K-MET SS4	Spike	174221	10/14/2016
K-MET SS3	Spike	174614	3/18/2017	K-MET SS5	Spike	174153	1/28/2017

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	Teflon Chips	69101	Digestion	K-MET 100ml Centrifuge Tube	172987
Digestion	K-MET HCL	87502	Digestion	K-MET H2O2	174426
Digestion	K-MET HNO3	87968			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-Balance-02	Date Checked	8/5/16		Digestion	K-BlockDigester-04	Observed Temperature	95.0	deg C
Digestion	K-BlockDigester-04	Corrected Temperature	95.0	deg C	Digestion	K-BlockDigester-04	Thermometer ID 1110287		NONE
Digestion	K-BlockDigester-04	Correction Factor	0.0	deg C	Digestion	K-BlockDigester-04	Thermometer Location	31	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	05-AUG-16 12:50	05-AUG-16 14:57	AURBAN		N	

Comments

First reflux on at 1250 off at 1305. Second reflux on at 1310 off at 1410. HCl reflux on at 1442 off at 1457.

Review

Reviewed by: _____ Date: 8/8/16

Service Request # K1608207
Calibration 082416DMS04
QC in calibration 082416DMS04
QC Service Request # K1608207
STARLIMS run # 511491

CAL STD	MS20-83-G	ICSA STD	MS20-83-H
ICV STD	MS20-72-E	ICSAB STD	MS20-83-I
LLICV STD	MS20-72-F		
Internal STD	MS20-58-A		

6020 DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD limit?	X		
12. Spikes within DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?		X	
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?	X		
21. Cd Correction Applied?		X	
22. Was run prematurely stopped, If so why?		X	

Comments: LRSTD : 1000ppb

Primary Review by (b) (6) Date 8/25/16
Secondary Review by Date 8/26/16

Data Review Form

Service Request #: **K1608207**
Instrument ID#: **K-ICP-MS-04**
DataFile Name: **R:\ICP\WIP\DATA\K-ICP-MS-04 (NexION)\082416d.txt**
RUNNO: **511491**

K1608207-003MS - Metals T
MS Recovery
6020A/Metals T - Sb-KED2 - Recovery: 38 Limits: 72 - 124
K1608207-003DMS - Metals T
DMS Recovery
6020A/Metals T - Sb-KED2 - Recovery: 38 Limits: 72 - 124
6020A/Metals T - Pb-KED2 - Recovery: 83 Limits: 84 - 118

SD, PS, LCSD pass.

Analytical Method 6020A
Primary Approver: (b) (6) 8/25/16
Secondary Approver: 8/26/16

Dataset Report

User Name: ALKLS.ALKLSXP373
Computer Name: ALKLSXP373
Dataset File Path: C:\NexION Data\DataSet\082416D\
Report Date/Time: Thursday, August 25, 2016 11:24:35

The Dataset

Sample ID	Date and Time	Read Type	Description	Batch ID	Samp. File Name
RINSE	17:08:50 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\RINSE.001
Blank	17:11:50 Wed 24-Aug-16	Blank			C:\NexION Data\DataSet\082416D\Blank.002
Standard 1	17:14:49 Wed 24-Aug-16	Standard #1			C:\NexION Data\DataSet\082416D\Standard 1
ICV	17:17:47 Wed 24-Aug-16	QC Std #1			C:\NexION Data\DataSet\082416D\ICV.004
CCV	17:20:47 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.005
ICB	17:23:46 Wed 24-Aug-16	QC Std #3			C:\NexION Data\DataSet\082416D\ICB.006
CCB	17:26:46 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.007
LLICVS	17:29:46 Wed 24-Aug-16	QC Std #5			C:\NexION Data\DataSet\082416D\LLICVS.00
ICSA	17:32:44 Wed 24-Aug-16	QC Std #7			C:\NexION Data\DataSet\082416D\ICSA.009
ICSAB	17:35:43 Wed 24-Aug-16	QC Std #8			C:\NexION Data\DataSet\082416D\ICSAB.010
KQ1609275-03	17:38:44 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
K1608325-001	17:41:43 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-002	17:44:42 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-003	17:47:41 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-004	17:50:40 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-005	17:53:39 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-006	17:56:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-007	17:59:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-008	18:02:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
CCV	18:05:38 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.020
CCB	18:08:37 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.021
K1608325-009	18:11:39 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009L	18:14:38 Wed 24-Aug-16	Sample	25		C:\NexION Data\DataSet\082416D\K1608325-
1000ppb LR	18:17:38 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\1000ppb LI
RINSE	18:20:39 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\RINSE.025
K1608325-009A	18:23:39 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009S	18:26:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009SD	18:29:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
KQ1609275-04	18:32:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
MO STD	18:35:37 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\MO STD.0
K1608325-010	18:38:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
CCV	18:41:38 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.032
CCB	18:44:37 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.033
LLCCVS	18:47:37 Wed 24-Aug-16	QC Std #6			C:\NexION Data\DataSet\082416D\LLCCVS.0
K1608325-011	18:50:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-012	18:53:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-013	18:56:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
KQ1609274-01	18:59:35 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
K1608207-003	19:02:34 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003L	19:05:33 Wed 24-Aug-16	Sample	25		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003A	19:08:32 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003S	19:11:32 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003SD	19:14:31 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
KQ1609274-02	19:17:30 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
CCV	19:20:30 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.045
CCB	19:23:30 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.046
MO STD	19:26:29 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\MO STD.0
K1608207-004	19:29:30 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-005	19:32:29 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-006	19:35:28 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-

K1608207-010	19:38:27 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-011	19:41:26 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-012	19:44:25 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-013	19:47:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-014	19:50:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608210-003	19:53:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
CCV	19:56:24 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.057
CCB	19:59:24 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.058
LLCCVS	20:02:24 Wed 24-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.0
K1608210-004	20:05:25 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-005	20:08:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-006	20:11:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-010	20:14:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-011	20:17:21 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-012	20:20:20 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-013	20:23:19 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-014	20:26:18 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
KQ1609920-03	20:29:17 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160992
K1608344-002	20:32:16 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
CCV	20:35:18 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.070
CCB	20:38:17 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.071
K1608344-003	20:41:19 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-004	20:44:18 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-005	20:47:17 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-008	20:50:16 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-009	20:53:15 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-010	20:56:14 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011	20:59:13 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011L	21:02:12 Wed 24-Aug-16	Sample	25	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011A	21:05:11 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011S	21:08:09 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
CCV	21:11:10 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.082
CCB	21:14:10 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.083
LLCCVS	21:17:09 Wed 24-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.0
K1608344-011SD	21:20:10 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
KQ1609920-04	21:23:09 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160992
MO STD	21:26:10 Wed 24-Aug-16	Sample		C:\NexIONData\DataSet\082416D\MO STD.0
K1608344-012	21:29:11 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
KQ1609300-03	21:32:10 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160930
K1608209-004	21:35:09 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-005	21:38:10 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-006	21:41:08 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-007	21:44:08 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010	21:47:07 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
CCV	21:50:07 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.095
CCV	21:52:26 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.096
CCB	21:55:25 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.097
K1608209-010L	21:58:26 Wed 24-Aug-16	Sample	25	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010A	22:01:25 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010S	22:04:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010SD	22:07:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
KQ1609300-04	22:10:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160930
MO STD	22:13:24 Wed 24-Aug-16	Sample		C:\NexIONData\DataSet\082416D\MO STD.1
K1608209-011	22:16:25 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-012	22:19:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-013	22:22:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-014	22:25:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
CCV	22:28:23 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.108
CCB	22:31:22 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.109
LLCCVS	22:34:22 Wed 24-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.1

K1608209-005	09:25:53 Thu 25-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
CCV	09:28:54 Thu 25-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.112
CCB	09:31:53 Thu 25-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.113
LLCCVS	09:34:53 Thu 25-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.1
LLCCVS	09:37:11 Thu 25-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.1
LLCCVS	09:45:34 Thu 25-Aug-16	Sample		C:\NexIONData\DataSet\082416D\LLCCVS.1

SmartTune Wizard - Details

)ptimization Details

;martTune file: C:\NexIONData\Wizard\SmartTune\CAS SmartTune Full FAST.swz

)ptimization Status

;tart Time: 8/24/2016 10:24:21 AM

lass Calibration and Resolution
Optimization Settings:
Method: C:\NexIONData\Method\CAS Tuning.mth.
MassCal File: C:\NexIONData\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.1 for Mass Cal. and 0.1 for Resolution
Peak height (%) for Res. Opt.: 5

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.704)
Target/Obtained mass (9.0122/9.075), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.700)
Target/Obtained mass (58.9332/58.925), Target/Obtained resolution (0.7/0.692)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.684)
Target/Obtained mass (139.905/139.925), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (207.977/207.975), Target/Obtained resolution (0.7/0.695)
Target/Obtained mass (208.98/208.975), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.694)
Passed] Optimum value(s): N/A

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Wednesday, August 24, 2016 10:28:39
Sample Description:
Method File: C:\NexION\Data\Method\CAS Daily Performance.mth
Dataset File: C:\NexION\Data\Dataset\Default\Daily Performance Check.3538
MassCal File: C:\NexION\Data\MassCal\Default.tun
Conditions File: C:\NexION\Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Li	7.0	28977.1	28977.093	224.933	0.8	Standard
	Be	9.0	9171.5	9171.478	210.427	2.3	Standard
	Mg	24.0	27457.0	27457.035	520.912	1.9	Standard
	Co	58.9	29211.7	29211.711	545.363	1.9	Standard
	In	114.9	62607.9	62607.857	1090.759	1.7	Standard
	Pb	208.0	46834.1	46834.063	274.246	0.6	Standard
	Bi	209.0	37192.9	37192.893	507.538	1.4	Standard
	U	238.1	43013.5	43013.464	453.345	1.1	Standard
⌈	CeO	155.9	779.9	0.017	0.001	4.1	Standard
|>	Ce	139.9	45218.5	45218.523	413.726	0.9	Standard
⌊	Ce++	70.0	932.4	0.021	0.001	3.8	Standard
	Bkgd	220.0	0.0	0.000	0.000		Standard

Replicates

Repeat 1

Analyte	Mass	Meas. Intensity
Li	7	29031.469
Be	9	9361.733
Mg	24	27615.332
Co	59	28951.975
In	115	64276.276
Pb	208	47208.808
Bi	209	37692.994
U	238	42650.238
CeO	156	777.354
Ce	140	44997.422
Ce++	70	927.363
Bkgd	220	0.000

Repeat 2

Analyte	Mass	Meas. Intensity
Li	7	29141.025
Be	9	9108.236
Mg	24	26532.616
Co	59	28640.681
In	115	61917.224
Pb	208	46594.984
Bi	209	37748.474
U	238	42578.023
CeO	156	757.353
Ce	140	44627.598
Ce++	70	934.031
Bkgd	220	0.000

Repeat 3

Analyte	Mass	Meas. Intensity
Li	7	29227.201
Be	9	9417.770
Mg	24	27790.338
Co	59	30092.328
In	115	62519.840

Pb	208	47038.174
Bi	209	37085.407
U	238	43216.603
CeO	156	839.358
Ce	140	45696.302
Ce++	70	991.368
Bkgd	220	0.000

Repeat 4

Analyte	Mass	Meas. Intensity
Li	7	28730.862
Be	9	8927.455
Mg	24	27696.155
Co	59	29285.320
In	115	62902.849
Pb	208	46708.146
Bi	209	36791.315
U	238	42935.758
CeO	156	778.688
Ce	140	45420.759
Ce++	70	920.696
Bkgd	220	0.000

Repeat 5

Analyte	Mass	Meas. Intensity
Li	7	28754.910
Be	9	9042.194
Mg	24	27650.734
Co	59	29088.251
In	115	61423.098
Pb	208	46620.206
Bi	209	36646.276
U	238	43686.696
CeO	156	746.686
Ce	140	45350.536
Ce++	70	888.694
Bkgd	220	0.000

Current Conditions File Data

Current Value	Description
0.87	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
16.00	Plasma Gas Flow
-9.50	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-14.50	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.87	DRC Mode NEB
-6.50	DRC Mode QRO
-1.50	DRC Mode CRO
-10.00	DRC Mode Cell Entrance/Exit Voltage
3.50	Cell Gas A
0.00	Cell Gas B
280.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-40.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

LABWORKS - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, August 24, 2016 17:11:50
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\Blank.002
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.0	32.8			ppb
|	Cu-KED3	65	13.0	35.3			ppb
|	Zn-KED3	66	7.3	41.7			ppb
⌊>	Ge-KED3	72	13511.1	1.9			ppb
⌈>	In-KED2	115	14199.0	2.3			ppb
|	Sb-KED2	121	42.7	39.0			ppb
⌊	Sb-KED2	123	27.6	18.6			ppb
⌈>	Lu-KED2	175	53932.4	3.5			ppb
⌊	Pb-KED2	208	22.0	9.1			ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, August 24, 2016 17:14:49
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\Standard 1.003
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16807.2	1.4	25.00000	1.4	ppb
|	Cu-KED3	65	8560.9	2.8	25.00000	1.3	ppb
|	Zn-KED3	66	1556.4	4.3	25.00000	4.6	ppb
⌊>	Ge-KED3	72	13608.8	2.5			ppb
⌈>	In-KED2	115	14381.4	0.7			ppb
|	Sb-KED2	121	9195.6	3.3	25.00000	4.0	ppb
⌊	Sb-KED2	123	7378.3	0.3	25.00000	1.0	ppb
⌈>	Lu-KED2	175	55017.8	3.0			ppb
⌊	Pb-KED2	208	137772.3	1.9	25.00000	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICV
Sample Date/Time: Wednesday, August 24, 2016 17:17:47
Sample Description:
Autosampler Position: 3
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICV.004
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8589.9	2.5	12.78956	2.9	ppb
|	Cu-KED3	65	4412.3	1.1	12.89705	1.0	ppb
|	Zn-KED3	66	1572.1	2.8	25.30139	1.6	ppb
⌊>	Ge-KED3	72	13577.8	1.6			ppb
⌈>	In-KED2	115	14638.3	3.0			ppb
|	Sb-KED2	121	9479.1	1.7	25.33934	4.7	ppb
⌊	Sb-KED2	123	7544.5	1.2	25.12285	1.8	ppb
⌈>	Lu-KED2	175	54101.6	1.2			ppb
⌊	Pb-KED2	208	139481.6	0.5	25.72290	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	102				
|	Cu-KED3	65	103				
|	Zn-KED3	66	101				
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		103			
|	Sb-KED2	121	101				
⌊	Sb-KED2	123	100				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	103				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 17:20:47
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.005
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16960.7	2.6	25.10516	2.6	ppb
|	Cu-KED3	65	8668.6	3.4	25.19456	3.0	ppb
|	Zn-KED3	66	1512.7	4.2	24.17422	4.2	ppb
⌊>	Ge-KED3	72	13673.2	1.1			ppb
⌈>	In-KED2	115	14452.9	1.7			ppb
|	Sb-KED2	121	9229.0	3.9	24.96286	3.6	ppb
⌊	Sb-KED2	123	7304.6	1.4	24.63300	2.9	ppb
⌈>	Lu-KED2	175	54586.1	1.1			ppb
⌊	Pb-KED2	208	137297.6	2.0	25.09856	3.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	101				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICB
Sample Date/Time: Wednesday, August 24, 2016 17:23:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICB.006
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.0	32.8	-0.00014	8386.3	ppb
|	Cu-KED3	65	12.7	19.9	-0.00121	643.5	ppb
|	Zn-KED3	66	6.0	72.6	-0.02350	286.9	ppb
⌊>	Ge-KED3	72	13625.8	2.5			ppb
⌈>	In-KED2	115	14461.3	1.6			ppb
|	Sb-KED2	121	38.7	29.4	-0.01291	243.6	ppb
⌊	Sb-KED2	123	38.0	9.9	0.03369	39.4	ppb
⌈>	Lu-KED2	175	53483.9	1.0			ppb
⌊	Pb-KED2	208	13.3	37.7	-0.00159	57.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 17:26:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.007
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.7	36.7	0.00125	970.9	ppb
|	Cu-KED3	65	8.7	52.0	-0.01257	105.8	ppb
|	Zn-KED3	66	4.7	32.7	-0.04239	60.3	ppb
⌊>	Ge-KED3	72	13371.3	1.4			ppb
⌈>	In-KED2	115	14142.7	2.4			ppb
|	Sb-KED2	121	31.3	14.7	-0.03076	48.0	ppb
⌊	Sb-KED2	123	30.5	29.5	0.01001	280.9	ppb
⌈>	Lu-KED2	175	53810.6	4.7			ppb
⌊	Pb-KED2	208	16.0	21.7	-0.00111	53.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLICVS
Sample Date/Time: Wednesday, August 24, 2016 17:29:46
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLICVS.008
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	153.3	19.6	0.19913	22.3	ppb
|	Cu-KED3	65	72.7	7.6	0.17827	13.1	ppb
|	Zn-KED3	66	67.7	6.0	0.99191	8.4	ppb
⌊>	Ge-KED3	72	13385.6	3.2			ppb
⌈>	In-KED2	115	14481.7	1.7			ppb
|	Sb-KED2	121	89.3	14.9	0.12403	27.2	ppb
⌊	Sb-KED2	123	59.0	10.8	0.10449	21.7	ppb
⌈>	Lu-KED2	175	54129.1	2.2			ppb
⌊	Pb-KED2	208	576.7	2.9	0.10230	4.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	89				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	124				
⌊	Sb-KED2	123	104				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: ICSA
Sample Date/Time: Wednesday, August 24, 2016 17:32:44
Sample Description:
Autosampler Position: 5
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICSA.009
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	332.7	3.7	0.55414	6.0	ppb
|	Cu-KED3	65	186.7	3.6	0.60816	1.7	ppb
|	Zn-KED3	66	16.3	24.7	0.19385	42.6	ppb
⌊>	Ge-KED3	72	11490.6	2.0			ppb
⌈>	In-KED2	115	12531.7	2.8			ppb
|	Sb-KED2	121	46.0	7.5	0.02611	35.9	ppb
⌊	Sb-KED2	123	35.0	19.6	0.04193	71.1	ppb
⌈>	Lu-KED2	175	50920.0	2.5			ppb
⌊	Pb-KED2	208	400.7	3.0	0.07445	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICSAB
Sample Date/Time: Wednesday, August 24, 2016 17:35:43
Sample Description:
Autosampler Position: 6
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICSAB.010
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26192.0	1.0	45.28134	1.4	ppb
|	Cu-KED3	65	13434.6	2.3	45.61223	2.5	ppb
|	Zn-KED3	66	1162.0	0.9	21.66620	2.3	ppb
⌊>	Ge-KED3	72	11715.5	2.2			ppb
⌈>	In-KED2	115	12651.5	2.6			ppb
|	Sb-KED2	121	45.3	28.7	0.02319	181.7	ppb
⌊	Sb-KED2	123	35.1	10.2	0.04096	38.2	ppb
⌈>	Lu-KED2	175	50557.3	1.4			ppb
⌊	Pb-KED2	208	394.7	8.2	0.07378	7.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	91				
|	Cu-KED3	65	91				
|	Zn-KED3	66	87				
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-03
Sample Date/Time: Wednesday, August 24, 2016 17:38:44
Sample Description: 5
Autosampler Position: 301
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-03.011
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	61.3	30.3	0.06850	47.1	ppb
|	Cu-KED3	65	33.3	27.9	0.06992	44.8	ppb
|	Zn-KED3	66	47.3	19.2	0.72670	23.0	ppb
⌊>	Ge-KED3	72	12296.0	2.1			ppb
⌈>	In-KED2	115	13169.9	3.8			ppb
|	Sb-KED2	121	16.0	21.7	-0.07051	11.9	ppb
⌊	Sb-KED2	123	13.2	33.6	-0.04629	31.7	ppb
⌈>	Lu-KED2	175	50708.9	4.0			ppb
⌊	Pb-KED2	208	412.7	13.3	0.07694	9.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		93			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-001
Sample Date/Time: Wednesday, August 24, 2016 17:41:43
Sample Description: 5
Autosampler Position: 302
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-001.012
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13757.3	1.6	22.92116	4.4	ppb
|	Cu-KED3	65	7001.0	2.0	22.89886	3.7	ppb
|	Zn-KED3	66	7941.5	1.0	143.43907	4.0	ppb
⌊>	Ge-KED3	72	12156.5	3.2			ppb
⌈>	In-KED2	115	12735.7	1.5			ppb
|	Sb-KED2	121	143.3	12.0	0.32411	16.8	ppb
⌊	Sb-KED2	123	123.1	12.3	0.37762	15.2	ppb
⌈>	Lu-KED2	175	52570.6	3.6			ppb
⌊	Pb-KED2	208	339169.4	1.9	64.43031	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		90			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-002
Sample Date/Time: Wednesday, August 24, 2016 17:44:42
Sample Description: 5
Autosampler Position: 303
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-002.013
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13016.6	2.5	22.77098	5.3	ppb
|	Cu-KED3	65	6751.9	2.3	23.18430	3.7	ppb
|	Zn-KED3	66	5180.9	1.5	98.20744	4.2	ppb
⌊>	Ge-KED3	72	11578.4	2.8			ppb
⌈>	In-KED2	115	12674.1	2.3			ppb
|	Sb-KED2	121	264.7	9.6	0.70356	13.8	ppb
⌊	Sb-KED2	123	222.5	8.1	0.76279	6.9	ppb
⌈>	Lu-KED2	175	52425.4	0.8			ppb
⌊	Pb-KED2	208	988623.6	1.3	188.16684	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-003
Sample Date/Time: Wednesday, August 24, 2016 17:47:41
Sample Description: 5
Autosampler Position: 304
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-003.014
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	37074.1	1.7	63.83479	2.0	ppb
|	Cu-KED3	65	19023.0	0.7	64.32801	1.5	ppb
|	Zn-KED3	66	6079.6	2.6	113.34517	2.0	ppb
⌊>	Ge-KED3	72	11764.5	1.3			ppb
⌈>	In-KED2	115	12862.4	0.8			ppb
|	Sb-KED2	121	206.7	5.0	0.51311	6.3	ppb
⌊	Sb-KED2	123	150.0	7.7	0.47561	10.0	ppb
⌈>	Lu-KED2	175	52008.2	3.0			ppb
⌊	Pb-KED2	208	662759.4	0.8	127.20702	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-004
Sample Date/Time: Wednesday, August 24, 2016 17:50:40
Sample Description: 5
Autosampler Position: 305
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-004.015
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20673.6	2.3	37.60755	5.4	ppb
|	Cu-KED3	65	10600.9	1.0	37.86567	4.6	ppb
|	Zn-KED3	66	5676.8	0.6	111.84245	4.2	ppb
⌊>	Ge-KED3	72	11144.0	3.6			ppb
⌈>	In-KED2	115	12459.0	3.1			ppb
|	Sb-KED2	121	181.3	5.7	0.45406	8.6	ppb
⌊	Sb-KED2	123	157.3	8.5	0.52186	6.6	ppb
⌈>	Lu-KED2	175	51653.5	0.3			ppb
⌊	Pb-KED2	208	614372.4	0.8	118.67650	0.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		82			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-005
Sample Date/Time: Wednesday, August 24, 2016 17:53:39
Sample Description: 5
Autosampler Position: 306
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-005.016
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	21096.9	0.7	37.17840	0.7	ppb
	Cu-KED3	65	10701.0	2.6	37.03459	2.8	ppb
	Zn-KED3	66	7196.1	0.3	137.40686	0.4	ppb
>	Ge-KED3	72	11489.3	0.6			ppb
>	In-KED2	115	12782.4	3.8			ppb
	Sb-KED2	121	136.7	20.7	0.30233	29.4	ppb
	Sb-KED2	123	102.7	15.2	0.29951	24.1	ppb
>	Lu-KED2	175	51442.2	2.3			ppb
	Pb-KED2	208	314204.3	1.1	60.96955	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		85			
>	In-KED2	115		90			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		95			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-006
Sample Date/Time: Wednesday, August 24, 2016 17:56:38
Sample Description: 5
Autosampler Position: 307
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-006.017
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21272.5	2.5	37.41008	2.6	ppb
|	Cu-KED3	65	10863.5	1.7	37.52093	2.4	ppb
|	Zn-KED3	66	5860.9	1.4	111.65831	1.7	ppb
⌊>	Ge-KED3	72	11513.3	0.7			ppb
⌈>	In-KED2	115	12420.1	1.0			ppb
|	Sb-KED2	121	197.3	6.1	0.50611	7.9	ppb
⌊	Sb-KED2	123	148.1	12.3	0.48789	13.4	ppb
⌈>	Lu-KED2	175	51833.9	2.3			ppb
⌊	Pb-KED2	208	724076.6	0.8	139.41677	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		87			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-007
Sample Date/Time: Wednesday, August 24, 2016 17:59:37
Sample Description: 5
Autosampler Position: 308
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-007.018
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10852.1	1.5	16.07406	2.7	ppb
|	Cu-KED3	65	5567.8	2.2	16.20625	6.0	ppb
|	Zn-KED3	66	4650.8	3.2	74.63535	0.6	ppb
⌊>	Ge-KED3	72	13662.2	3.7			ppb
⌈>	In-KED2	115	14062.1	1.1			ppb
|	Sb-KED2	121	264.7	5.7	0.62158	8.1	ppb
⌊	Sb-KED2	123	210.7	11.9	0.63777	13.3	ppb
⌈>	Lu-KED2	175	57306.8	2.3			ppb
⌊	Pb-KED2	208	539086.9	1.0	93.89746	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-008
Sample Date/Time: Wednesday, August 24, 2016 18:02:36
Sample Description: 5
Autosampler Position: 309
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-008.019
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17839.1	2.7	26.20102	3.2	ppb
|	Cu-KED3	65	9274.7	1.9	26.74852	2.2	ppb
|	Zn-KED3	66	4843.8	1.3	77.07091	2.9	ppb
⌊>	Ge-KED3	72	13783.3	2.0			ppb
⌈>	In-KED2	115	14057.2	1.9			ppb
|	Sb-KED2	121	582.0	0.7	1.50842	1.5	ppb
⌊	Sb-KED2	123	444.3	6.2	1.45116	6.6	ppb
⌈>	Lu-KED2	175	58223.4	2.2			ppb
⌊	Pb-KED2	208	1459810.9	2.2	250.17360	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:05:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.020
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17135.6	1.7	24.98285	3.5	ppb
|	Cu-KED3	65	8893.8	2.2	25.46074	3.4	ppb
|	Zn-KED3	66	1576.1	3.8	24.84199	7.9	ppb
⌊>	Ge-KED3	72	13893.1	4.0			ppb
⌈>	In-KED2	115	14877.2	4.0			ppb
|	Sb-KED2	121	9245.7	0.8	24.31655	4.1	ppb
⌊	Sb-KED2	123	7555.7	3.9	24.78177	6.6	ppb
⌈>	Lu-KED2	175	55457.5	2.6			ppb
⌊	Pb-KED2	208	137693.1	1.3	24.78655	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	102				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121	97				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:08:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.021
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14.0	0.0	-0.01249	3.0	ppb
|	Cu-KED3	65	11.0	48.1	-0.00683	212.3	ppb
|	Zn-KED3	66	3.0	88.2	-0.07146	59.4	ppb
⌊>	Ge-KED3	72	13835.4	1.9			ppb
⌈>	In-KED2	115	14472.1	1.4			ppb
|	Sb-KED2	121	31.3	32.1	-0.03275	86.5	ppb
⌊	Sb-KED2	123	34.1	27.5	0.02006	150.2	ppb
⌈>	Lu-KED2	175	54671.8	1.2			ppb
⌊	Pb-KED2	208	36.7	69.5	0.00259	175.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009
Sample Date/Time: Wednesday, August 24, 2016 18:11:39
Sample Description: 5
Autosampler Position: 310
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009.022
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11933.7	1.9	20.14639	2.4	ppb
|	Cu-KED3	65	6132.0	2.8	20.32837	3.5	ppb
|	Zn-KED3	66	5327.7	2.3	97.49563	2.9	ppb
⌊>	Ge-KED3	72	11985.4	0.7			ppb
⌈>	In-KED2	115	13108.1	2.8			ppb
|	Sb-KED2	121	118.7	10.8	0.23844	20.1	ppb
⌊	Sb-KED2	123	103.7	10.5	0.29124	10.1	ppb
⌈>	Lu-KED2	175	54162.2	0.8			ppb
⌊	Pb-KED2	208	274508.7	0.6	50.56962	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		89			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009L
Sample Date/Time: Wednesday, August 24, 2016 18:14:38
Sample Description: 25
Autosampler Position: 311
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009L.023
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2746.3	2.8	4.29828	2.7	ppb
|	Cu-KED3	65	1408.7	5.7	4.32558	5.8	ppb
|	Zn-KED3	66	1215.1	2.8	20.64461	2.8	ppb
⌊>	Ge-KED3	72	12848.8	0.3			ppb
⌈>	In-KED2	115	13843.8	3.1			ppb
|	Sb-KED2	121	55.3	47.2	0.03917	187.1	ppb
⌊	Sb-KED2	123	37.4	10.2	0.03755	47.4	ppb
⌈>	Lu-KED2	175	53517.1	2.7			ppb
⌊	Pb-KED2	208	59031.8	1.1	11.00953	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: 1000ppb LR
Sample Date/Time: Wednesday, August 24, 2016 18:17:38
Sample Description:
Autosampler Position: 124
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\1000ppb LR.024
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	648384.3	0.2	985.81018	2.0	ppb
|	Cu-KED3	65	330737.8	0.4	987.68136	2.3	ppb
|	Zn-KED3	66	59287.1	1.0	976.46035	1.1	ppb
⌊>	Ge-KED3	72	13331.6	1.9			ppb
⌈>	In-KED2	115	13975.8	2.9			ppb
|	Sb-KED2	121	353649.3	1.6	994.41063	3.8	ppb
⌊	Sb-KED2	123	282852.1	1.0	990.18826	2.0	ppb
⌈>	Lu-KED2	175	53911.2	1.8			ppb
⌊	Pb-KED2	208	5431439.9	0.6	1005.54435	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: RINSE
Sample Date/Time: Wednesday, August 24, 2016 18:20:39
Sample Description:
Autosampler Position: 123
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\RINSE.025
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	41.3	14.8	0.02882	30.6	ppb
	Cu-KED3	65	25.7	12.5	0.03717	26.2	ppb
	Zn-KED3	66	5.3	21.7	-0.03280	55.1	ppb
>	Ge-KED3	72	13542.1	0.9			ppb
>	In-KED2	115	14338.2	1.5			ppb
	Sb-KED2	121	232.7	13.2	0.51860	14.5	ppb
	Sb-KED2	123	187.3	5.5	0.54366	4.9	ppb
>	Lu-KED2	175	53342.4	1.0			ppb
	Pb-KED2	208	95.3	7.9	0.01376	9.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		100			
>	In-KED2	115		101			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		99			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009A
Sample Date/Time: Wednesday, August 24, 2016 18:23:39
Sample Description: 5 +50ppb
Autosampler Position: 312
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009A.026
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	40409.1	1.7	67.01339	5.5	ppb
|	Cu-KED3	65	20276.0	1.2	66.04478	5.7	ppb
|	Zn-KED3	66	7901.2	2.8	142.01360	7.4	ppb
⌊>	Ge-KED3	72	12234.2	4.8			ppb
⌈>	In-KED2	115	12949.2	2.6			ppb
|	Sb-KED2	121	16770.5	0.7	50.76768	2.2	ppb
⌊	Sb-KED2	123	13440.7	1.8	50.68347	1.6	ppb
⌈>	Lu-KED2	175	54912.7	1.7			ppb
⌊	Pb-KED2	208	519477.1	0.7	94.41346	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		102			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009S
Sample Date/Time: Wednesday, August 24, 2016 18:26:38
Sample Description: 5
Autosampler Position: 313
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009S.027
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	65584.9	0.8	112.13773	1.2	ppb
|	Cu-KED3	65	33389.6	1.2	112.11907	1.1	ppb
|	Zn-KED3	66	15616.9	0.7	289.28340	1.3	ppb
⌊>	Ge-KED3	72	11849.2	0.7			ppb
⌈>	In-KED2	115	12960.3	0.8			ppb
|	Sb-KED2	121	33177.2	1.3	100.42942	1.5	ppb
⌊	Sb-KED2	123	26765.4	1.7	100.92564	2.2	ppb
⌈>	Lu-KED2	175	54560.4	2.0			ppb
⌊	Pb-KED2	208	1229425.3	0.7	224.90150	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		88			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009SD
Sample Date/Time: Wednesday, August 24, 2016 18:29:37
Sample Description: 5
Autosampler Position: 314
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009SD.028
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66172.2	0.2	114.45741	2.3	ppb
|	Cu-KED3	65	34069.6	1.1	115.75200	3.2	ppb
|	Zn-KED3	66	15807.7	1.2	296.24495	3.0	ppb
⌊>	Ge-KED3	72	11716.5	2.2			ppb
⌈>	In-KED2	115	12999.1	3.3			ppb
|	Sb-KED2	121	33638.9	0.9	101.57730	2.6	ppb
⌊	Sb-KED2	123	26790.3	2.4	100.72949	1.1	ppb
⌈>	Lu-KED2	175	55716.5	2.2			ppb
⌊	Pb-KED2	208	1258981.6	0.6	225.53414	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-04
Sample Date/Time: Wednesday, August 24, 2016 18:32:36
Sample Description: 5
Autosampler Position: 315
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-04.029
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	61075.7	3.3	100.43228	6.8	ppb
|	Cu-KED3	65	31670.8	3.0	102.28434	6.7	ppb
|	Zn-KED3	66	11449.9	3.2	203.96576	6.8	ppb
⌊>	Ge-KED3	72	12340.3	3.9			ppb
⌈>	In-KED2	115	13527.4	3.5			ppb
|	Sb-KED2	121	69023.1	2.8	200.40854	3.7	ppb
⌊	Sb-KED2	123	55565.4	2.6	200.86105	1.2	ppb
⌈>	Lu-KED2	175	52621.8	2.6			ppb
⌊	Pb-KED2	208	1037460.7	1.3	196.79045	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		95			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 18:35:37
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.030
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27.3	40.3	0.00900	195.2	ppb
|	Cu-KED3	65	18.3	50.7	0.01675	165.5	ppb
|	Zn-KED3	66	9.3	37.6	0.03604	167.3	ppb
⌊>	Ge-KED3	72	13239.1	1.4			ppb
⌈>	In-KED2	115	13908.3	1.9			ppb
|	Sb-KED2	121	70.0	37.5	0.07925	90.3	ppb
⌊	Sb-KED2	123	51.9	7.0	0.08756	17.6	ppb
⌈>	Lu-KED2	175	53323.3	1.0			ppb
⌊	Pb-KED2	208	81.3	56.2	0.01120	77.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-010
Sample Date/Time: Wednesday, August 24, 2016 18:38:37
Sample Description: 5
Autosampler Position: 316
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-010.031
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	9698.0	0.8	16.79328	2.3	ppb
|	Cu-KED3	65	5084.2	2.2	17.28809	3.3	ppb
|	Zn-KED3	66	5760.2	1.9	108.18915	3.8	ppb
⌊>	Ge-KED3	72	11685.1	3.0			ppb
⌈>	In-KED2	115	12868.9	1.0			ppb
|	Sb-KED2	121	107.3	11.4	0.20975	18.7	ppb
⌊	Sb-KED2	123	81.4	15.7	0.21414	21.2	ppb
⌈>	Lu-KED2	175	53831.3	2.1			ppb
⌊	Pb-KED2	208	185656.8	1.2	34.42119	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:41:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.032
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16089.7	1.1	24.71959	0.9	ppb
|	Cu-KED3	65	8286.4	2.4	24.99570	1.0	ppb
|	Zn-KED3	66	1495.7	1.2	24.81916	3.0	ppb
⌊>	Ge-KED3	72	13174.1	1.9			ppb
⌈>	In-KED2	115	13475.5	1.6			ppb
|	Sb-KED2	121	8777.4	1.5	25.47231	2.9	ppb
⌊	Sb-KED2	123	7030.6	1.5	25.43173	3.0	ppb
⌈>	Lu-KED2	175	50414.2	1.9			ppb
⌊	Pb-KED2	208	132601.6	0.6	26.24905	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	100				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		95			
|	Sb-KED2	121	102				
⌊	Sb-KED2	123	102				
⌈>	Lu-KED2	175		93			
⌊	Pb-KED2	208	105				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:44:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.033
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	19.3	6.0	-0.00325	55.2	ppb
|	Cu-KED3	65	9.7	11.9	-0.00910	36.4	ppb
|	Zn-KED3	66	4.7	32.7	-0.04127	62.9	ppb
⌊>	Ge-KED3	72	13171.7	0.7			ppb
⌈>	In-KED2	115	14028.9	2.1			ppb
|	Sb-KED2	121	46.0	45.4	0.01047	547.5	ppb
⌊	Sb-KED2	123	41.2	15.7	0.04839	41.0	ppb
⌈>	Lu-KED2	175	54678.5	2.9			ppb
⌊	Pb-KED2	208	18.0	29.4	-0.00079	120.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 18:47:37
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.034
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	164.7	11.5	0.21089	14.6	ppb
|	Cu-KED3	65	78.7	7.4	0.19056	11.0	ppb
|	Zn-KED3	66	60.3	5.8	0.84822	6.9	ppb
⌊>	Ge-KED3	72	13696.6	1.9			ppb
⌈>	In-KED2	115	14455.7	2.5			ppb
|	Sb-KED2	121	103.3	19.0	0.16216	29.2	ppb
⌊	Sb-KED2	123	66.2	14.5	0.12906	23.9	ppb
⌈>	Lu-KED2	175	55465.8	1.9			ppb
⌊	Pb-KED2	208	621.3	2.9	0.10770	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	105				
|	Cu-KED3	65	95				
|	Zn-KED3	66	85				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	162				
⌊	Sb-KED2	123	129				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	108				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: K1608325-011
Sample Date/Time: Wednesday, August 24, 2016 18:50:38
Sample Description: 5
Autosampler Position: 317
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-011.035
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	54822.3	1.3	80.74822	1.8	ppb
	Cu-KED3	65	27637.7	1.5	79.94694	1.9	ppb
	Zn-KED3	66	7522.6	2.1	119.98855	2.7	ppb
>	Ge-KED3	72	13754.3	1.3			ppb
>	In-KED2	115	14517.5	4.1			ppb
	Sb-KED2	121	3769.8	1.0	10.09079	3.6	ppb
	Sb-KED2	123	3063.5	1.3	10.23489	3.1	ppb
>	Lu-KED2	175	59191.7	1.9			ppb
	~~Pb-KED2~~	~~208~~	~~17281705.6~~	1.8	~~2914.29614~~	~~3.2~~	~~ppb~~

Over Linear Range

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		102			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		110			
	Pb-KED2	208					

JS 8/25/16

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-012
Sample Date/Time: Wednesday, August 24, 2016 18:53:37
Sample Description: 5
Autosampler Position: 318
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-012.036
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22589.2	2.2	33.48770	1.4	ppb
|	Cu-KED3	65	11756.8	1.0	34.22973	0.6	ppb
|	Zn-KED3	66	5648.8	0.7	90.71860	1.7	ppb
⌊>	Ge-KED3	72	13655.9	1.4			ppb
⌈>	In-KED2	115	14287.6	2.4			ppb
|	Sb-KED2	121	338.7	9.0	0.81325	10.6	ppb
⌊	Sb-KED2	123	261.4	2.7	0.80057	5.4	ppb
⌈>	Lu-KED2	175	58186.6	0.4			ppb
⌊	Pb-KED2	208	924924.8	1.8	158.60167	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-013
Sample Date/Time: Wednesday, August 24, 2016 18:56:36
Sample Description: 5
Autosampler Position: 319
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-013.037
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41003.4	2.0	59.51113	1.9	ppb
|	Cu-KED3	65	21144.6	1.7	60.26971	1.7	ppb
|	Zn-KED3	66	7660.1	1.9	120.40587	1.9	ppb
⌊>	Ge-KED3	72	13954.8	0.0			ppb
⌈>	In-KED2	115	14325.4	2.8			ppb
|	Sb-KED2	121	409.3	3.7	1.00495	5.5	ppb
⌊	Sb-KED2	123	319.9	4.4	0.99729	3.8	ppb
⌈>	Lu-KED2	175	57653.5	3.8			ppb
⌊	Pb-KED2	208	2271766.3	1.6	393.66609	5.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-01
Sample Date/Time: Wednesday, August 24, 2016 18:59:35
Sample Description: 5
Autosampler Position: 320
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609274-01.038
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43.3	57.7	0.03308	122.6	ppb
|	Cu-KED3	65	15.0	52.9	0.00665	382.5	ppb
|	Zn-KED3	66	30.3	33.3	0.37974	48.8	ppb
⌊>	Ge-KED3	72	13463.3	3.6			ppb
⌈>	In-KED2	115	14766.0	0.5			ppb
|	Sb-KED2	121	20.0	30.0	-0.06477	25.0	ppb
⌊	Sb-KED2	123	12.7	16.2	-0.05278	13.0	ppb
⌈>	Lu-KED2	175	55555.5	1.6			ppb
⌊	Pb-KED2	208	311.3	19.9	0.05187	21.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003
Sample Date/Time: Wednesday, August 24, 2016 19:02:34
Sample Description: 5
Autosampler Position: 321
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003.039
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28814.4	2.1	41.50209	1.6	ppb
|	Cu-KED3	65	14819.0	0.3	41.93087	3.0	ppb
|	Zn-KED3	66	8934.1	0.9	139.47166	3.3	ppb
⌊>	Ge-KED3	72	14061.6	2.9			ppb
⌈>	In-KED2	115	14689.3	1.3			ppb
|	Sb-KED2	121	205.3	11.9	0.43063	13.9	ppb
⌊	Sb-KED2	123	164.6	6.4	0.45335	9.3	ppb
⌈>	Lu-KED2	175	57238.9	3.8			ppb
⌊	Pb-KED2	208	433908.8	2.3	75.73415	5.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003L
Sample Date/Time: Wednesday, August 24, 2016 19:05:33
Sample Description: 25
Autosampler Position: 322
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003L.040
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	6288.1	2.0	8.76190	3.4	ppb
|	Cu-KED3	65	3266.0	1.3	8.93159	1.4	ppb
|	Zn-KED3	66	1912.1	1.8	28.85805	3.3	ppb
⌊>	Ge-KED3	72	14494.7	2.2			ppb
⌈>	In-KED2	115	15519.0	0.6			ppb
|	Sb-KED2	121	60.0	10.0	0.03384	45.2	ppb
⌊	Sb-KED2	123	60.4	10.9	0.09519	20.6	ppb
⌈>	Lu-KED2	175	57681.9	1.8			ppb
⌊	Pb-KED2	208	91301.6	0.9	15.79201	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003A
Sample Date/Time: Wednesday, August 24, 2016 19:08:32
Sample Description: 5 +50ppb
Autosampler Position: 323
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003A.041
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	62226.6	0.4	89.95883	2.0	ppb
|	Cu-KED3	65	32106.4	1.7	91.14252	1.3	ppb
|	Zn-KED3	66	12167.2	2.4	190.48179	1.2	ppb
⌊>	Ge-KED3	72	14015.5	1.6			ppb
⌈>	In-KED2	115	14573.8	2.7			ppb
|	Sb-KED2	121	19122.8	1.9	51.43981	3.0	ppb
⌊	Sb-KED2	123	15311.4	0.1	51.31767	2.8	ppb
⌈>	Lu-KED2	175	58962.8	1.4			ppb
⌊	Pb-KED2	208	707622.0	1.1	119.76963	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003S
Sample Date/Time: Wednesday, August 24, 2016 19:11:32
Sample Description: 5
Autosampler Position: 324
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003S.042
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	96007.5	0.1	138.82164	1.4	ppb
|	Cu-KED3	65	49006.2	0.3	139.17446	1.8	ppb
|	Zn-KED3	66	20364.2	0.9	319.02374	2.3	ppb
⌊>	Ge-KED3	72	14013.5	1.5			ppb
⌈>	In-KED2	115	14800.8	1.8			ppb
|	Sb-KED2	121	28194.5	0.5	74.71318	1.5	ppb
⌊	Sb-KED2	123	22952.5	0.5	75.76965	1.7	ppb
⌈>	Lu-KED2	175	59182.4	1.5			ppb
⌊	Pb-KED2	208	1516079.5	1.5	255.67736	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003SD
Sample Date/Time: Wednesday, August 24, 2016 19:14:31
Sample Description: 5
Autosampler Position: 325
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003SD.043
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	92556.9	0.8	133.49609	0.6	ppb
|	Cu-KED3	65	47803.9	1.7	135.41397	1.6	ppb
|	Zn-KED3	66	20692.3	1.3	323.33310	1.4	ppb
⌊>	Ge-KED3	72	14046.9	0.6			ppb
⌈>	In-KED2	115	14549.2	2.4			ppb
|	Sb-KED2	121	28670.1	2.0	77.28767	1.5	ppb
⌊	Sb-KED2	123	22927.2	1.9	76.98748	0.6	ppb
⌈>	Lu-KED2	175	59706.6	3.3			ppb
⌊	Pb-KED2	208	1436600.4	0.8	240.26528	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-02
Sample Date/Time: Wednesday, August 24, 2016 19:17:30
Sample Description: 5
Autosampler Position: 326
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\KQ1609274-02.044
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	70748.1	0.2	96.82903	1.2	ppb
|	Cu-KED3	65	36111.6	1.7	97.07193	2.4	ppb
|	Zn-KED3	66	12892.5	2.6	191.12099	2.6	ppb
⌊>	Ge-KED3	72	14802.7	1.0			ppb
⌈>	In-KED2	115	15212.7	1.3			ppb
|	Sb-KED2	121	74789.3	0.9	192.98203	0.7	ppb
⌊	Sb-KED2	123	60683.4	0.5	195.04042	1.7	ppb
⌈>	Lu-KED2	175	58837.9	1.6			ppb
⌊	Pb-KED2	208	1124414.0	1.0	190.73309	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		110			
⌈>	In-KED2	115		107			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:20:30
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.045
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18383.8	2.5	25.27169	2.7	ppb
|	Cu-KED3	65	9437.8	1.7	25.47483	1.6	ppb
|	Zn-KED3	66	1655.8	1.2	24.57229	0.4	ppb
⌊>	Ge-KED3	72	14724.3	1.5			ppb
⌈>	In-KED2	115	15360.0	2.7			ppb
|	Sb-KED2	121	9712.0	2.1	24.73703	4.8	ppb
⌊	Sb-KED2	123	7787.7	2.0	24.70856	1.7	ppb
⌈>	Lu-KED2	175	57876.7	0.3			ppb
⌊	Pb-KED2	208	145007.0	1.6	24.99489	1.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:23:30
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.046
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13.3	37.7	-0.01453	47.2	ppb
|	Cu-KED3	65	6.7	22.9	-0.02015	20.1	ppb
|	Zn-KED3	66	5.7	27.0	-0.03408	65.7	ppb
⌊>	Ge-KED3	72	14603.5	0.7			ppb
⌈>	In-KED2	115	15432.7	2.2			ppb
|	Sb-KED2	121	40.7	45.7	-0.01501	302.0	ppb
⌊	Sb-KED2	123	39.5	14.4	0.03020	54.9	ppb
⌈>	Lu-KED2	175	57083.2	3.2			ppb
⌊	Pb-KED2	208	24.7	33.8	0.00027	595.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		108			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 19:26:29
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.047
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45.3	33.7	0.03175	68.3	ppb
|	Cu-KED3	65	21.3	21.1	0.02158	58.8	ppb
|	Zn-KED3	66	12.3	9.4	0.07171	24.1	ppb
⌊>	Ge-KED3	72	14183.7	0.4			ppb
⌈>	In-KED2	115	15440.8	1.1			ppb
|	Sb-KED2	121	45.3	43.5	-0.00303	1610.4	ppb
⌊	Sb-KED2	123	37.5	10.7	0.02371	49.6	ppb
⌈>	Lu-KED2	175	58055.4	0.6			ppb
⌊	Pb-KED2	208	42.7	31.9	0.00326	71.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-004
Sample Date/Time: Wednesday, August 24, 2016 19:29:30
Sample Description: 5
Autosampler Position: 327
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-004.048
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	38324.0	2.2	55.70299	1.7	ppb
|	Cu-KED3	65	19463.9	0.5	55.56223	0.7	ppb
|	Zn-KED3	66	8024.6	0.9	126.33502	0.7	ppb
⌊>	Ge-KED3	72	13933.5	0.5			ppb
⌈>	In-KED2	115	14781.9	2.2			ppb
|	Sb-KED2	121	170.7	0.7	0.33556	2.1	ppb
⌊	Sb-KED2	123	146.1	11.5	0.38802	12.2	ppb
⌈>	Lu-KED2	175	57759.3	3.0			ppb
⌊	Pb-KED2	208	623994.7	0.4	107.85250	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-005
Sample Date/Time: Wednesday, August 24, 2016 19:32:29
Sample Description: 5
Autosampler Position: 328
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-005.049
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51880.7	1.5	75.41537	1.2	ppb
|	Cu-KED3	65	26494.9	1.2	75.63921	0.9	ppb
|	Zn-KED3	66	10611.6	0.9	167.09160	0.9	ppb
⌊>	Ge-KED3	72	13934.5	0.4			ppb
⌈>	In-KED2	115	15004.5	2.2			ppb
|	Sb-KED2	121	232.7	2.2	0.49126	4.3	ppb
⌊	Sb-KED2	123	187.0	1.1	0.51469	3.6	ppb
⌈>	Lu-KED2	175	58713.1	2.4			ppb
⌊	Pb-KED2	208	728798.5	1.7	123.89703	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-006
Sample Date/Time: Wednesday, August 24, 2016 19:35:28
Sample Description: 5
Autosampler Position: 329
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-006.050
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	29405.6	1.2	42.95843	0.9	ppb
|	Cu-KED3	65	14882.1	0.9	42.69577	0.6	ppb
|	Zn-KED3	66	5575.1	2.0	88.19339	1.6	ppb
⌊>	Ge-KED3	72	13860.7	0.4			ppb
⌈>	In-KED2	115	14677.0	3.6			ppb
|	Sb-KED2	121	158.7	6.9	0.30646	7.4	ppb
⌊	Sb-KED2	123	126.1	4.0	0.32579	7.8	ppb
⌈>	Lu-KED2	175	57848.1	5.2			ppb
⌊	Pb-KED2	208	330871.8	1.4	57.19315	6.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-010
Sample Date/Time: Wednesday, August 24, 2016 19:38:27
Sample Description: 5
Autosampler Position: 330
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-010.051
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51983.8	3.1	90.56508	2.2	ppb
|	Cu-KED3	65	26918.0	0.7	92.11651	0.6	ppb
|	Zn-KED3	66	7764.8	1.2	146.52507	0.8	ppb
⌊>	Ge-KED3	72	11626.4	1.2			ppb
⌈>	In-KED2	115	13035.0	0.3			ppb
|	Sb-KED2	121	670.0	5.7	1.90100	6.3	ppb
⌊	Sb-KED2	123	528.7	1.4	1.88879	1.7	ppb
⌈>	Lu-KED2	175	53206.2	1.0			ppb
⌊	Pb-KED2	208	1462819.1	1.7	274.36736	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-011
Sample Date/Time: Wednesday, August 24, 2016 19:41:26
Sample Description: 5
Autosampler Position: 331
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-011.052
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45899.0	0.8	66.48188	2.2	ppb
|	Cu-KED3	65	23565.4	2.1	67.03101	2.7	ppb
|	Zn-KED3	66	8274.4	0.4	129.79045	1.4	ppb
⌊>	Ge-KED3	72	13986.8	1.4			ppb
⌈>	In-KED2	115	14860.9	2.0			ppb
|	Sb-KED2	121	292.7	4.1	0.65563	5.0	ppb
⌊	Sb-KED2	123	242.4	6.2	0.70362	9.4	ppb
⌈>	Lu-KED2	175	58682.7	2.6			ppb
⌊	Pb-KED2	208	965939.5	0.8	164.33001	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-012
Sample Date/Time: Wednesday, August 24, 2016 19:44:25
Sample Description: 5
Autosampler Position: 332
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-012.053
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25665.0	2.0	37.12008	0.8	ppb
|	Cu-KED3	65	13310.2	1.4	37.82131	3.4	ppb
|	Zn-KED3	66	8906.8	0.2	139.61537	1.9	ppb
⌊>	Ge-KED3	72	13999.2	2.1			ppb
⌈>	In-KED2	115	14424.7	2.7			ppb
|	Sb-KED2	121	186.0	12.2	0.38957	18.6	ppb
⌊	Sb-KED2	123	154.5	7.0	0.42957	11.6	ppb
⌈>	Lu-KED2	175	56911.2	2.5			ppb
⌊	Pb-KED2	208	406149.2	0.3	71.23355	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-013
Sample Date/Time: Wednesday, August 24, 2016 19:47:24
Sample Description: 5
Autosampler Position: 333
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-013.054
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	60574.8	0.9	86.47060	0.7	ppb
|	Cu-KED3	65	31329.7	1.3	87.85406	2.8	ppb
|	Zn-KED3	66	9541.5	2.4	147.56608	4.0	ppb
⌊>	Ge-KED3	72	14191.7	1.6			ppb
⌈>	In-KED2	115	14977.8	0.6			ppb
|	Sb-KED2	121	1812.8	3.2	4.63512	2.7	ppb
⌊	Sb-KED2	123	1476.5	1.4	4.72678	1.4	ppb
⌈>	Lu-KED2	175	58036.3	1.4			ppb
⌊	Pb-KED2	208	4205697.3	0.5	723.19926	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-014
Sample Date/Time: Wednesday, August 24, 2016 19:50:23
Sample Description: 5
Autosampler Position: 334
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-014.055
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15787.4	1.0	23.13021	1.2	ppb
|	Cu-KED3	65	8129.6	1.5	23.38826	1.5	ppb
|	Zn-KED3	66	16313.6	0.7	259.22062	1.1	ppb
⌊>	Ge-KED3	72	13812.3	0.4			ppb
⌈>	In-KED2	115	14486.5	1.6			ppb
|	Sb-KED2	121	180.7	6.8	0.37154	6.8	ppb
⌊	Sb-KED2	123	144.1	14.0	0.39149	17.4	ppb
⌈>	Lu-KED2	175	59269.4	1.4			ppb
⌊	Pb-KED2	208	296209.2	1.8	49.87713	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-003
Sample Date/Time: Wednesday, August 24, 2016 19:53:22
Sample Description: 5
Autosampler Position: 335
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-003.056
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27002.8	1.6	38.82126	2.7	ppb
|	Cu-KED3	65	13815.7	0.7	39.00251	1.6	ppb
|	Zn-KED3	66	16568.9	2.6	258.23377	4.0	ppb
⌊>	Ge-KED3	72	14087.3	1.7			ppb
⌈>	In-KED2	115	14691.7	1.9			ppb
|	Sb-KED2	121	162.0	6.9	0.31531	10.8	ppb
⌊	Sb-KED2	123	125.1	0.4	0.32150	2.1	ppb
⌈>	Lu-KED2	175	60334.2	2.1			ppb
⌊	Pb-KED2	208	359687.9	1.4	59.50909	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:56:24
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.057
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18444.6	2.0	25.32049	0.8	ppb
|	Cu-KED3	65	9444.5	2.5	25.45800	1.2	ppb
|	Zn-KED3	66	1657.8	0.5	24.57394	0.9	ppb
⌊>	Ge-KED3	72	14741.9	1.4			ppb
⌈>	In-KED2	115	15037.7	4.3			ppb
|	Sb-KED2	121	9602.6	1.4	24.99732	5.0	ppb
⌊	Sb-KED2	123	7652.5	2.6	24.80874	2.0	ppb
⌈>	Lu-KED2	175	56734.5	3.4			ppb
⌊	Pb-KED2	208	144247.1	0.3	25.38393	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		106			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:59:24
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.058
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18.7	22.3	-0.00714	76.4	ppb
|	Cu-KED3	65	5.0	20.0	-0.02469	10.5	ppb
|	Zn-KED3	66	6.7	37.7	-0.01925	191.5	ppb
⌊>	Ge-KED3	72	14602.8	1.7			ppb
⌈>	In-KED2	115	15143.7	2.6			ppb
|	Sb-KED2	121	36.0	33.3	-0.02408	139.6	ppb
⌊	Sb-KED2	123	36.5	18.0	0.02270	80.4	ppb
⌈>	Lu-KED2	175	57168.2	0.4			ppb
⌊	Pb-KED2	208	19.3	33.3	-0.00070	159.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		108			
⌈>	In-KED2	115		107			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 20:02:24
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\LLCCVS.059
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	176.7	13.6	0.21397	11.2	ppb
|	Cu-KED3	65	87.0	11.1	0.20200	17.4	ppb
|	Zn-KED3	66	83.0	4.8	1.14093	0.9	ppb
⌊>	Ge-KED3	72	14459.3	4.0			ppb
⌈>	In-KED2	115	15391.6	3.0			ppb
|	Sb-KED2	121	79.3	11.4	0.08450	27.1	ppb
⌊	Sb-KED2	123	60.7	17.3	0.09793	32.2	ppb
⌈>	Lu-KED2	175	58441.1	3.7			ppb
⌊	Pb-KED2	208	620.0	8.6	0.10211	12.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	107				
|	Cu-KED3	65	101				
|	Zn-KED3	66	114				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	85				
⌊	Sb-KED2	123	98				
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-004
Sample Date/Time: Wednesday, August 24, 2016 20:05:25
Sample Description: 5
Autosampler Position: 336
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-004.060
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22037.7	1.3	31.62240	1.7	ppb
|	Cu-KED3	65	11225.4	0.1	31.63558	2.3	ppb
|	Zn-KED3	66	12915.8	1.2	200.96518	3.6	ppb
⌊>	Ge-KED3	72	14111.3	2.4			ppb
⌈>	In-KED2	115	14529.7	2.0			ppb
|	Sb-KED2	121	144.0	12.3	0.27132	17.9	ppb
⌊	Sb-KED2	123	112.0	7.5	0.28222	11.8	ppb
⌈>	Lu-KED2	175	60734.6	3.7			ppb
⌊	Pb-KED2	208	271221.4	1.2	44.60910	4.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		113			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-005
Sample Date/Time: Wednesday, August 24, 2016 20:08:24
Sample Description: 5
Autosampler Position: 337
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-005.061
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28120.3	1.7	41.47726	1.9	ppb
|	Cu-KED3	65	14617.1	1.7	42.33635	0.6	ppb
|	Zn-KED3	66	14698.2	2.7	234.92288	1.6	ppb
⌊>	Ge-KED3	72	13729.3	1.3			ppb
⌈>	In-KED2	115	14535.9	0.2			ppb
|	Sb-KED2	121	146.0	19.2	0.27649	27.4	ppb
⌊	Sb-KED2	123	118.7	2.4	0.30442	2.9	ppb
⌈>	Lu-KED2	175	60470.0	0.5			ppb
⌊	Pb-KED2	208	367510.0	0.8	60.64011	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-006
Sample Date/Time: Wednesday, August 24, 2016 20:11:23
Sample Description: 5
Autosampler Position: 338
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-006.062
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28889.2	1.3	41.98583	2.0	ppb
|	Cu-KED3	65	14810.0	0.6	42.26546	0.1	ppb
|	Zn-KED3	66	12523.2	0.8	197.21687	0.3	ppb
⌊>	Ge-KED3	72	13934.1	0.7			ppb
⌈>	In-KED2	115	14433.8	1.1			ppb
|	Sb-KED2	121	174.0	13.9	0.35503	17.3	ppb
⌊	Sb-KED2	123	130.1	11.3	0.34582	13.8	ppb
⌈>	Lu-KED2	175	60226.1	2.1			ppb
⌊	Pb-KED2	208	402039.9	2.0	66.63682	3.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-010
Sample Date/Time: Wednesday, August 24, 2016 20:14:22
Sample Description: 5
Autosampler Position: 339
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-010.063
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	37874.8	1.8	56.07131	3.3	ppb
|	Cu-KED3	65	19434.5	2.1	56.50701	3.7	ppb
|	Zn-KED3	66	9580.9	2.9	153.67312	4.5	ppb
⌊>	Ge-KED3	72	13684.9	1.5			ppb
⌈>	In-KED2	115	14485.3	2.2			ppb
|	Sb-KED2	121	359.3	1.2	0.85663	2.9	ppb
⌊	Sb-KED2	123	284.0	2.4	0.86453	4.2	ppb
⌈>	Lu-KED2	175	59261.7	2.5			ppb
⌊	Pb-KED2	208	724585.6	0.8	122.03562	2.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-011
Sample Date/Time: Wednesday, August 24, 2016 20:17:21
Sample Description: 5
Autosampler Position: 340
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-011.064
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	42891.6	0.7	62.19830	3.8	ppb
|	Cu-KED3	65	21731.5	1.8	61.89854	4.7	ppb
|	Zn-KED3	66	8009.6	0.4	125.78249	3.4	ppb
⌊>	Ge-KED3	72	13978.5	3.2			ppb
⌈>	In-KED2	115	14754.2	1.3			ppb
|	Sb-KED2	121	1362.7	5.7	3.51173	7.2	ppb
⌊	Sb-KED2	123	1109.0	4.3	3.58069	3.2	ppb
⌈>	Lu-KED2	175	59109.1	2.6			ppb
⌊	Pb-KED2	208	3743737.7	0.8	632.30711	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-012
Sample Date/Time: Wednesday, August 24, 2016 20:20:20
Sample Description: 5
Autosampler Position: 341
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-012.065
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	39029.2	0.6	56.57766	2.1	ppb
|	Cu-KED3	65	20049.4	0.5	57.08231	2.5	ppb
|	Zn-KED3	66	11922.0	1.0	187.22073	1.1	ppb
⌊>	Ge-KED3	72	13974.8	1.9			ppb
⌈>	In-KED2	115	14848.3	0.5			ppb
|	Sb-KED2	121	327.3	10.9	0.74788	12.7	ppb
⌊	Sb-KED2	123	290.6	2.7	0.86231	2.7	ppb
⌈>	Lu-KED2	175	59678.8	1.8			ppb
⌊	Pb-KED2	208	1609253.3	2.6	269.15347	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-013
Sample Date/Time: Wednesday, August 24, 2016 20:23:19
Sample Description: 5
Autosampler Position: 342
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-013.066
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41082.4	3.1	60.54967	3.8	ppb
|	Cu-KED3	65	21470.5	2.0	62.14446	2.8	ppb
|	Zn-KED3	66	11134.3	1.7	177.78064	2.7	ppb
⌊>	Ge-KED3	72	13746.6	2.2			ppb
⌈>	In-KED2	115	14639.6	1.3			ppb
|	Sb-KED2	121	886.7	7.0	2.26195	8.2	ppb
⌊	Sb-KED2	123	719.3	3.9	2.30886	4.8	ppb
⌈>	Lu-KED2	175	59834.5	3.5			ppb
⌊	Pb-KED2	208	1886579.8	0.5	314.88971	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-014
Sample Date/Time: Wednesday, August 24, 2016 20:26:18
Sample Description: 5
Autosampler Position: 343
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-014.067
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	23983.5	1.4	35.52457	2.0	ppb
|	Cu-KED3	65	12246.2	0.8	35.62116	1.5	ppb
|	Zn-KED3	66	8429.5	1.2	135.27910	1.0	ppb
⌊>	Ge-KED3	72	13669.9	0.8			ppb
⌈>	In-KED2	115	14418.2	3.0			ppb
|	Sb-KED2	121	259.3	4.2	0.58943	8.6	ppb
⌊	Sb-KED2	123	203.0	3.7	0.59381	4.1	ppb
⌈>	Lu-KED2	175	57127.4	2.5			ppb
⌊	Pb-KED2	208	1032441.0	1.5	180.36005	1.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-03
Sample Date/Time: Wednesday, August 24, 2016 20:29:17
Sample Description: 5
Autosampler Position: 344
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609920-03.068
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21.3	42.3	0.00115	1349.4	ppb
|	Cu-KED3	65	9.7	26.0	-0.00831	84.9	ppb
|	Zn-KED3	66	23.0	19.0	0.27549	23.9	ppb
⌊>	Ge-KED3	72	12772.4	3.8			ppb
⌈>	In-KED2	115	13975.6	0.5			ppb
|	Sb-KED2	121	16.7	27.7	-0.07116	18.4	ppb
⌊	Sb-KED2	123	13.6	27.3	-0.04731	27.7	ppb
⌈>	Lu-KED2	175	52955.0	1.8			ppb
⌊	Pb-KED2	208	91.3	7.0	0.01315	10.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-002
Sample Date/Time: Wednesday, August 24, 2016 20:32:16
Sample Description: 5
Autosampler Position: 345
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-002.069
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10917.5	1.1	15.78195	1.9	ppb
|	Cu-KED3	65	5704.5	3.0	16.18904	2.6	ppb
|	Zn-KED3	66	6203.7	1.0	97.24137	0.8	ppb
⌊>	Ge-KED3	72	13990.8	0.8			ppb
⌈>	In-KED2	115	14444.1	1.7			ppb
|	Sb-KED2	121	95.3	6.4	0.14125	12.0	ppb
⌊	Sb-KED2	123	95.2	3.6	0.22719	3.1	ppb
⌈>	Lu-KED2	175	62522.2	1.0			ppb
⌊	Pb-KED2	208	159145.2	2.0	25.39924	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		116			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 20:35:18
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.070
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17582.1	0.7	25.40409	1.3	ppb
|	Cu-KED3	65	8912.4	1.0	25.28500	0.4	ppb
|	Zn-KED3	66	1577.4	4.0	24.60349	3.5	ppb
⌊>	Ge-KED3	72	14007.9	0.6			ppb
⌈>	In-KED2	115	14863.5	3.4			ppb
|	Sb-KED2	121	9443.1	2.1	24.85598	4.3	ppb
⌊	Sb-KED2	123	7549.5	1.5	24.75922	2.0	ppb
⌈>	Lu-KED2	175	58054.4	1.9			ppb
⌊	Pb-KED2	208	143593.6	0.9	24.68300	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	102				
|	Cu-KED3	65	101				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		105			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 20:38:17
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.071
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13.3	48.2	-0.01323	71.0	ppb
|	Cu-KED3	65	7.0	37.8	-0.01781	43.6	ppb
|	Zn-KED3	66	3.3	34.6	-0.06534	28.9	ppb
⌊>	Ge-KED3	72	13613.5	1.2			ppb
⌈>	In-KED2	115	14564.5	1.9			ppb
|	Sb-KED2	121	35.3	18.2	-0.02280	73.9	ppb
⌊	Sb-KED2	123	28.5	8.6	0.00053	1426.5	ppb
⌈>	Lu-KED2	175	55499.6	1.3			ppb
⌊	Pb-KED2	208	24.0	54.6	0.00025	953.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-003
Sample Date/Time: Wednesday, August 24, 2016 20:41:19
Sample Description: 5
Autosampler Position: 346
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-003.072
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10952.9	0.6	16.16564	1.1	ppb
|	Cu-KED3	65	5696.8	0.9	16.51187	2.4	ppb
|	Zn-KED3	66	5834.9	1.6	93.37659	1.4	ppb
⌊>	Ge-KED3	72	13703.9	1.6			ppb
⌈>	In-KED2	115	14220.8	1.2			ppb
|	Sb-KED2	121	96.0	18.2	0.14675	30.8	ppb
⌊	Sb-KED2	123	70.1	7.2	0.14593	10.1	ppb
⌈>	Lu-KED2	175	60836.0	2.8			ppb
⌊	Pb-KED2	208	140964.1	2.1	23.11988	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		113			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-004
Sample Date/Time: Wednesday, August 24, 2016 20:44:18
Sample Description: 5
Autosampler Position: 347
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-004.073
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14996.5	1.0	22.43444	2.6	ppb
|	Cu-KED3	65	7536.7	2.2	22.13830	3.2	ppb
|	Zn-KED3	66	6798.0	2.7	110.18758	1.2	ppb
⌊>	Ge-KED3	72	13531.1	2.2			ppb
⌈>	In-KED2	115	14495.5	2.1			ppb
|	Sb-KED2	121	126.0	2.7	0.22360	7.3	ppb
⌊	Sb-KED2	123	110.5	4.5	0.27786	3.3	ppb
⌈>	Lu-KED2	175	62222.0	3.9			ppb
⌊	Pb-KED2	208	186870.5	1.0	30.00126	4.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		115			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-005
Sample Date/Time: Wednesday, August 24, 2016 20:47:17
Sample Description: 5
Autosampler Position: 348
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-005.074
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17634.9	1.1	25.88823	2.4	ppb
|	Cu-KED3	65	8815.7	2.5	25.41102	3.1	ppb
|	Zn-KED3	66	7318.2	2.0	116.41571	2.2	ppb
⌊>	Ge-KED3	72	13789.7	1.3			ppb
⌈>	In-KED2	115	14539.9	1.5			ppb
|	Sb-KED2	121	167.3	10.8	0.33403	14.6	ppb
⌊	Sb-KED2	123	150.5	5.1	0.41140	6.9	ppb
⌈>	Lu-KED2	175	61464.0	1.9			ppb
⌊	Pb-KED2	208	276688.9	0.9	44.92145	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		114			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-008
Sample Date/Time: Wednesday, August 24, 2016 20:50:16
Sample Description: 5
Autosampler Position: 349
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-008.075
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15706.0	1.4	27.28306	4.4	ppb
|	Cu-KED3	65	8052.9	2.2	27.47376	5.1	ppb
|	Zn-KED3	66	5998.6	1.1	112.96043	5.4	ppb
⌊>	Ge-KED3	72	11666.1	4.4			ppb
⌈>	In-KED2	115	13013.5	0.6			ppb
|	Sb-KED2	121	157.3	11.5	0.35683	15.3	ppb
⌊	Sb-KED2	123	123.1	3.6	0.36770	3.8	ppb
⌈>	Lu-KED2	175	53534.8	1.8			ppb
⌊	Pb-KED2	208	210663.3	0.9	39.27325	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-009
Sample Date/Time: Wednesday, August 24, 2016 20:53:15
Sample Description: 5
Autosampler Position: 350
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-009.076
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10018.8	1.9	18.01340	3.7	ppb
|	Cu-KED3	65	5159.6	2.6	18.21780	4.6	ppb
|	Zn-KED3	66	4066.6	1.1	79.22042	1.3	ppb
⌊>	Ge-KED3	72	11256.1	2.2			ppb
⌈>	In-KED2	115	12727.1	1.4			ppb
|	Sb-KED2	121	98.7	15.3	0.18694	27.4	ppb
⌊	Sb-KED2	123	78.9	14.7	0.20842	22.7	ppb
⌈>	Lu-KED2	175	52064.7	1.4			ppb
⌊	Pb-KED2	208	100342.4	1.2	19.22987	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-010
Sample Date/Time: Wednesday, August 24, 2016 20:56:14
Sample Description: 5
Autosampler Position: 351
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-010.077
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13390.9	2.0	24.15003	1.9	ppb
|	Cu-KED3	65	6766.6	1.4	23.96787	2.8	ppb
|	Zn-KED3	66	4751.5	1.3	92.85246	0.9	ppb
⌊>	Ge-KED3	72	11222.1	1.6			ppb
⌈>	In-KED2	115	12795.6	2.7			ppb
|	Sb-KED2	121	92.0	17.8	0.16364	25.9	ppb
⌊	Sb-KED2	123	84.2	10.8	0.22689	15.0	ppb
⌈>	Lu-KED2	175	52303.3	1.7			ppb
⌊	Pb-KED2	208	126288.5	1.5	24.08918	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011
Sample Date/Time: Wednesday, August 24, 2016 20:59:13
Sample Description: 5
Autosampler Position: 352
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011.078
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20235.7	1.6	34.88099	3.2	ppb
|	Cu-KED3	65	10278.0	0.2	34.78832	2.3	ppb
|	Zn-KED3	66	5706.1	2.7	106.50007	0.7	ppb
⌊>	Ge-KED3	72	11750.2	2.1			ppb
⌈>	In-KED2	115	12910.3	3.9			ppb
|	Sb-KED2	121	143.3	8.5	0.31940	16.7	ppb
⌊	Sb-KED2	123	94.0	6.6	0.26097	5.4	ppb
⌈>	Lu-KED2	175	52506.3	2.1			ppb
⌊	Pb-KED2	208	273776.4	1.9	52.04334	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011L
Sample Date/Time: Wednesday, August 24, 2016 21:02:12
Sample Description: 25
Autosampler Position: 353
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011L.079
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	4625.4	3.3	7.25352	4.9	ppb
|	Cu-KED3	65	2352.5	0.7	7.23782	1.6	ppb
|	Zn-KED3	66	1319.4	2.4	22.39973	4.2	ppb
⌊>	Ge-KED3	72	12871.5	2.1			ppb
⌈>	In-KED2	115	14017.8	4.9			ppb
|	Sb-KED2	121	44.7	10.3	0.00764	238.1	ppb
⌊	Sb-KED2	123	40.8	13.1	0.04709	31.1	ppb
⌈>	Lu-KED2	175	55323.3	1.0			ppb
⌊	Pb-KED2	208	60253.4	1.9	10.86424	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011A
Sample Date/Time: Wednesday, August 24, 2016 21:05:11
Sample Description: 5 +50ppb
Autosampler Position: 354
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011A.080
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	47812.6	2.2	83.09534	0.7	ppb
|	Cu-KED3	65	24272.3	2.2	82.84558	0.2	ppb
|	Zn-KED3	66	8325.8	0.4	156.76991	2.2	ppb
⌊>	Ge-KED3	72	11656.1	2.4			ppb
⌈>	In-KED2	115	12839.9	1.8			ppb
|	Sb-KED2	121	17056.2	2.1	52.06843	2.9	ppb
⌊	Sb-KED2	123	13593.7	1.0	51.69293	0.9	ppb
⌈>	Lu-KED2	175	52626.8	0.8			ppb
⌊	Pb-KED2	208	520602.0	1.2	98.70253	0.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011S
Sample Date/Time: Wednesday, August 24, 2016 21:08:09
Sample Description: 5
Autosampler Position: 355
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011S.081
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	74038.0	0.9	129.74716	1.6	ppb
|	Cu-KED3	65	37603.8	1.6	129.45241	3.4	ppb
|	Zn-KED3	66	15784.4	1.9	299.73234	3.5	ppb
⌊>	Ge-KED3	72	11563.0	1.9			ppb
⌈>	In-KED2	115	13059.1	0.7			ppb
|	Sb-KED2	121	25413.3	2.1	76.31279	1.8	ppb
⌊	Sb-KED2	123	20288.1	1.7	75.88828	1.0	ppb
⌈>	Lu-KED2	175	53621.8	1.4			ppb
⌊	Pb-KED2	208	1248958.3	1.2	232.42677	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:11:10
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.082
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16359.4	4.6	25.13434	5.6	ppb
|	Cu-KED3	65	8301.1	3.2	25.03626	3.5	ppb
|	Zn-KED3	66	1491.7	3.4	24.74384	4.4	ppb
⌊>	Ge-KED3	72	13178.1	1.1			ppb
⌈>	In-KED2	115	14280.0	2.1			ppb
|	Sb-KED2	121	9219.0	2.8	25.23587	0.7	ppb
⌊	Sb-KED2	123	7486.1	2.4	25.54514	0.3	ppb
⌈>	Lu-KED2	175	54213.1	3.1			ppb
⌊	Pb-KED2	208	138582.6	0.1	25.51885	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	100				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		101			
|	Sb-KED2	121	101				
⌊	Sb-KED2	123	102				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:14:10
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.083
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8.0	25.0	-0.02045	15.9	ppb
|	Cu-KED3	65	3.3	34.6	-0.02810	12.1	ppb
|	Zn-KED3	66	5.3	10.8	-0.02884	27.5	ppb
⌊>	Ge-KED3	72	12948.9	2.3			ppb
⌈>	In-KED2	115	13874.7	4.0			ppb
|	Sb-KED2	121	33.3	15.1	-0.02320	77.2	ppb
⌊	Sb-KED2	123	27.5	32.7	0.00231	1403.0	ppb
⌈>	Lu-KED2	175	53474.0	4.7			ppb
⌊	Pb-KED2	208	28.0	31.1	0.00117	144.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		96			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 21:17:09
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.084
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	146.0	4.1	0.19755	6.2	ppb
|	Cu-KED3	65	84.3	8.6	0.22348	12.3	ppb
|	Zn-KED3	66	63.3	7.1	0.96577	11.3	ppb
⌊>	Ge-KED3	72	12842.8	3.1			ppb
⌈>	In-KED2	115	13858.2	3.3			ppb
|	Sb-KED2	121	68.7	21.1	0.07616	49.9	ppb
⌊	Sb-KED2	123	53.1	19.0	0.09212	36.9	ppb
⌈>	Lu-KED2	175	54260.6	3.0			ppb
⌊	Pb-KED2	208	586.7	6.4	0.10394	8.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	112				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121	76				
⌊	Sb-KED2	123	92				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	104				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011SD
Sample Date/Time: Wednesday, August 24, 2016 21:20:10
Sample Description: 5
Autosampler Position: 356
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011SD.085
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	73305.7	3.0	126.03621	6.6	ppb
|	Cu-KED3	65	37095.1	2.7	125.25607	6.4	ppb
|	Zn-KED3	66	15623.2	2.7	290.98186	6.3	ppb
⌊>	Ge-KED3	72	11802.9	3.8			ppb
⌈>	In-KED2	115	12916.9	2.1			ppb
|	Sb-KED2	121	25087.3	1.9	76.17710	2.0	ppb
⌊	Sb-KED2	123	19932.9	1.4	75.39295	1.1	ppb
⌈>	Lu-KED2	175	53550.9	3.7			ppb
⌊	Pb-KED2	208	1232067.0	1.4	229.78719	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-04
Sample Date/Time: Wednesday, August 24, 2016 21:23:09
Sample Description: 5
Autosampler Position: 357
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609920-04.086
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	64658.7	2.3	103.03853	2.3	ppb
|	Cu-KED3	65	33284.7	1.5	104.17989	2.1	ppb
|	Zn-KED3	66	12337.7	3.1	212.97432	3.0	ppb
⌊>	Ge-KED3	72	12713.3	1.3			ppb
⌈>	In-KED2	115	13789.7	4.3			ppb
|	Sb-KED2	121	73006.8	1.8	208.13180	5.4	ppb
⌊	Sb-KED2	123	58774.5	1.4	208.54090	2.8	ppb
⌈>	Lu-KED2	175	53071.9	4.4			ppb
⌊	Pb-KED2	208	1096580.6	1.0	206.47658	5.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 21:26:10
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.087
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	35.3	34.1	0.02048	86.5	ppb
|	Cu-KED3	65	15.3	26.4	0.00727	159.5	ppb
|	Zn-KED3	66	11.0	31.5	0.06093	89.6	ppb
⌊>	Ge-KED3	72	13368.3	1.7			ppb
⌈>	In-KED2	115	14264.6	0.8			ppb
|	Sb-KED2	121	48.7	35.0	0.01609	293.9	ppb
⌊	Sb-KED2	123	33.6	3.7	0.02016	22.5	ppb
⌈>	Lu-KED2	175	55404.6	1.0			ppb
⌊	Pb-KED2	208	47.3	20.0	0.00446	39.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-012
Sample Date/Time: Wednesday, August 24, 2016 21:29:11
Sample Description: 5
Autosampler Position: 358
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-012.088
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2.7	114.6	-0.02713	23.7	ppb
|	Cu-KED3	65	3.3	34.6	0.03368	234.3	ppb
|	Zn-KED3	66	2.0	86.6	0.38981	182.1	ppb
⌊>	Ge-KED3	72	9538.7	140.5			ppb
⌈>	In-KED2	115	11429.8	82.1			ppb
|	Sb-KED2	121	5.3	86.6	-0.10403	12.9	ppb
⌊	Sb-KED2	123	1.9	6.7	-0.07571	29.7	ppb
⌈>	Lu-KED2	175	44820.0	90.8			ppb
⌊	Pb-KED2	208	23.3	9.9	0.00971	166.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		71			
⌈>	In-KED2	115		80			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		83			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

No Uptake JB 8/25/16

LABWORKS - Summary Report

Sample ID: KQ1609300-03
Sample Date/Time: Wednesday, August 24, 2016 21:32:10
Sample Description: 5
Autosampler Position: 359
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\KQ1609300-03.089
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.0	57.7	-0.01371	82.2	ppb
|	Cu-KED3	65	6.0	16.7	-0.01941	15.8	ppb
|	Zn-KED3	66	18.0	20.0	0.19370	33.2	ppb
⌊>	Ge-KED3	72	12641.3	0.6			ppb
⌈>	In-KED2	115	13959.7	4.4			ppb
|	Sb-KED2	121	14.0	65.5	-0.07793	35.1	ppb
⌊	Sb-KED2	123	9.1	27.5	-0.06308	15.0	ppb
⌈>	Lu-KED2	175	52173.8	0.9			ppb
⌊	Pb-KED2	208	88.7	15.0	0.01290	20.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-004
Sample Date/Time: Wednesday, August 24, 2016 21:35:09
Sample Description: 5
Autosampler Position: 360
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-004.090
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	24401.5	1.3	36.64391	3.7	ppb
|	Cu-KED3	65	12123.5	1.6	35.74703	3.3	ppb
|	Zn-KED3	66	5918.9	2.8	96.26694	4.2	ppb
⌊>	Ge-KED3	72	13490.4	2.4			ppb
⌈>	In-KED2	115	14130.5	4.8			ppb
|	Sb-KED2	121	126.0	15.1	0.23123	16.8	ppb
⌊	Sb-KED2	123	107.4	10.6	0.27640	11.2	ppb
⌈>	Lu-KED2	175	57524.3	2.9			ppb
⌊	Pb-KED2	208	274638.6	1.1	47.66919	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-005
Sample Date/Time: Wednesday, August 24, 2016 21:38:10
Sample Description: 5
Autosampler Position: 101
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\K1608209-005.091
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2.7	43.3	0.08999	138.8	ppb
|	Cu-KED3	65	1.0	100.0	0.01567	400.5	ppb
|	Zn-KED3	66	0.7	86.6	0.23452	154.1	ppb
⌊>	Ge-KED3	72	657.0	54.4			ppb
⌈>	In-KED2	115	17818.6	107.9			ppb
|	Sb-KED2	121	2.7	173.2	-0.11529	4.1	ppb
⌊	Sb-KED2	123	2.5	61.3	-0.03417	267.9	ppb
⌈>	Lu-KED2	175	69678.4	109.3			ppb
⌊	Pb-KED2	208	21.3	48.1	0.01343	185.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		5			
⌈>	In-KED2	115		125			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		129			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ge-KED3 72 Int Std for samp	Ge-KED3	72	IS out of control
In-KED2 115 Int Std for sampl	In-KED2	115	IS out of control
Lu-KED2 175 Int Std for sam	Lu-KED2	175	IS out of control

No Uptake
JR 8/25/16

LABWORKS - Summary Report

Sample ID: K1608209-006
Sample Date/Time: Wednesday, August 24, 2016 21:41:08
Sample Description: 5
Autosampler Position: 102
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-006.092
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	40022.0	0.2	59.87426	3.1	ppb
|	Cu-KED3	65	20678.6	0.3	60.75094	2.7	ppb
|	Zn-KED3	66	8065.3	3.2	130.61607	1.8	ppb
⌊>	Ge-KED3	72	13546.4	2.9			ppb
⌈>	In-KED2	115	14444.0	1.7			ppb
|	Sb-KED2	121	186.0	7.5	0.38745	7.7	ppb
⌊	Sb-KED2	123	145.8	6.6	0.39852	7.1	ppb
⌈>	Lu-KED2	175	57849.9	0.9			ppb
⌊	Pb-KED2	208	463770.4	1.4	79.98763	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-007
Sample Date/Time: Wednesday, August 24, 2016 21:44:08
Sample Description: 5
Autosampler Position: 103
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-007.093
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21559.6	1.2	33.38692	4.8	ppb
|	Cu-KED3	65	10889.8	0.6	33.11217	4.2	ppb
|	Zn-KED3	66	5859.9	1.1	98.26881	3.6	ppb
⌊>	Ge-KED3	72	13088.0	3.6			ppb
⌈>	In-KED2	115	14291.9	0.8			ppb
|	Sb-KED2	121	184.7	7.2	0.38969	10.4	ppb
⌊	Sb-KED2	123	137.6	3.7	0.37591	3.6	ppb
⌈>	Lu-KED2	175	57523.9	1.1			ppb
⌊	Pb-KED2	208	382742.3	1.1	66.39706	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010
Sample Date/Time: Wednesday, August 24, 2016 21:47:07
Sample Description: 5
Autosampler Position: 104
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010.094
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	34224.3	1.0	51.34678	3.3	ppb
|	Cu-KED3	65	17471.0	1.4	51.47995	3.7	ppb
|	Zn-KED3	66	9266.0	1.2	150.60112	3.4	ppb
⌊>	Ge-KED3	72	13505.7	2.4			ppb
⌈>	In-KED2	115	14373.1	2.6			ppb
|	Sb-KED2	121	614.0	0.3	1.56057	2.7	ppb
⌊	Sb-KED2	123	467.3	1.1	1.49624	4.0	ppb
⌈>	Lu-KED2	175	57873.1	3.2			ppb
⌊	Pb-KED2	208	894314.8	0.6	154.30637	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:50:07
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.095
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	4.0	50.0	2.17826	129.6	ppb
	Cu-KED3	65	1.7	69.3	2.76009	162.1	ppb
	Zn-KED3	66	1.3	43.3	6.27034	118.3	ppb
>	Ge-KED3	72	313.3	141.3			ppb
>	In-KED2	115	11516.3	157.1			ppb
	Sb-KED2	121	6.7	75.5	0.22788	241.9	ppb
	Sb-KED2	123	1.2	111.5	0.00580	3052.3	ppb
>	Lu-KED2	175	43454.3	159.4			ppb
	Pb-KED2	208	178.0	69.1	1.09193	166.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	9				
	Cu-KED3	65	11				
	Zn-KED3	66	25				
>	Ge-KED3	72		2			
>	In-KED2	115		81			
	Sb-KED2	121	1				
	Sb-KED2	123	0				
>	Lu-KED2	175		81			
	Pb-KED2	208	4				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Cu-KED3	63	Out of Control
QC Std 2	Cu-KED3	65	Out of Control
QC Std 2	Zn-KED3	66	Out of Control
Ge-KED3 72 Int Std for QC S	Ge-KED3	72	IS out of control
QC Std 2	Sb-KED2	121	Out of Control
QC Std 2	Sb-KED2	123	Out of Control
QC Std 2	Pb-KED2	208	Out of Control

JB 8/25/16 See Run

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:52:26
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.096
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17434.6	1.2	25.69015	1.7	ppb
|	Cu-KED3	65	8929.5	2.3	25.84217	3.5	ppb
|	Zn-KED3	66	1585.4	2.6	25.23393	4.3	ppb
⌊>	Ge-KED3	72	13738.6	2.5			ppb
⌈>	In-KED2	115	14619.4	1.5			ppb
|	Sb-KED2	121	9296.4	1.3	24.86494	2.9	ppb
⌊	Sb-KED2	123	7586.5	0.4	25.29192	1.9	ppb
⌈>	Lu-KED2	175	55333.6	1.6			ppb
⌊	Pb-KED2	208	140636.2	1.5	25.36455	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	103				
|	Cu-KED3	65	103				
|	Zn-KED3	66	101				
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	101				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:55:25
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.097
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.7	59.8	-0.01461	75.9	ppb
|	Cu-KED3	65	8.0	45.1	-0.01544	69.3	ppb
|	Zn-KED3	66	4.0	66.1	-0.05657	72.8	ppb
⌊>	Ge-KED3	72	13991.5	1.7			ppb
⌈>	In-KED2	115	14684.0	3.8			ppb
|	Sb-KED2	121	32.0	32.5	-0.03162	100.5	ppb
⌊	Sb-KED2	123	26.9	13.5	-0.00516	263.6	ppb
⌈>	Lu-KED2	175	54281.9	1.5			ppb
⌊	Pb-KED2	208	20.0	72.1	-0.00037	723.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010L
Sample Date/Time: Wednesday, August 24, 2016 21:58:26
Sample Description: 25
Autosampler Position: 105
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010L.098
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	7431.9	1.6	10.71723	1.2	ppb
|	Cu-KED3	65	3800.5	1.2	10.76040	2.1	ppb
|	Zn-KED3	66	1977.1	2.1	30.87051	2.4	ppb
⌊>	Ge-KED3	72	14009.9	1.3			ppb
⌈>	In-KED2	115	14686.4	4.3			ppb
|	Sb-KED2	121	140.7	9.1	0.25887	15.9	ppb
⌊	Sb-KED2	123	110.1	10.2	0.27125	8.9	ppb
⌈>	Lu-KED2	175	57331.8	1.2			ppb
⌊	Pb-KED2	208	185067.4	0.5	32.20948	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010A
Sample Date/Time: Wednesday, August 24, 2016 22:01:25
Sample Description: 5 +50ppb
Autosampler Position: 106
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010A.099
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66729.5	2.2	101.04332	3.3	ppb
|	Cu-KED3	65	34415.7	1.0	102.33909	2.0	ppb
|	Zn-KED3	66	12348.7	0.1	202.51591	1.3	ppb
⌊>	Ge-KED3	72	13381.9	1.1			ppb
⌈>	In-KED2	115	14604.4	2.0			ppb
|	Sb-KED2	121	19087.4	2.1	51.24225	4.1	ppb
⌊	Sb-KED2	123	15166.3	1.2	50.70398	0.8	ppb
⌈>	Lu-KED2	175	58205.0	0.9			ppb
⌊	Pb-KED2	208	1172297.0	1.0	200.97738	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010S
Sample Date/Time: Wednesday, August 24, 2016 22:04:24
Sample Description: 5
Autosampler Position: 107
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010S.100
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	94074.7	0.7	142.71648	5.2	ppb
|	Cu-KED3	65	47708.5	0.2	142.12412	4.6	ppb
|	Zn-KED3	66	21210.7	1.5	348.73457	6.3	ppb
⌊>	Ge-KED3	72	13376.3	4.7			ppb
⌈>	In-KED2	115	14155.9	1.8			ppb
|	Sb-KED2	121	31282.9	1.5	86.69917	2.5	ppb
⌊	Sb-KED2	123	24888.6	1.3	85.91204	1.6	ppb
⌈>	Lu-KED2	175	58140.4	2.2			ppb
⌊	Pb-KED2	208	2325902.8	1.1	399.32489	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010SD
Sample Date/Time: Wednesday, August 24, 2016 22:07:23
Sample Description: 5
Autosampler Position: 108
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010SD.101
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	101265.1	1.9	153.30457	1.8	ppb
|	Cu-KED3	65	51568.9	1.2	153.32723	0.7	ppb
|	Zn-KED3	66	22098.7	0.7	362.45404	0.9	ppb
⌊>	Ge-KED3	72	13382.9	0.5			ppb
⌈>	In-KED2	115	14326.2	2.0			ppb
|	Sb-KED2	121	31200.0	2.2	85.42489	1.8	ppb
⌊	Sb-KED2	123	24372.5	1.7	83.12212	1.2	ppb
⌈>	Lu-KED2	175	58897.9	2.9			ppb
⌊	Pb-KED2	208	2507746.4	1.3	425.13980	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609300-04
Sample Date/Time: Wednesday, August 24, 2016 22:10:22
Sample Description: 5
Autosampler Position: 109
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609300-04.102
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66065.1	0.7	97.09979	1.8	ppb
|	Cu-KED3	65	34004.4	0.2	98.16021	2.0	ppb
|	Zn-KED3	66	12327.0	0.7	196.26377	2.2	ppb
⌊>	Ge-KED3	72	13786.0	1.8			ppb
⌈>	In-KED2	115	14599.9	1.9			ppb
|	Sb-KED2	121	73240.0	2.7	196.97831	3.8	ppb
⌊	Sb-KED2	123	58642.8	1.8	196.36797	0.2	ppb
⌈>	Lu-KED2	175	57041.3	1.7			ppb
⌊	Pb-KED2	208	1071343.6	0.5	187.43690	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 22:13:24
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.103
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	42.0	8.2	0.02633	14.9	ppb
|	Cu-KED3	65	17.3	12.0	0.00982	58.4	ppb
|	Zn-KED3	66	13.0	20.4	0.08007	52.0	ppb
⌊>	Ge-KED3	72	14335.9	1.6			ppb
⌈>	In-KED2	115	14624.3	2.0			ppb
|	Sb-KED2	121	45.3	13.5	0.00380	444.0	ppb
⌊	Sb-KED2	123	39.5	12.8	0.03688	43.0	ppb
⌈>	Lu-KED2	175	55989.2	1.0			ppb
⌊	Pb-KED2	208	60.0	23.3	0.00664	38.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		106			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		104			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-011
Sample Date/Time: Wednesday, August 24, 2016 22:16:25
Sample Description: 5
Autosampler Position: 110
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-011.104
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26369.0	2.7	39.38632	2.8	ppb
|	Cu-KED3	65	13380.6	1.2	39.24630	0.5	ppb
|	Zn-KED3	66	8243.4	2.4	133.38592	1.7	ppb
⌊>	Ge-KED3	72	13556.4	0.7			ppb
⌈>	In-KED2	115	13275.7	5.6			ppb
|	Sb-KED2	121	987.4	5.0	2.80828	6.9	ppb
⌊	Sb-KED2	123	787.4	1.4	2.81075	4.5	ppb
⌈>	Lu-KED2	175	54200.3	7.1			ppb
⌊	Pb-KED2	208	2369560.4	1.0	437.73514	7.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		93			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-012
Sample Date/Time: Wednesday, August 24, 2016 22:19:24
Sample Description: 5
Autosampler Position: 111
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-012.105
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	19949.3	1.1	29.82367	2.1	ppb
|	Cu-KED3	65	10223.7	0.8	30.01191	1.3	ppb
|	Zn-KED3	66	9508.8	1.1	154.08014	2.3	ppb
⌊>	Ge-KED3	72	13543.1	1.7			ppb
⌈>	In-KED2	115	14321.0	3.9			ppb
|	Sb-KED2	121	254.0	0.8	0.57928	4.5	ppb
⌊	Sb-KED2	123	203.0	4.3	0.59956	8.8	ppb
⌈>	Lu-KED2	175	58192.6	1.8			ppb
⌊	Pb-KED2	208	511287.3	0.3	87.68303	1.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-013
Sample Date/Time: Wednesday, August 24, 2016 22:22:23
Sample Description: 5
Autosampler Position: 112
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-013.106
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25719.8	0.7	38.97129	1.0	ppb
|	Cu-KED3	65	13219.4	2.0	39.33485	1.9	ppb
|	Zn-KED3	66	7966.9	1.3	130.78042	0.7	ppb
⌊>	Ge-KED3	72	13363.2	0.6			ppb
⌈>	In-KED2	115	14385.3	2.6			ppb
|	Sb-KED2	121	234.7	4.7	0.52349	8.8	ppb
⌊	Sb-KED2	123	206.8	4.7	0.60844	5.7	ppb
⌈>	Lu-KED2	175	56610.7	2.7			ppb
⌊	Pb-KED2	208	605984.9	0.9	106.87018	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-014
Sample Date/Time: Wednesday, August 24, 2016 22:25:22
Sample Description: 5
Autosampler Position: 113
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-014.107
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43728.8	0.6	64.23268	1.0	ppb
|	Cu-KED3	65	21905.5	2.5	63.18455	1.9	ppb
|	Zn-KED3	66	10208.3	2.2	162.42701	2.1	ppb
⌊>	Ge-KED3	72	13790.0	1.2			ppb
⌈>	In-KED2	115	14499.4	2.2			ppb
|	Sb-KED2	121	1024.7	2.1	2.65946	4.5	ppb
⌊	Sb-KED2	123	775.6	2.5	2.52278	4.5	ppb
⌈>	Lu-KED2	175	58350.7	3.6			ppb
⌊	Pb-KED2	208	2605137.0	2.1	445.90559	4.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 22:28:23
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.108
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17853.8	2.9	25.01894	2.3	ppb
|	Cu-KED3	65	9449.1	4.7	26.00028	4.0	ppb
|	Zn-KED3	66	1644.8	2.8	24.88640	2.1	ppb
⌊>	Ge-KED3	72	14441.3	1.0			ppb
⌈>	In-KED2	115	15224.3	0.6			ppb
|	Sb-KED2	121	9724.0	1.5	24.97010	2.0	ppb
⌊	Sb-KED2	123	7762.8	2.1	24.84463	1.9	ppb
⌈>	Lu-KED2	175	56381.8	2.5			ppb
⌊	Pb-KED2	208	144512.0	1.1	25.57704	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	104				
|	Zn-KED3	66	100				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		107			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 22:31:22
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.109
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11.3	62.0	-0.01692	58.3	ppb
|	Cu-KED3	65	5.3	21.7	-0.02338	12.8	ppb
|	Zn-KED3	66	5.7	44.4	-0.03194	118.8	ppb
⌊>	Ge-KED3	72	14200.1	2.0			ppb
⌈>	In-KED2	115	15084.0	0.8			ppb
|	Sb-KED2	121	43.3	18.7	-0.00507	435.3	ppb
⌊	Sb-KED2	123	29.7	10.1	0.00141	636.8	ppb
⌈>	Lu-KED2	175	56491.5	0.8			ppb
⌊	Pb-KED2	208	32.0	21.7	0.00158	75.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 22:34:22
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.110
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	156.7	12.8	0.19053	14.8	ppb
|	Cu-KED3	65	80.0	10.2	0.18585	11.8	ppb
|	Zn-KED3	66	70.7	2.9	0.97341	3.4	ppb
⌊>	Ge-KED3	72	14201.7	0.5			ppb
⌈>	In-KED2	115	15178.7	1.8			ppb
|	Sb-KED2	121	70.0	21.6	0.06360	66.5	ppb
⌊	Sb-KED2	123	54.5	13.9	0.08102	33.0	ppb
⌈>	Lu-KED2	175	56225.1	0.9			ppb
⌊	Pb-KED2	208	621.3	4.4	0.10618	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	95				
|	Cu-KED3	65	93				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		107			
|	Sb-KED2	121	64				
⌊	Sb-KED2	123	81				
⌈>	Lu-KED2	175		104			
⌊	Pb-KED2	208	106				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

Preparation Information Benchsheet

Prep Run: 266812
Team: Metals
Analyst: Anna Cheatley

Prep Workflow: MetDigAqMS
Prep Method: EPA CLP-METALS ILM04.0
Rush/NPDES: N/A

Status: Prepped
Current Step: Digestion

Prep Date: 07/21/2016 15:52
Due Date: 08/01/2016
Hold Date: 01/10/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1608449-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1608449-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	88551 172187 172654	Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1608449-03	Duplicate Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	88551 172187 172654	Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608011-007	EB071416	.03	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608207-015	EB071816	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608209-015	EB071916	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608210-015	EB071516	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl

7 Total Samples consisting of 4 Client Samples, 0 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016
k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016

Name	Type	ID	Expires
k-met Sb 5ug/mL Sb	Spike	88551	7/21/2016

Preparation Materials

Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761

Step	Name	ID
Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Corrected Temperature	96	deg C
Digestion	K-BlockDigester-06	Correction Factor	0	deg C
Digestion	K-BlockDigester-06	Observed Temperature 211919567	96	deg C

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Thermometer ID 1108666		NONE
Digestion	K-BlockDigester-06	Thermometer Location	43	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	21-JUL-16 15:52	21-JUL-16 17:52	Anna Cheatley		N	

Comments

HCl lot #53338

Review

Reviewed by: _____ Date: _____

ICP-MS LCSW AND SPIKING SOLUTIONS

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-1

k-met 1/100 QCP-CICV-1

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Al	10000	100
Ag	1250	12.5
Ba	10000	100
Be	250	2.5
Ca	25000	250
Co	2500	25
Cu	1250	12.5
Cr	1000	10
Fe	5000	50
K	25000	250
Mg	25000	250
Mn	2500	25
Na	25000	250
Ni	2500	25
V	2500	25
Zn	2500	25

2.50mL to 500mL Dilution of 1000ppm Sb

k-met 5ug/mL Sb

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Sb	5000	50

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-3

k-met 1/100 QCP-CICV-3

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
As	5000	50
Pb	5000	50
Se	5000	50
Tl	5000	50
Cd	2500	25

2.00mL to 200mL Dilution of 1,000 ppm Mo and 1,000 ppm U

k-met Mo/U 10ppm

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Mo	10000	20
U	10000	20

Preparation Information Benchsheet

Redigest for Zn

Prep Run: 267853
Team: Metals
Analyst: Anna Cheatley
Prep Workflow: MetDigAqMS
Prep Method: EPA CLP-METALS ILM04.0
Rush/NPDES: N/A
Status: Prepped
Current Step: Digestion
Prep Date: 08/04/2016 09:43
Due Date: 08/01/2016
Hold Date: 01/10/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1609201-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-03	Duplicate Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608011-007	EB071416	.03	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608207-015	EB071816	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608209-015	EB071916	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608210-015	EB071516	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608325-014	EB072116	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608344-013	EB072016	.04	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl

9 Total Samples consisting of 6 Client Samples, 0 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016	k-met Sb 5ug/mL Sb	Spike	174317	7/12/2017
k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016				

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761	Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Corrected Temperature	96	deg C	Digestion	K-BlockDigester-06	Thermometer ID 1108666		NONE
Digestion	K-BlockDigester-06	Correction Factor	0	deg C	Digestion	K-BlockDigester-06	Thermometer Location	53	NONE
Digestion	K-BlockDigester-06	Observed Temperature 211919567	96	deg C					

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	04-AUG-16 09:43	04-AUG-16 11:43	Anna Cheatley		N	

Comments

HCl lot #53338

Review

Reviewed by: _____ Date: 8/5/16

Service Request # K1608207
Calibration 080316CMS03
QC in calibration 080316CMS03
QC Service Request # K1608011
STARLIMS run # 508286
Cal Std: MS20-74H ICSA Std: MS20-68H
ICV Std: MS20-74I ICSAB Std: MS20-68I
LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD 5.0 limit?	X	X	
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb. LCSW=142% Zn. See redigest.

Primary Review by _____ Date 8/4/16
Secondary Review by _____ Date 8/5/16

R:\icp\misc\data review forms\6020 DoD Review Checklist

Data Review Form

Service Request #:	**K1608207**
Instrument ID#:	**K-ICP-MS-03**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080316CMS03.csv**
RUNNO:	**508286**

There are no issues to report.

Primary Approver: _____ 9/14/16

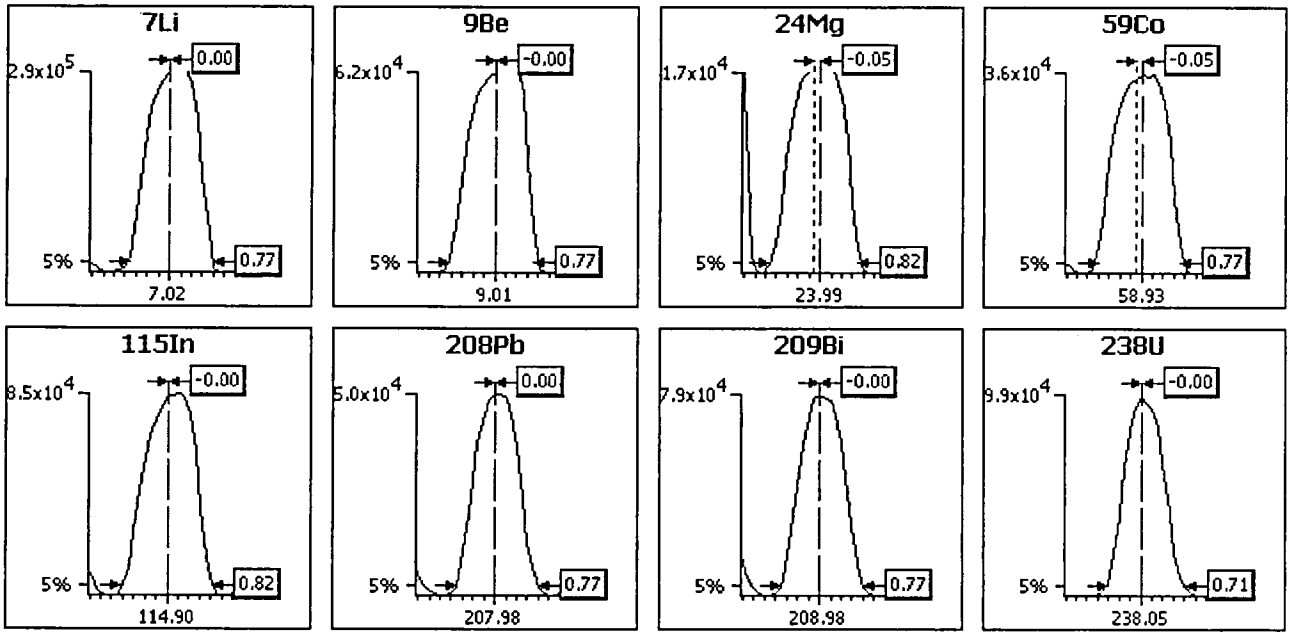
Secondary Approver: _____ 9/15/16

Performance Report

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.77	0.00
9Be	0.90	0.60	0.10	0.77	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.77	-0.05
115In	0.90	0.60	0.10	0.82	-0.00
208Pb	0.90	0.60	0.10	0.77	0.00
209Bi	0.90	0.60	0.10	0.77	-0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	3.8
Focus	23.9
D1	-36.1
Pole Bias	0.4
Hexapole Bias	0.3
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-21.2
Lens 3	-196.1
Forward power	1357
Horizontal	150
Vertical	379
D2	-147
DA	-37.6
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	6:29:00 AM	0.000	284076.95	64021.390	19038.665	37178.368	88721.329	92152.711	1751.419	52817.237
2	6:30:13 AM	0.000	284616.70	64282.221	18790.900	37247.399	88991.702	92036.291	1696.908	53025.444
3	6:31:26 AM	0.000	280053.72	62989.469	18746.809	37270.745	88884.663	92390.355	1683.406	53079.256
4	6:32:38 AM	0.000	282064.47	63422.715	18936.702	37062.395	89291.874	92101.698	1698.909	52955.538
5	6:33:51 AM	0.000	277669.22	62788.334	18622.554	37124.147	89100.005	92354.999	1679.405	53251.258
x		0.000	281696.21	63500.826	18827.126	37176.611	88997.915	92207.211	1702.009	53025.747
σ		0.00	2883.02	643.58	163.07	86.13	215.75	157.08	28.87	159.78
%RSD		0.000	1.023	1.014	0.866	0.232	0.242	0.170	1.696	0.301

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	6:29:00 AM	80875.907	0.000	101610.96
2	6:30:13 AM	81137.977	0.000	101836.97
3	6:31:26 AM	81746.139	0.000	102219.22
4	6:32:38 AM	81748.409	0.000	102459.91
5	6:33:51 AM	81756.733	0.500	102762.54
x		81453.033	0.100	102177.92
σ		417.65	0.22	463.87
%RSD		0.513	223.607	0.454

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	6:29:00 AM	0.019
2	6:30:13 AM	0.018
3	6:31:26 AM	0.018
4	6:32:38 AM	0.018
5	6:33:51 AM	0.018
x		0.0185
σ		0.00
%RSD		1.7799

Result : The performance report passed.

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	ICB1	Unknown	1.000	0	1	1	145
7	CCB1	Unknown	1.000	0	1	1	145
8	LLICVW	Unknown	1.000	0	1	4	145
9	LRSTD	Unknown	1.000	2	1	1	145
10	ICSA	Unknown	1.000	0	1	5	145
11	ICSAB	Unknown	1.000	0	1	6	145
12	KQ1607936-01	Unknown	1.000	1	1	1	145
13	KQ1607936-02	Unknown	1.000	1	1	2	145
14	KQ1607936-03	Unknown	1.000	1	1	3	145
15	K1606832-006	Unknown	1.000	1	1	4	145
16	K1606832-006L	Unknown	1.000	1	1	5	145
17	K1606832-006A	Unknown	1.000	1	1	6	145
18	K1606956-012	Unknown	1.000	1	1	7	145
19	K1607019-010	Unknown	1.000	1	1	8	145
20	K1607034-011	Unknown	1.000	1	1	9	145
21	CCV2	Unknown	1.000	0	1	2	145
22	CCB2	Unknown	1.000	0	1	1	145
23	K1607146-009	Unknown	1.000	1	1	10	145
24	K1607207-006	Unknown	1.000	1	1	11	145
25	K1607266-009	Unknown	1.000	1	1	12	145
26	K1607357-009	Unknown	1.000	1	2	1	145
27	K1607397-009	Unknown	1.000	1	2	2	145
28	K1607580-008	Unknown	1.000	1	2	3	145
29	K1607636-007	Unknown	1.000	1	2	4	145
30	K1607636-008	Unknown	1.000	1	2	5	145
31	K1607675-009	Unknown	1.000	1	2	6	145
32	CCV3	Unknown	1.000	0	1	2	145
33	CCB3	Unknown	1.000	0	1	1	145
34	CCB3	Unknown	1.000	0	1	1	145
35	LLCCVW1	Unknown	1.000	0	1	4	145
36	KQ1608449-01	Unknown	1.000	1	2	7	145
37	KQ1608449-02	Unknown	1.000	1	2	8	145
38	KQ1608449-03	Unknown	1.000	1	2	9	145
39	K1608011-007	Unknown	1.000	1	2	10	145
40	K1608011-007L	Unknown	1.000	1	2	11	145
41	K1608011-007A	Unknown	1.000	1	2	12	145
42	K1608207-015	Unknown	1.000	1	3	1	145
43	K1608209-015	Unknown	1.000	1	3	2	145
44	K1608210-015	Unknown	1.000	1	3	3	145
45	CCV4	Unknown	1.000	0	1	2	145
46	CCB4	Unknown	1.000	0	1	1	145
47	CCB4	Unknown	1.000	0	1	1	145
48	KQ1609039-01	Unknown	1.000	1	3	4	145
49	KQ1609039-02	Unknown	1.000	1	3	5	145
50	KQ1609039-02	Unknown	1.000	1	3	6	145
51	K1608325-014	Unknown	1.000	1	3	7	145
52	K1608325-014L	Unknown	1.000	1	3	8	145
53	K1608325-014A	Unknown	1.000	1	3	9	145
54	K1608344-013	Unknown	1.000	1	3	10	145
55	CCV5	Unknown	1.000	0	1	2	145
56	CCB5	Unknown	1.000	0	1	1	145
57	LLCCVW2	Unknown	1.000	0	1	4	145

009276

11/01/2018

Dilution Corrected Concentrations

Cal Blk 8/3/2016 11:58:52 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	101.9%	0.0033	100.9%	0.0110	0.0165	0.0029	-0.0040	0.0068
2	11:59:28	98.6%	-0.0006	100.2%	-0.0021	-0.0116	-0.0015	0.0074	0.0091
3	12:00:05	99.6%	-0.0028	99.0%	-0.0089	-0.0050	-0.0014	-0.0034	-0.0159
x		100.0%	-0.0000	100.0%	0.0000	0.0000	0.0000	-0.0000	0.0000
σ		1.7%	0.0031	1.0%	0.0101	0.0147	0.0025	0.0064	0.0138
%RSD		1.7	0.0000	1.0	0.0000	0.0000	0.0000	0.0000	0.0000
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	-0.0095	0.0198	99.4%	-0.0339	0.0192	0.0854	-0.0948	99.6%
2	11:59:28	0.0018	0.0023	100.2%	0.0235	0.0162	0.0155	0.0940	100.4%
3	12:00:05	0.0077	-0.0221	100.4%	0.0104	-0.0355	-0.1009	0.0008	100.0%
x		0.0000	-0.0000	100.0%	0.0000	0.0000	-0.0000	-0.0000	100.0%
σ		0.0088	0.0210	0.5%	0.0300	0.0308	0.0941	0.0944	0.4%
%RSD		0.0000	0.0000	0.5	0.0000	0.0000	0.0000	0.0000	0.4
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	11:58:52	99.0%	-0.0006	-0.0037	98.6%	0.0007	0.0006	0.0001	
2	11:59:28	100.3%	-0.0006	0.0055	100.2%	-0.0003	0.0007	0.0000	
3	12:00:05	100.7%	0.0012	-0.0018	101.1%	-0.0003	-0.0013	-0.0001	
x		100.0%	-0.0000	-0.0000	100.0%	0.0000	-0.0000	0.0000	
σ		0.9%	0.0011	0.0049	1.3%	0.0006	0.0011	0.0001	
%RSD		0.9	0.0000	0.0000	1.3	0.0000	0.0000	0.0000	

Cal. Stn 8/3/2016 12:05:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	99.7%	25.4212	101.4%	24.8380	25.1333	25.4232	25.2951	25.0170
2	12:06:13	94.9%	25.1251	97.9%	25.1084	24.6147	24.6884	25.0301	24.8387
3	12:06:49	96.1%	24.4537	96.2%	25.0537	25.2520	24.8884	24.6747	25.1443
x		96.9%	25.0000	98.5%	25.0000	25.0000	25.0000	25.0000	25.0000
σ		2.5%	0.4957	2.7%	0.1430	0.3389	0.3799	0.3113	0.1535
%RSD		2.5	1.9828	2.7	0.5718	1.3555	1.5195	1.2452	0.6139
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	26.0129	25.0250	99.2%	25.2220	25.3365	25.7518	25.1408	99.6%
2	12:06:13	24.3553	25.0889	101.0%	24.8849	25.3583	24.3936	25.5295	99.9%
3	12:06:49	24.6318	24.8861	100.6%	24.8931	24.3052	24.8546	24.3297	99.8%
x		25.0000	25.0000	100.3%	25.0000	25.0000	25.0000	25.0000	99.8%
σ		0.8880	0.1037	0.9%	0.1923	0.6018	0.6907	0.6121	0.1%
%RSD		3.5520	0.4146	0.9	0.7692	2.4071	2.7626	2.4485	0.1
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	12:05:36	100.4%	24.8686	24.7840	100.2%	25.0324	25.1190	25.0564	
2	12:06:13	100.4%	25.1052	25.1796	102.3%	25.0025	24.8978	25.0032	
3	12:06:49	101.2%	25.0262	25.0364	103.1%	24.9651	24.9832	24.9404	
x		100.7%	25.0000	25.0000	101.8%	25.0000	25.0000	25.0000	
σ		0.5%	0.1205	0.2003	1.5%	0.0337	0.1115	0.0581	
%RSD		0.5	0.4819	0.8011	1.5	0.1350	0.4462	0.2323	

ICV1 8/3/2016 12:08:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	100.1%	2.5523	100.4%	25.1690	24.7591	12.3264	12.1984	24.5557
2	12:09:28	93.3%	2.6073	98.3%	25.4122	25.2363	12.6465	12.6558	25.6487
3	12:10:05	95.5%	2.5233	98.0%	24.8719	24.8466	12.3458	12.4137	25.3729
x		96.3%	2.5610	98.9%	25.1510	24.9474	12.4396	12.4226	25.1924
σ		3.4%	0.0427	1.3%	0.2706	0.2541	0.1795	0.2288	0.5684
%RSD		3.6	1.6657	1.3	1.0759	1.0184	1.4429	1.8418	2.2562

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	28.2358	27.5655	100.2%	25.0311	24.9594	25.1245	25.4640	99.2%
2	12:09:28	28.2388	27.5751	99.8%	25.0224	25.9091	25.7493	25.4659	99.6%
3	12:10:05	28.8693	28.2665	98.7%	25.2677	25.6252	25.8031	25.2063	100.3%
x		28.4479	27.8023	99.6%	25.1071	25.4979	25.5590	25.3787	99.7%
σ		0.3649	0.4020	0.8%	0.1392	0.4875	0.3772	0.1493	0.6%
%RSD		1.2826	1.4459	0.8	0.5544	1.9118	1.4760	0.5883	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	99.1%	26.4095	26.3179	100.9%	24.6743	25.3301	25.0655
2	12:09:28	100.3%	26.2787	26.2682	102.8%	24.6864	25.2792	25.0687
3	12:10:05	101.3%	25.9541	25.7546	102.7%	25.0059	25.7189	25.3189
x		100.3%	26.2141	26.1136	102.1%	24.7888	25.4427	25.1510
σ		1.1%	0.2345	0.3118	1.1%	0.1880	0.2405	0.1454
%RSD		1.1	0.8945	1.1942	1.1	0.7586	0.9454	0.5782

CCV1 8/3/2016 12:13:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	103.0%	24.5929	98.8%	25.3563	25.2254	25.0767	25.1933	25.4099
2	12:13:38	103.0%	24.3963	98.7%	25.0314	24.7119	24.7451	24.8955	25.0414
3	12:14:15	102.4%	23.9763	100.4%	25.0682	24.9721	24.6158	24.9420	25.0767
x		102.8%	24.3218	99.3%	25.1520	24.9698	24.8126	25.0103	25.1760
σ		0.4%	0.3150	0.9%	0.1779	0.2567	0.2377	0.1602	0.2033
%RSD		0.4	1.2949	0.9	0.7074	1.0282	0.9581	0.6405	0.8075

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	25.4262	24.8912	99.3%	25.4798	23.6658	25.4510	24.5424	99.8%
2	12:13:38	24.5112	24.8600	100.6%	24.0787	24.6866	25.0870	23.8752	100.9%
3	12:14:15	24.3309	25.4203	98.5%	25.1746	24.8341	24.4187	24.7232	100.4%
x		24.7561	25.0571	99.5%	24.9110	24.3955	24.9856	24.3803	100.4%
σ		0.5873	0.3149	1.1%	0.7368	0.6362	0.5236	0.4467	0.6%
%RSD		2.3722	1.2566	1.1	2.9576	2.6080	2.0955	1.8320	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	100.1%	24.8115	24.6011	100.4%	24.7936	24.7451	24.9171
2	12:13:38	101.0%	25.0560	24.7475	101.5%	24.8937	24.8532	24.9575
3	12:14:15	100.2%	25.1360	25.1246	102.0%	25.0731	24.9676	25.0217
x		100.5%	25.0012	24.8244	101.3%	24.9201	24.8553	24.9654
σ		0.5%	0.1691	0.2701	0.8%	0.1416	0.1112	0.0527
%RSD		0.5	0.6763	1.0879	0.8	0.5683	0.4475	0.2111

ICB1 8/3/2016 12:20:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	107.2%	0.0001	102.1%	0.0024	0.0081	0.0038	0.0063	0.0098
2	12:21:22	107.0%	0.0116	101.2%	0.0120	0.0280	0.0161	0.0073	0.0153
3	12:21:58	110.3%	0.0141	102.1%	0.0067	0.0243	0.0170	0.0137	0.0156
x		108.2%	0.0086	101.8%	0.0070	0.0201	0.0123	0.0091	0.0136
σ		1.8%	0.0075	0.5%	0.0048	0.0106	0.0074	0.0040	0.0033
%RSD		1.7	86.8181	0.5	68.3704	52.7547	59.9918	44.4749	24.2204

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	0.0265	-0.0084	99.0%	-0.0611	0.0981	0.3953	-0.1333	100.0%
2	12:21:22	-0.0401	0.0044	100.5%	-0.0429	0.0278	-0.1792	-0.1701	100.8%
3	12:21:58	-0.0060	0.0078	102.1%	-0.0233	-0.0526	-0.0332	-0.1967	100.5%
x		-0.0065	0.0013	100.6%	-0.0424	0.0244	0.0610	-0.1667	100.4%
σ		0.0333	0.0086	1.6%	0.0189	0.0754	0.2986	0.0318	0.4%
%RSD		508.7854	668.2865	1.6	44.5559	308.7781	489.9042	19.1051	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	99.4%	0.0179	0.0213	97.2%	0.0014	0.0025	0.0007
2	12:21:22	100.0%	0.0339	0.0349	99.2%	0.0116	0.0140	0.0109
3	12:21:58	99.9%	0.0347	0.0363	99.3%	0.0158	0.0137	0.0139
x		99.8%	0.0288	0.0308	98.6%	0.0096	0.0101	0.0085
σ		0.3%	0.0095	0.0083	1.2%	0.0074	0.0066	0.0069
%RSD		0.3	32.7875	26.9649	1.2	76.9747	65.4806	81.1057

ICB1 8/3/2016 12:24:59 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	110.6%	0.0026	99.8%	-0.0074	0.0298	0.0063	0.0056	0.0190
2	12:25:35	108.8%	0.0004	100.5%	0.0063	0.0006	0.0050	0.0081	0.0159
3	12:26:12	102.2%	0.0017	99.0%	-0.0033	0.0089	0.0097	0.0088	0.0048
x		107.2%	0.0016	99.7%	-0.0015	0.0131	0.0070	0.0075	0.0132
σ		4.4%	0.0011	0.8%	0.0070	0.0150	0.0025	0.0017	0.0075
%RSD		4.1	70.5814	0.8	471.6372	114.5867	35.3464	22.8026	56.7756

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	0.0021	0.0154	100.0%	0.0058	0.1201	0.4180	0.1044	100.4%
2	12:25:35	0.0019	0.0063	100.1%	-0.0597	0.0417	-0.1792	-0.1886	101.4%
3	12:26:12	-0.0335	-0.0012	99.9%	0.0009	-0.0223	-0.0222	-0.0466	101.5%
x		-0.0099	0.0068	100.0%	-0.0177	0.0465	0.0722	-0.0436	101.1%
σ		0.0205	0.0083	0.1%	0.0365	0.0713	0.3096	0.1465	0.6%
%RSD		207.6824	121.3553	0.1	206.5850	153.3237	428.9475	336.0915	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	99.6%	0.0047	0.0058	98.3%	0.0052	0.0034	0.0032
2	12:25:35	100.0%	0.0117	0.0142	99.9%	0.0039	0.0050	0.0048
3	12:26:12	100.8%	0.0110	0.0155	100.7%	0.0058	0.0080	0.0055
x		100.2%	0.0091	0.0118	99.7%	0.0050	0.0055	0.0045
σ		0.6%	0.0038	0.0053	1.2%	0.0010	0.0023	0.0012
%RSD		0.6	42.0297	44.6646	1.2	19.5712	42.3099	26.4761

CCB1 8/3/2016 12:28:29 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	111.0%	0.0071	101.7%	-0.0070	0.0514	0.0033	0.0079	0.0212
2	12:29:06	105.3%	0.0042	100.4%	0.0085	-0.0057	0.0022	0.0035	0.0109
3	12:29:42	103.8%	0.0007	99.8%	0.0077	0.0216	0.0067	-0.0003	0.0087
x		106.7%	0.0040	100.6%	0.0031	0.0225	0.0041	0.0037	0.0136
σ		3.8%	0.0032	1.0%	0.0088	0.0285	0.0024	0.0041	0.0067
%RSD		3.6	79.2905	1.0	285.9216	127.1398	58.4338	111.1530	48.9774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	0.0015	0.0123	100.3%	-0.0149	-0.0094	-0.0782	-0.0558	100.0%
2	12:29:06	-0.0042	-0.0016	100.3%	-0.0363	0.1562	0.0573	0.0007	101.8%
3	12:29:42	-0.0519	0.0286	100.7%	0.0115	-0.0623	-0.0714	-0.0370	100.7%
x		-0.0182	0.0131	100.4%	-0.0132	0.0282	-0.0308	-0.0307	100.8%
σ		0.0293	0.0151	0.3%	0.0239	0.1140	0.0763	0.0288	0.9%
%RSD		160.8221	115.6262	0.3	180.8062	404.6443	248.0252	93.8789	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	99.7%	-0.0017	0.0016	98.6%	0.0018	0.0044	0.0024
2	12:29:06	101.1%	0.0070	0.0051	100.3%	0.0010	0.0030	0.0029
3	12:29:42	100.9%	0.0071	0.0073	100.9%	0.0049	0.0060	0.0041
x		100.6%	0.0041	0.0047	99.9%	0.0026	0.0045	0.0031
σ		0.7%	0.0051	0.0029	1.2%	0.0021	0.0015	0.0008
%RSD		0.7	122.8286	61.8019	1.2	80.4608	33.1447	27.1193

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	105.5%	0.0214	99.4%	0.1749	0.1826	0.0967	0.0995	0.4898
2	12:32:36	104.4%	0.0205	98.9%	0.1729	0.1699	0.1010	0.1020	0.4672
3	12:33:13	100.1%	0.0262	97.4%	0.1729	0.1709	0.0914	0.1012	0.4605
x		103.3%	0.0227	98.6%	0.1736	0.1745	0.0964	0.1009	0.4725
σ		2.9%	0.0031	1.0%	0.0011	0.0071	0.0048	0.0013	0.0154
%RSD		2.8	13.5714	1.1	0.6617	4.0485	5.0033	1.2780	3.2514

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	0.3191	0.4826	99.6%	0.5424	1.1331	1.1067	1.1845	99.2%
2	12:32:36	0.4231	0.5021	99.2%	0.5253	1.0036	1.1257	0.9504	101.2%
3	12:33:13	0.6294	0.4790	99.1%	0.4133	0.9666	0.7446	0.7906	100.8%
x		0.4572	0.4879	99.3%	0.4937	1.0344	0.9923	0.9752	100.4%
σ		0.1579	0.0124	0.3%	0.0701	0.0874	0.2147	0.1981	1.0%
%RSD		34.5465	2.5491	0.3	14.2022	8.4527	21.6389	20.3127	1.0

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	99.4%	0.0491	0.0517	98.2%	0.0228	0.0191	0.0219
2	12:32:36	100.9%	0.0556	0.0511	100.3%	0.0183	0.0156	0.0188
3	12:33:13	100.2%	0.0450	0.0506	101.1%	0.0194	0.0199	0.0203
x		100.2%	0.0499	0.0511	99.9%	0.0202	0.0182	0.0203
σ		0.8%	0.0053	0.0006	1.5%	0.0024	0.0023	0.0016
%RSD		0.8	10.6827	1.0801	1.5	11.7732	12.6217	7.6566

LRSTD 8/3/2016 12:35:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	101.6%	204.6970	97.7%	196.8791	199.3838	202.7716	202.3057	214.8368
2	12:36:03	99.4%	196.6304	96.7%	201.8646	196.0216	205.1825	202.5141	214.2862
3	12:36:40	94.0%	208.8669	94.0%	199.4093	197.9521	204.4202	202.3690	215.4034
x		98.3%	203.3981	96.1%	199.3843	197.7858	204.1248	202.3963	214.8422
σ		3.9%	6.2208	1.9%	2.4928	1.6872	1.2323	0.1068	0.5586
%RSD		4.0	3.0584	2.0	1.2503	0.8531	0.6037	0.0528	0.2600

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	211.0382	208.7631	98.1%	213.5307	218.0449	219.4838	222.4606	99.3%
2	12:36:03	209.1400	208.0922	98.1%	212.9448	217.7150	224.0242	221.9674	99.7%
3	12:36:40	208.3781	210.3120	98.8%	211.0625	213.6693	220.4988	217.5610	99.2%
x		209.5188	209.0557	98.3%	212.5127	216.4764	221.3356	220.6630	99.4%
σ		1.3699	1.1385	0.4%	1.2896	2.4366	2.3831	2.6977	0.3%
%RSD		0.6538	0.5446	0.4	0.6068	1.1256	1.0767	1.2226	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	105.9%	201.4358	199.6222	100.9%	204.9497	204.0435	207.6721
2	12:36:03	105.4%	203.0798	201.2665	102.6%	204.3710	201.9004	206.6079
3	12:36:40	105.8%	201.5785	200.9491	102.7%	204.9323	204.0668	208.2962
x		105.7%	202.0314	200.6126	102.1%	204.7510	203.3369	207.5254
σ		0.2%	0.9108	0.8723	1.0%	0.3292	1.2441	0.8536
%RSD		0.2	0.4508	0.4348	1.0	0.1608	0.6118	0.4113

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	101.6%	0.0188	95.9%	1.2822	1.5791	3.1617	2.3884	2.0381
2	12:43:38	101.5%	0.0375	94.7%	1.3082	1.6755	3.1430	2.4570	2.0142
3	12:44:15	98.1%	0.0282	95.6%	1.3499	1.6744	3.1174	2.2806	2.1554
x		100.4%	0.0282	95.4%	1.3134	1.6430	3.1407	2.3754	2.0692
σ		2.0%	0.0094	0.7%	0.0341	0.0553	0.0222	0.0889	0.0755
%RSD		2.0	33.3335	0.7	2.5976	3.3676	0.7080	3.7433	3.6502

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	4.3331	1.8773	92.0%	-0.0882	1.5635	-0.2048	-0.5576	88.1%
2	12:43:38	4.3893	1.9567	94.0%	-0.1832	1.5918	-0.2664	-0.9274	90.2%
3	12:44:15	4.7103	1.8253	95.2%	-0.2088	1.7615	0.1393	-0.8771	90.8%
x		4.4776	1.8864	93.7%	-0.1601	1.6389	-0.1106	-0.7873	89.7%
σ		0.2035	0.0661	1.6%	0.0635	0.1071	0.2186	0.2005	1.4%
%RSD		4.5446	3.5066	1.7	39.6931	6.5335	197.5957	25.4691	1.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	90.8%	0.0496	0.0463	91.8%	0.1579	0.1497	0.1512
2	12:43:38	93.1%	0.0637	0.0737	93.8%	0.1782	0.1683	0.1738
3	12:44:15	93.4%	0.0592	0.0580	94.5%	0.1824	0.1719	0.1738
x		92.4%	0.0575	0.0594	93.4%	0.1728	0.1633	0.1663
σ		1.4%	0.0072	0.0137	1.4%	0.0131	0.0119	0.0131
%RSD		1.5	12.5572	23.1478	1.5	7.5856	7.2761	7.8685

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	107.3%	0.0179	97.6%	50.0934	50.2985	49.8108	48.3987	27.2011
2	12:47:26	103.7%	0.0321	98.0%	49.2970	49.3955	48.2700	47.3286	26.4547
3	12:48:02	97.9%	0.0334	95.5%	49.9994	49.8824	48.2139	47.4552	26.5532
x		103.0%	0.0278	97.0%	49.7966	49.8588	48.7649	47.7275	26.7363
σ		4.7%	0.0086	1.3%	0.4352	0.4520	0.9062	0.5847	0.4055
%RSD		4.6	30.9751	1.4	0.8740	0.9065	1.8583	1.2251	1.5168

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	27.7560	25.1930	95.1%	25.0432	25.8661	23.9499	23.6767	91.8%
2	12:47:26	27.2295	25.7721	96.2%	24.3613	25.2792	23.0851	23.5271	91.3%
3	12:48:02	27.3969	25.4775	95.0%	24.0746	26.2777	24.2956	23.4515	92.2%
x		27.4608	25.4809	95.4%	24.4930	25.8077	23.7769	23.5518	91.8%
σ		0.2690	0.2896	0.7%	0.4975	0.5018	0.6235	0.1146	0.5%
%RSD		0.9794	1.1365	0.7	2.0313	1.9444	2.6225	0.4867	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	94.4%	0.0336	0.0286	95.5%	0.1365	0.1287	0.1311
2	12:47:26	96.0%	0.0439	0.0453	97.7%	0.1486	0.1434	0.1419
3	12:48:02	95.7%	0.0410	0.0388	98.3%	0.1429	0.1363	0.1374
x		95.4%	0.0395	0.0376	97.1%	0.1427	0.1361	0.1368
σ		0.8%	0.0053	0.0084	1.5%	0.0060	0.0073	0.0054
%RSD		0.9	13.4781	22.3689	1.5	4.2366	5.3721	3.9381

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	102.3%	0.0025	98.3%	-0.0029	0.0450	0.0188	0.0157	-0.0137
2	12:51:06	99.2%	0.0130	95.1%	0.0023	0.0585	0.0305	0.0244	0.0029
3	12:51:43	99.7%	0.0078	96.3%	-0.0026	0.0754	0.0254	0.0139	-0.0008
x		100.4%	0.0078	96.6%	-0.0011	0.0596	0.0249	0.0180	-0.0039
σ		1.7%	0.0052	1.6%	0.0029	0.0152	0.0059	0.0056	0.0087
%RSD		1.7	67.5617	1.7	270.5133	25.4882	23.6067	31.2875	226.5048

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	0.0516	-0.0247	98.8%	0.0098	1.8396	-0.2022	0.0993	98.0%
2	12:51:06	0.0055	-0.0100	97.2%	0.0502	1.4686	-0.4213	0.0789	98.7%
3	12:51:43	0.0181	-0.0110	96.6%	0.0295	1.6547	-0.0033	0.0010	97.6%
x		0.0251	-0.0152	97.5%	0.0298	1.6543	-0.2089	0.0597	98.1%
σ		0.0238	0.0082	1.1%	0.0202	0.1855	0.2091	0.0519	0.5%
%RSD		95.0914	53.9854	1.2	67.6269	11.2146	100.0691	86.8512	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	97.7%	-0.0027	-0.0013	100.1%	0.0081	0.0070	0.0070
2	12:51:06	98.3%	0.0034	0.0040	101.8%	0.0096	0.0106	0.0086
3	12:51:43	98.5%	0.0036	0.0040	102.2%	0.0079	0.0093	0.0093
x		98.1%	0.0015	0.0022	101.4%	0.0085	0.0090	0.0083
σ		0.4%	0.0036	0.0031	1.1%	0.0010	0.0018	0.0012
%RSD		0.4	242.7339	136.9929	1.1	11.3145	19.9029	13.8756

KQ1607936-02 8/3/2016 1:06:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	105.3%	2.4012	97.2%	25.4300	25.7931	12.6477	12.7929	25.5417
2	13:06:40	101.2%	2.4695	96.0%	25.4468	25.3819	12.6981	12.9161	25.6474
3	13:07:17	94.7%	2.6176	95.5%	25.1108	25.1650	12.6703	12.6215	25.3035
x		100.4%	2.4961	96.2%	25.3292	25.4467	12.6720	12.7769	25.4975
σ		5.4%	0.1106	0.9%	0.1893	0.3190	0.0253	0.1479	0.1761
%RSD		5.4	4.4322	0.9	0.7475	1.2536	0.1993	1.1577	0.6907

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	29.5367	27.8183	98.1%	50.3137	51.2640	50.5695	49.4048	98.4%
2	13:06:40	30.0013	28.0722	97.3%	51.4177	50.9710	51.6469	50.3160	99.7%
3	13:07:17	29.0291	28.0459	98.1%	50.5450	51.2706	50.0453	48.4183	98.3%
x		29.5224	27.9788	97.8%	50.7588	51.1685	50.7539	49.3797	98.8%
σ		0.4863	0.1396	0.4%	0.5822	0.1711	0.8166	0.9491	0.8%
%RSD		1.6471	0.4990	0.4	1.1470	0.3344	1.6089	1.9221	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	98.1%	50.7364	50.5130	101.5%	50.2519	51.6037	50.9776
2	13:06:40	99.7%	50.7681	50.1603	102.7%	50.4259	51.9127	51.3935
3	13:07:17	98.2%	51.6057	51.1017	102.9%	50.6085	52.2601	51.7411
x		98.7%	51.0367	50.5917	102.4%	50.4288	51.9255	51.3707
σ		0.9%	0.4930	0.4756	0.7%	0.1783	0.3284	0.3823
%RSD		0.9	0.9660	0.9401	0.7	0.3535	0.6324	0.7441

KQ1607936-03 8/3/2016 1:10:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	95.0%	2.5619	95.9%	26.0268	25.4634	12.7333	12.8741	25.7640
2	13:10:38	94.0%	2.5442	96.3%	25.5635	25.3786	12.6549	12.7855	26.2329
3	13:11:15	91.4%	2.5815	94.4%	25.4087	25.1575	12.7694	12.6487	25.6944
x		93.5%	2.5625	95.5%	25.6663	25.3331	12.7192	12.7695	25.8971
σ		1.8%	0.0187	1.0%	0.3216	0.1579	0.0586	0.1135	0.2929
%RSD		2.0	0.7279	1.0	1.2531	0.6234	0.4605	0.8892	1.1310

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	29.3930	28.5213	97.0%	51.2213	52.3733	48.9912	51.8164	98.6%
2	13:10:38	29.7539	28.5697	96.2%	51.2684	52.0815	50.2762	49.8779	98.0%
3	13:11:15	28.8391	28.3598	96.9%	51.7714	51.1347	48.6731	52.3780	98.5%
x		29.3287	28.4836	96.7%	51.4204	51.8632	49.3135	51.3574	98.4%
σ		0.4608	0.1099	0.4%	0.3049	0.6475	0.8487	1.3117	0.3%
%RSD		1.5711	0.3859	0.4	0.5929	1.2485	1.7211	2.5540	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	98.3%	51.6857	51.1157	101.1%	50.9121	52.2340	51.8083
2	13:10:38	99.1%	51.6491	51.2691	103.2%	50.7410	52.2848	51.7386
3	13:11:15	99.3%	51.9209	51.4271	102.6%	51.2400	52.7772	52.1288
x		98.9%	51.7519	51.2706	102.3%	50.9644	52.4320	51.8919
σ		0.5%	0.1475	0.1557	1.1%	0.2536	0.3000	0.2081
%RSD		0.5	0.2850	0.3037	1.1	0.4975	0.5722	0.4011

K1606832-006 8/3/2016 1:14:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.7%	0.0026	94.9%	0.0341	0.0555	0.0838	0.0925	1.2994
2	13:15:32	95.6%	-0.0008	93.3%	0.0434	0.0808	0.0920	0.0932	1.3435
3	13:16:09	98.6%	0.0012	93.6%	0.0474	0.0723	0.1028	0.0945	1.2021
x		97.0%	0.0010	93.9%	0.0416	0.0695	0.0929	0.0934	1.2817
σ		1.5%	0.0017	0.8%	0.0068	0.0129	0.0096	0.0010	0.0723
%RSD		1.6	174.3820	0.9	16.2806	18.4912	10.2963	1.0567	5.6436

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	1.3125	1.1663	95.8%	0.0330	1.8212	-0.3612	0.0322	96.2%
2	13:15:32	1.3162	1.1964	96.3%	0.0359	1.7280	-0.1651	0.0914	97.1%
3	13:16:09	1.1767	1.2310	94.9%	0.0173	1.9458	-0.2334	-0.0072	96.6%
x		1.2684	1.1979	95.7%	0.0287	1.8317	-0.2533	0.0388	96.6%
σ		0.0795	0.0324	0.7%	0.0100	0.1093	0.0995	0.0496	0.5%
%RSD		6.2666	2.7064	0.8	34.8797	5.9655	39.3030	127.9914	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.2%	0.0152	0.0168	97.8%	0.0311	0.0269	0.0279
2	13:15:32	96.8%	0.0216	0.0182	99.0%	0.0318	0.0332	0.0299
3	13:16:09	95.9%	0.0211	0.0168	99.7%	0.0309	0.0316	0.0324
x		96.3%	0.0193	0.0173	98.9%	0.0312	0.0306	0.0301
σ		0.5%	0.0035	0.0008	1.0%	0.0005	0.0033	0.0023
%RSD		0.5	18.3656	4.6145	1.0	1.5558	10.6389	7.6294

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	105.5%	0.0015	94.6%	-0.0014	0.0012	0.0180	0.0234	0.2083
2	13:19:06	98.6%	0.0007	96.0%	-0.0132	0.0061	0.0165	0.0240	0.2564
3	13:19:43	97.2%	0.0030	96.2%	-0.0033	-0.0153	0.0211	0.0021	0.2383
x		100.4%	0.0017	95.6%	-0.0060	-0.0027	0.0186	0.0165	0.2343
σ		4.4%	0.0012	0.8%	0.0063	0.0112	0.0024	0.0125	0.0243
%RSD		4.4	67.1444	0.9	106.1766	420.4207	12.6811	75.8328	10.3608

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	0.2409	0.2264	96.6%	0.1141	0.2841	-0.2150	0.2385	96.2%
2	13:19:06	0.2969	0.2335	98.0%	0.0442	0.4606	-0.1752	0.1882	96.9%
3	13:19:43	0.1546	0.2749	96.2%	0.0019	0.4979	-0.1567	0.0904	97.8%
x		0.2308	0.2449	96.9%	0.0534	0.4142	-0.1823	0.1724	96.9%
σ		0.0717	0.0262	0.9%	0.0566	0.1142	0.0298	0.0753	0.8%
%RSD		31.0668	10.6856	1.0	106.0825	27.5687	16.3219	43.6889	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	96.5%	-0.0131	-0.0083	96.7%	0.0093	0.0059	0.0078
2	13:19:06	97.8%	-0.0077	-0.0049	99.0%	0.0101	0.0095	0.0081
3	13:19:43	97.7%	-0.0072	-0.0075	99.8%	0.0099	0.0119	0.0096
x		97.4%	-0.0093	-0.0069	98.5%	0.0097	0.0091	0.0085
σ		0.7%	0.0033	0.0018	1.6%	0.0004	0.0030	0.0010
%RSD		0.7	35.2388	25.9221	1.6	4.4386	33.2716	11.2575

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	99.2%	20.4433	96.8%	21.1936	21.0694	21.2988	21.4634	22.3573
2	13:22:40	98.9%	20.2169	92.0%	21.8326	21.3973	21.5108	21.4226	22.3424
3	13:23:17	99.1%	20.1481	95.6%	21.2707	21.1500	21.2476	20.9309	22.5631
x		99.1%	20.2694	94.8%	21.4323	21.2055	21.3524	21.2723	22.4209
σ		0.2%	0.1545	2.5%	0.3488	0.1709	0.1395	0.2964	0.1233
%RSD		0.2	0.7621	2.7	1.6275	0.8059	0.6534	1.3932	0.5501

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	22.5175	22.2216	96.0%	21.1216	22.2181	20.4610	21.6878	96.2%
2	13:22:40	22.3645	22.2692	96.4%	21.0818	22.6540	20.4815	20.6758	96.2%
3	13:23:17	21.6850	21.9754	95.7%	21.2072	21.7388	19.4586	20.9449	96.6%
x		22.1890	22.1554	96.0%	21.1369	22.2036	20.1337	21.1028	96.4%
σ		0.4431	0.1577	0.4%	0.0641	0.4578	0.5847	0.5242	0.2%
%RSD		1.9970	0.7117	0.4	0.3031	2.0617	2.9042	2.4838	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	97.2%	21.4180	21.3357	98.5%	21.2632	21.1367	21.1585
2	13:22:40	96.3%	21.7266	21.6745	100.7%	21.1525	21.1633	21.2366
3	13:23:17	97.2%	21.5013	21.5065	100.0%	21.3760	21.3954	21.4088
x		96.9%	21.5486	21.5056	99.8%	21.2639	21.2318	21.2680
σ		0.5%	0.1596	0.1694	1.1%	0.1117	0.1423	0.1280
%RSD		0.5	0.7408	0.7877	1.1	0.5253	0.6700	0.6020

K1606956-012 8/3/2016 1:25:52 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	99.5%	0.0096	94.7%	0.1052	0.0923	0.1495	0.1523	1.2404
2	13:26:29	90.0%	0.0186	93.0%	0.1238	0.1109	0.1700	0.1785	1.1736
3	13:27:06	90.9%	0.0092	93.0%	0.0989	0.0953	0.1575	0.1547	1.2130
x		93.5%	0.0124	93.6%	0.1093	0.0995	0.1590	0.1618	1.2090
σ		5.2%	0.0054	1.0%	0.0130	0.0100	0.0103	0.0145	0.0336
%RSD		5.6	43.0305	1.1	11.8497	10.0192	6.5060	8.9429	2.7774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	1.1149	1.2133	95.7%	0.1412	1.6068	-0.3806	0.1715	96.5%
2	13:26:29	1.0217	1.1553	95.4%	0.0321	2.0865	-0.2696	0.1732	96.0%
3	13:27:06	1.1759	1.1377	95.1%	-0.0166	2.0111	-0.3613	-0.1070	96.2%
x		1.1042	1.1688	95.4%	0.0522	1.9015	-0.3372	0.0793	96.2%
σ		0.0776	0.0396	0.3%	0.0808	0.2580	0.0593	0.1613	0.2%
%RSD		7.0296	3.3879	0.3	154.7012	13.5669	17.5914	203.4871	0.2

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	94.8%	0.0103	0.0106	97.7%	0.0700	0.0694	0.0693
2	13:26:29	95.0%	0.0210	0.0178	99.3%	0.0792	0.0804	0.0784
3	13:27:06	95.7%	0.0123	0.0106	99.7%	0.0714	0.0722	0.0719
x		95.2%	0.0145	0.0130	98.9%	0.0735	0.0740	0.0732
σ		0.4%	0.0057	0.0041	1.1%	0.0050	0.0057	0.0047
%RSD		0.5	39.2414	31.8788	1.1	6.7977	7.7116	6.4348

K1607019-010 8/3/2016 1:29:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	96.3%	0.0035	94.2%	0.1593	0.1657	0.1542	0.1753	1.3872
2	13:30:19	96.2%	0.0027	92.3%	0.1589	0.1450	0.1548	0.1583	1.4792
3	13:30:56	91.8%	0.0072	93.3%	0.1815	0.1338	0.1533	0.1538	1.4574
x		94.8%	0.0045	93.2%	0.1666	0.1481	0.1541	0.1625	1.4413
σ		2.6%	0.0024	1.0%	0.0129	0.0162	0.0007	0.0113	0.0481
%RSD		2.7	54.1311	1.0	7.7662	10.9315	0.4604	6.9716	3.3353

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	1.3825	1.3779	95.3%	-0.0471	2.1025	-0.1488	-0.0176	95.7%
2	13:30:19	1.4152	1.3839	96.5%	-0.0230	1.9154	0.0007	0.0314	96.1%
3	13:30:56	1.4258	1.4140	94.6%	-0.0776	2.1817	-0.0423	-0.0873	96.5%
x		1.4078	1.3919	95.5%	-0.0492	2.0665	-0.0635	-0.0245	96.1%
σ		0.0225	0.0193	1.0%	0.0274	0.1367	0.0770	0.0597	0.4%
%RSD		1.6014	1.3890	1.0	55.5913	6.6169	121.2961	243.4976	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	94.8%	0.0015	0.0023	97.6%	0.0298	0.0244	0.0268
2	13:30:19	96.3%	-0.0009	0.0045	99.9%	0.0337	0.0316	0.0295
3	13:30:56	96.1%	0.0032	0.0013	99.7%	0.0342	0.0312	0.0294
x		95.7%	0.0013	0.0027	99.1%	0.0326	0.0291	0.0286
σ		0.8%	0.0021	0.0017	1.2%	0.0024	0.0040	0.0015
%RSD		0.8	163.3964	61.8161	1.3	7.3886	13.8609	5.2801

K1607034-011 8/3/2016 1:33:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	101.7%	0.0030	95.0%	0.0994	0.0948	0.0722	0.0665	0.5486
2	13:33:58	98.2%	0.0008	93.9%	0.0850	0.0696	0.0706	0.0772	0.4684
3	13:34:35	91.5%	0.0049	94.2%	0.0909	0.1020	0.0773	0.0808	0.5383
x		97.1%	0.0029	94.4%	0.0918	0.0888	0.0734	0.0749	0.5184
σ		5.1%	0.0021	0.6%	0.0072	0.0170	0.0035	0.0075	0.0436
%RSD		5.3	72.2323	0.6	7.8586	19.1852	4.7857	9.9715	8.4150

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	0.5158	0.5268	94.8%	-0.2155	2.4683	0.0106	-0.2166	95.4%
2	13:33:58	0.4752	0.4553	94.4%	0.0041	2.0244	-0.1542	-0.0086	96.3%
3	13:34:35	0.5166	0.5355	94.8%	0.0081	1.9358	-0.1252	-0.0674	96.0%
x		0.5025	0.5059	94.7%	-0.0678	2.1429	-0.0896	-0.0975	95.9%
σ		0.0237	0.0440	0.2%	0.1279	0.2853	0.0880	0.1072	0.5%
%RSD		4.7171	8.6997	0.3	188.7278	13.3154	98.1413	109.9461	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	95.4%	-0.0022	-0.0062	97.8%	0.0093	0.0128	0.0102
2	13:33:58	96.4%	-0.0030	-0.0004	99.4%	0.0100	0.0097	0.0099
3	13:34:35	96.3%	-0.0070	-0.0017	100.0%	0.0119	0.0131	0.0113
x		96.1%	-0.0041	-0.0028	99.1%	0.0104	0.0118	0.0104
σ		0.5%	0.0026	0.0030	1.2%	0.0013	0.0019	0.0007
%RSD		0.6	63.1923	108.8738	1.2	12.7849	15.9757	7.0552

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	94.9%	25.1550	96.4%	25.0082	25.0840	25.3274	24.9542	26.0927
2	13:37:32	96.5%	25.0253	94.9%	25.2027	25.0816	25.1350	25.2209	25.3994
3	13:38:08	92.5%	25.6392	94.4%	25.1441	25.2254	25.2308	25.5684	25.9205
x		94.6%	25.2732	95.2%	25.1183	25.1303	25.2311	25.2478	25.8042
σ		2.0%	0.3235	1.0%	0.0998	0.0824	0.0962	0.3080	0.3609
%RSD		2.1	1.2802	1.1	0.3973	0.3277	0.3812	1.2200	1.3988

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	26.0432	25.3710	96.3%	25.4587	24.8189	25.3277	24.9381	97.9%
2	13:37:32	25.0095	25.0716	97.0%	25.2400	24.7289	24.8517	24.8204	99.1%
3	13:38:08	25.3300	25.7157	96.3%	24.7102	24.8569	25.0834	24.0360	99.1%
x		25.4609	25.3861	96.5%	25.1363	24.8016	25.0876	24.5982	98.7%
σ		0.5291	0.3223	0.4%	0.3849	0.0657	0.2380	0.4904	0.7%
%RSD		2.0782	1.2698	0.4	1.5311	0.2651	0.9488	1.9936	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	97.7%	25.0925	24.8617	100.0%	25.3336	25.0709	25.3316
2	13:37:32	99.2%	25.0185	25.1465	102.0%	25.2907	25.2712	25.3645
3	13:38:08	99.7%	25.0802	25.1635	102.2%	25.4072	25.2456	25.4113
x		98.9%	25.0637	25.0572	101.4%	25.3439	25.1959	25.3692
σ		1.0%	0.0397	0.1696	1.2%	0.0589	0.1090	0.0400
%RSD		1.1	0.1582	0.6768	1.2	0.2324	0.4326	0.1578

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	100.0%	0.0065	99.6%	0.0123	0.0145	0.0076	0.0089	0.0073
2	13:45:19	99.0%	0.0092	99.1%	-0.0092	0.0211	0.0157	0.0092	0.0079
3	13:45:56	98.3%	0.0093	96.6%	0.0025	0.0131	0.0171	0.0187	0.0238
x		99.1%	0.0083	98.4%	0.0019	0.0162	0.0134	0.0123	0.0130
σ		0.8%	0.0016	1.6%	0.0107	0.0043	0.0051	0.0056	0.0094
%RSD		0.9	19.1081	1.6	574.8117	26.2100	38.1735	45.3779	71.9169

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	-0.0133	0.0043	96.9%	-0.0960	0.1204	-0.1028	-0.2724	98.7%
2	13:45:19	0.0217	0.0237	98.5%	0.0864	-0.0562	-0.0657	0.1947	99.3%
3	13:45:56	-0.0259	-0.0173	97.9%	-0.0730	-0.0021	-0.0763	-0.3099	99.0%
x		-0.0059	0.0035	97.7%	-0.0275	0.0207	-0.0816	-0.1292	99.0%
σ		0.0247	0.0205	0.8%	0.0993	0.0905	0.0191	0.2811	0.3%
%RSD		421.2734	578.2496	0.8	360.6172	437.2982	23.4582	217.6102	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	97.7%	0.0147	0.0160	98.0%	0.0098	0.0065	0.0058
2	13:45:19	99.5%	0.0153	0.0220	100.3%	0.0112	0.0108	0.0093
3	13:45:56	99.4%	0.0215	0.0214	101.3%	0.0077	0.0154	0.0091
x		98.9%	0.0172	0.0198	99.8%	0.0096	0.0109	0.0081
σ		1.0%	0.0038	0.0033	1.7%	0.0017	0.0044	0.0020
%RSD		1.0	21.8507	16.7311	1.7	18.1065	40.5944	24.5837

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	103.7%	0.0003	98.8%	0.0889	0.1072	0.2164	0.2181	2.4863
2	13:49:11	101.8%	0.0034	95.3%	0.0803	0.0691	0.2130	0.2280	2.4779
3	13:49:48	97.9%	0.0038	93.9%	0.0778	0.0921	0.2088	0.2014	2.4588
x		101.1%	0.0025	96.0%	0.0823	0.0895	0.2127	0.2159	2.4744
σ		3.0%	0.0019	2.5%	0.0058	0.0192	0.0038	0.0135	0.0141
%RSD		2.9	75.1372	2.6	7.0419	21.4774	1.7907	6.2367	0.5702

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	2.3237	2.3520	95.8%	-0.1079	2.1956	-0.1327	-0.1158	96.7%
2	13:49:11	2.2439	2.3731	95.2%	-0.0226	1.8031	-0.1323	-0.0868	96.8%
3	13:49:48	2.3458	2.3726	96.2%	-0.0453	1.9041	-0.0042	-0.0369	97.0%
x		2.3045	2.3659	95.7%	-0.0586	1.9676	-0.0897	-0.0799	96.9%
σ		0.0536	0.0121	0.5%	0.0442	0.2039	0.0741	0.0399	0.1%
%RSD		2.3260	0.5106	0.5	75.4141	10.3604	82.5619	49.9653	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	96.4%	0.0024	0.0082	97.3%	0.0185	0.0170	0.0167
2	13:49:11	97.5%	0.0145	0.0169	99.9%	0.0159	0.0195	0.0172
3	13:49:48	96.8%	0.0089	0.0126	99.7%	0.0171	0.0149	0.0156
x		96.9%	0.0086	0.0126	99.0%	0.0172	0.0171	0.0165
σ		0.6%	0.0060	0.0044	1.4%	0.0013	0.0023	0.0008
%RSD		0.6	69.9296	34.5970	1.4	7.5594	13.2104	4.8907

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	99.2%	0.0066	95.9%	0.0715	0.0592	0.2383	0.2227	0.7695
2	13:52:53	97.4%	0.0086	93.6%	0.0664	0.0850	0.2498	0.2235	0.8533
3	13:53:30	96.2%	0.0071	91.9%	0.0567	0.0650	0.2336	0.2272	0.8118
x		97.6%	0.0074	93.8%	0.0649	0.0697	0.2406	0.2245	0.8115
σ		1.6%	0.0010	2.0%	0.0075	0.0135	0.0083	0.0024	0.0419
%RSD		1.6	14.1099	2.1	11.5789	19.4325	3.4545	1.0820	5.1579

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	0.8830	0.8188	95.7%	-0.0446	1.7181	-0.3807	-0.1660	95.7%
2	13:52:53	0.8312	0.8032	95.6%	0.0293	1.8337	0.0318	0.0230	97.3%
3	13:53:30	0.7752	0.7330	94.3%	0.0521	1.9053	-0.0592	0.1821	95.9%
x		0.8298	0.7850	95.2%	0.0122	1.8190	-0.1360	0.0130	96.3%
σ		0.0539	0.0457	0.8%	0.0506	0.0944	0.2167	0.1743	0.9%
%RSD		6.4968	5.8228	0.8	412.6956	5.1917	159.3228	1335.8151	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	95.1%	0.0020	-0.0004	96.8%	0.0152	0.0218	0.0167
2	13:52:53	96.4%	0.0029	0.0009	98.4%	0.0194	0.0162	0.0168
3	13:53:30	96.1%	-0.0003	0.0036	98.2%	0.0163	0.0206	0.0164
x		95.9%	0.0015	0.0014	97.8%	0.0170	0.0196	0.0166
σ		0.7%	0.0017	0.0021	0.9%	0.0022	0.0029	0.0002
%RSD		0.7	109.9564	151.1583	0.9	12.8493	14.9866	1.3734

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	105.1%	0.0027	98.4%	0.0568	0.0272	0.0975	0.1110	0.8500
2	13:56:34	100.1%	0.0019	96.1%	0.0697	0.0428	0.0974	0.1062	0.7501
3	13:57:11	98.5%	0.0024	97.2%	0.0751	0.0768	0.1096	0.0910	0.7711
x		101.3%	0.0023	97.2%	0.0672	0.0489	0.1015	0.1028	0.7904
σ		3.4%	0.0004	1.1%	0.0094	0.0254	0.0070	0.0104	0.0526
%RSD		3.4	17.8069	1.2	14.0002	51.8746	6.9108	10.1564	6.6610

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	0.8154	0.7149	94.4%	-0.0029	1.8903	-0.1729	0.0232	95.8%
2	13:56:34	0.6830	0.6675	95.8%	-0.1513	2.0905	-0.2512	-0.3247	96.2%
3	13:57:11	0.7910	0.6553	95.3%	-0.0626	1.9548	-0.0321	-0.0864	95.7%
x		0.7631	0.6792	95.2%	-0.0723	1.9786	-0.1521	-0.1293	95.9%
σ		0.0705	0.0314	0.7%	0.0746	0.1022	0.1110	0.1779	0.3%
%RSD		9.2341	4.6303	0.7	103.2671	5.1649	72.9896	137.5526	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	94.7%	0.0008	-0.0034	95.6%	0.0340	0.0340	0.0341
2	13:56:34	95.7%	0.0003	0.0008	97.5%	0.0356	0.0359	0.0327
3	13:57:11	95.6%	-0.0043	0.0024	98.0%	0.0295	0.0284	0.0310
x		95.3%	-0.0011	-0.0001	97.0%	0.0330	0.0328	0.0326
σ		0.5%	0.0028	0.0030	1.2%	0.0032	0.0039	0.0015
%RSD		0.6	257.8440	5433.1638	1.3	9.5936	11.7821	4.7405

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	108.2%	0.0098	98.1%	0.0672	0.0691	0.1303	0.1244	1.2645
2	14:00:13	99.6%	0.0044	96.7%	0.0595	0.0767	0.1134	0.1096	1.2753
3	14:00:50	97.9%	0.0068	94.9%	0.0752	0.0875	0.1319	0.1077	1.2561
x		101.9%	0.0070	96.6%	0.0673	0.0777	0.1252	0.1139	1.2653
σ		5.5%	0.0027	1.6%	0.0078	0.0093	0.0102	0.0091	0.0096
%RSD		5.4	38.6144	1.7	11.6520	11.9063	8.1837	8.0315	0.7572

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	1.1837	1.2131	95.6%	-0.0157	1.9058	-0.4390	-0.0971	96.1%
2	14:00:13	1.2721	1.1492	96.2%	0.0581	1.5030	0.0306	-0.1451	96.8%
3	14:00:50	1.1378	1.2129	94.7%	0.0235	1.8931	-0.2047	0.0630	96.8%
x		1.1979	1.1917	95.5%	0.0219	1.7673	-0.2044	-0.0597	96.6%
σ		0.0683	0.0369	0.8%	0.0369	0.2290	0.2348	0.1090	0.4%
%RSD		5.7021	3.0931	0.8	168.1549	12.9579	114.8950	182.3737	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	94.6%	-0.0013	-0.0010	96.0%	0.0322	0.0323	0.0330
2	14:00:13	95.4%	-0.0025	-0.0022	97.7%	0.0330	0.0332	0.0329
3	14:00:50	96.5%	0.0009	-0.0004	97.6%	0.0337	0.0356	0.0313
x		95.5%	-0.0010	-0.0012	97.1%	0.0330	0.0337	0.0324
σ		0.9%	0.0017	0.0009	0.9%	0.0007	0.0017	0.0010
%RSD		1.0	176.6463	76.7616	0.9	2.2075	5.0381	2.9697

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	104.5%	0.0108	95.1%	0.1194	0.1402	0.2111	0.2064	1.7380
2	14:03:54	98.5%	0.0046	95.8%	0.1303	0.1311	0.2088	0.2136	1.7289
3	14:04:30	100.5%	0.0077	93.4%	0.1323	0.0981	0.2321	0.2024	1.7849
x		101.2%	0.0077	94.8%	0.1273	0.1231	0.2173	0.2075	1.7506
σ		3.1%	0.0031	1.2%	0.0069	0.0221	0.0129	0.0057	0.0301
%RSD		3.0	40.6853	1.3	5.4438	17.9721	5.9172	2.7237	1.7185

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	1.8054	1.6954	95.7%	0.0497	1.8817	-0.1014	0.0409	95.3%
2	14:03:54	1.6991	1.8204	95.6%	0.0979	1.7309	-0.3085	0.2311	96.3%
3	14:04:30	1.8083	1.6960	96.2%	-0.1613	2.3790	-0.1119	-0.1457	95.9%
x		1.7710	1.7373	95.8%	-0.0046	1.9972	-0.1739	0.0421	95.9%
σ		0.0622	0.0720	0.3%	0.1379	0.3392	0.1166	0.1884	0.5%
%RSD		3.5137	4.1421	0.3	3018.6515	16.9816	67.0601	447.9371	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	94.2%	0.0037	-0.0036	96.1%	0.0885	0.0774	0.0858
2	14:03:54	96.2%	0.0025	0.0006	98.3%	0.0851	0.0835	0.0830
3	14:04:30	96.4%	0.0011	-0.0010	98.3%	0.0926	0.0857	0.0863
x		95.6%	0.0024	-0.0013	97.6%	0.0887	0.0822	0.0850
σ		1.2%	0.0013	0.0021	1.3%	0.0038	0.0043	0.0018
%RSD		1.3	52.7622	160.0935	1.3	4.2331	5.1992	2.0749

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	103.7%	0.0020	97.7%	0.0783	0.1060	0.0630	0.0625	1.2312
2	14:07:40	97.5%	0.0004	93.4%	0.0808	0.0539	0.0687	0.0647	1.2511
3	14:08:17	98.9%	0.0003	94.7%	0.0825	0.0568	0.0729	0.0631	1.3434
x		100.0%	0.0009	95.3%	0.0806	0.0722	0.0682	0.0634	1.2752
σ		3.2%	0.0010	2.2%	0.0021	0.0293	0.0050	0.0012	0.0598
%RSD		3.2	109.3727	2.3	2.6230	40.5345	7.2790	1.8416	4.6911

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	1.1812	1.1795	95.9%	0.0003	2.2113	-0.1459	0.1625	95.8%
2	14:07:40	1.3525	1.1847	94.9%	-0.0506	1.9848	-0.2805	-0.0069	96.7%
3	14:08:17	1.1885	1.2042	95.8%	0.0713	1.7641	-0.3432	0.1212	97.1%
x		1.2407	1.1895	95.5%	0.0070	1.9867	-0.2565	0.0923	96.5%
σ		0.0968	0.0130	0.6%	0.0612	0.2236	0.1008	0.0883	0.7%
%RSD		7.8036	1.0915	0.6	874.0161	11.2546	39.2927	95.6913	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	95.4%	-0.0040	-0.0048	95.6%	0.0141	0.0158	0.0136
2	14:07:40	96.4%	-0.0065	-0.0066	99.0%	0.0170	0.0125	0.0142
3	14:08:17	95.7%	-0.0026	-0.0049	98.7%	0.0150	0.0149	0.0140
x		95.8%	-0.0044	-0.0054	97.8%	0.0154	0.0144	0.0139
σ		0.5%	0.0020	0.0010	1.8%	0.0015	0.0017	0.0003
%RSD		0.5	45.7093	19.0705	1.9	9.8077	11.5867	2.1741

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	95.2%	0.0027	96.1%	0.1303	0.1453	0.1095	0.1068	0.4891
2	14:11:13	99.7%	0.0023	93.2%	0.1592	0.1649	0.1256	0.0987	0.4937
3	14:11:49	93.5%	0.0025	93.5%	0.1477	0.1328	0.1085	0.1162	0.5063
x		96.1%	0.0025	94.3%	0.1457	0.1477	0.1145	0.1072	0.4964
σ		3.2%	0.0002	1.6%	0.0145	0.0162	0.0096	0.0088	0.0089
%RSD		3.4	7.8230	1.7	9.9584	10.9394	8.3850	8.1675	1.7960

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	0.5249	0.4575	95.2%	0.0704	1.7255	-0.2164	-0.0672	95.8%
2	14:11:13	0.5409	0.4395	96.3%	0.0956	1.9053	-0.1627	0.1605	96.6%
3	14:11:49	0.5638	0.3880	95.5%	-0.0047	2.0711	-0.1985	-0.0856	96.1%
x		0.5432	0.4283	95.7%	0.0538	1.9007	-0.1926	0.0026	96.2%
σ		0.0195	0.0361	0.5%	0.0521	0.1728	0.0274	0.1371	0.4%
%RSD		3.5978	8.4249	0.6	96.9549	9.0939	14.2074	5290.3657	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	94.8%	-0.0063	-0.0068	97.1%	0.0085	0.0116	0.0097
2	14:11:13	96.4%	-0.0055	-0.0034	100.0%	0.0110	0.0126	0.0110
3	14:11:49	96.4%	-0.0065	-0.0060	100.3%	0.0094	0.0098	0.0090
x		95.9%	-0.0061	-0.0054	99.1%	0.0097	0.0113	0.0099
σ		0.9%	0.0005	0.0018	1.7%	0.0013	0.0014	0.0011
%RSD		0.9	8.7059	32.9320	1.7	13.1644	12.5821	10.7389

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	99.1%	0.0037	94.5%	0.2330	0.2037	0.2100	0.2283	1.0785
2	14:14:53	93.7%	0.0056	93.7%	0.2201	0.2079	0.2288	0.2036	1.1158
3	14:15:30	94.7%	0.0068	91.7%	0.2319	0.2026	0.2311	0.2194	1.1516
x		95.8%	0.0053	93.3%	0.2283	0.2047	0.2233	0.2171	1.1153
σ		2.9%	0.0016	1.4%	0.0072	0.0028	0.0116	0.0125	0.0365
%RSD		3.0	29.6000	1.5	3.1357	1.3836	5.1805	5.7466	3.2764

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	0.9382	1.1112	94.7%	-0.0584	2.0225	-0.0253	-0.1979	95.4%
2	14:14:53	1.0840	1.0958	94.7%	-0.0112	2.0443	-0.1775	-0.2476	96.5%
3	14:15:30	0.9445	1.0518	94.5%	0.0329	1.8158	-0.1423	0.0327	96.7%
x		0.9889	1.0863	94.6%	-0.0122	1.9609	-0.1150	-0.1376	96.2%
σ		0.0824	0.0309	0.1%	0.0457	0.1261	0.0796	0.1495	0.7%
%RSD		8.3337	2.8413	0.1	373.7535	6.4302	69.2326	108.6710	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	95.4%	-0.0084	-0.0065	97.1%	0.0263	0.0225	0.0234
2	14:14:53	96.5%	-0.0055	-0.0037	98.9%	0.0285	0.0299	0.0285
3	14:15:30	96.8%	-0.0081	-0.0041	100.0%	0.0272	0.0207	0.0247
x		96.2%	-0.0073	-0.0048	98.7%	0.0273	0.0244	0.0255
σ		0.7%	0.0016	0.0015	1.5%	0.0011	0.0049	0.0026
%RSD		0.8	21.7863	31.7039	1.5	3.8975	20.0326	10.3483

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	98.5%	0.0037	95.6%	0.0975	0.1161	0.0832	0.0928	0.3106
2	14:18:28	95.9%	0.0014	93.1%	0.0974	0.0783	0.0709	0.0724	0.3306
3	14:19:05	98.3%	0.0012	93.9%	0.1066	0.0695	0.0749	0.0721	0.3600
x		97.6%	0.0021	94.2%	0.1005	0.0880	0.0763	0.0791	0.3337
σ		1.4%	0.0014	1.3%	0.0053	0.0248	0.0063	0.0119	0.0248
%RSD		1.5	67.7052	1.4	5.2257	28.1370	8.2119	15.0095	7.4326

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	0.4035	0.3121	94.6%	0.0393	2.0771	0.0549	0.1540	95.8%
2	14:18:28	0.3922	0.3426	94.8%	0.1663	1.5294	-0.0809	0.0335	96.1%
3	14:19:05	0.3501	0.3209	95.7%	0.0884	1.6205	-0.0148	-0.1474	96.6%
x		0.3819	0.3252	95.0%	0.0980	1.7424	-0.0136	0.0134	96.2%
σ		0.0281	0.0157	0.6%	0.0641	0.2935	0.0679	0.1517	0.4%
%RSD		7.3646	4.8263	0.6	65.3836	16.8444	498.4866	1134.1936	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	94.4%	-0.0057	-0.0077	97.1%	0.0097	0.0092	0.0090
2	14:18:28	96.3%	-0.0067	-0.0112	98.5%	0.0146	0.0134	0.0110
3	14:19:05	96.5%	-0.0070	-0.0080	99.3%	0.0107	0.0125	0.0112
x		95.7%	-0.0065	-0.0090	98.3%	0.0117	0.0117	0.0104
σ		1.1%	0.0007	0.0020	1.1%	0.0026	0.0022	0.0012
%RSD		1.2	10.7266	21.8614	1.1	22.5106	18.6742	11.9651

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	103.4%	24.6848	97.2%	25.8973	25.3909	25.4026	25.9189	25.6806
2	14:22:00	101.0%	24.8784	97.4%	25.4249	25.1996	25.0559	24.9735	25.4780
3	14:22:37	102.0%	24.5257	98.1%	25.2934	24.9972	24.9115	25.4667	25.2623
x		102.1%	24.6963	97.5%	25.5385	25.1959	25.1233	25.4531	25.4736
σ		1.2%	0.1766	0.5%	0.3176	0.1968	0.2524	0.4729	0.2092
%RSD		1.2	0.7152	0.5	1.2435	0.7813	1.0048	1.8578	0.8212

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	24.8011	25.5555	97.1%	25.6419	24.9977	25.1826	25.8178	97.5%
2	14:22:00	25.1232	24.8745	98.6%	25.2047	24.8743	24.5652	25.3155	97.9%
3	14:22:37	24.5761	25.0287	98.5%	25.1401	25.4988	24.7982	25.4012	99.1%
x		24.8335	25.1529	98.1%	25.3289	25.1236	24.8487	25.5115	98.2%
σ		0.2750	0.3571	0.9%	0.2729	0.3307	0.3118	0.2687	0.8%
%RSD		1.1072	1.4198	0.9	1.0776	1.3164	1.2546	1.0534	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	96.9%	24.9602	24.7514	97.8%	25.1074	25.1317	25.1583
2	14:22:00	98.1%	25.0018	24.8196	100.0%	25.1121	24.9996	24.9430
3	14:22:37	98.8%	24.7085	24.7473	99.6%	25.2657	25.0152	25.2027
x		97.9%	24.8902	24.7728	99.1%	25.1617	25.0488	25.1013
σ		1.0%	0.1587	0.0406	1.1%	0.0901	0.0722	0.1389
%RSD		1.0	0.6377	0.1639	1.1	0.3580	0.2882	0.5533

CCB3 8/3/2016 2:30:32 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	106.1%	0.0097	100.6%	0.0182	0.0061	0.0157	0.0200	0.0268
2	14:31:08	101.9%	0.0186	99.4%	0.0005	0.0468	0.0168	0.0166	0.0232
3	14:31:45	103.7%	0.0105	100.4%	0.0076	0.0087	0.0105	0.0097	0.0095
x		103.9%	0.0129	100.1%	0.0088	0.0205	0.0143	0.0154	0.0198
σ		2.1%	0.0049	0.7%	0.0089	0.0228	0.0034	0.0052	0.0091
%RSD		2.0	38.1260	0.7	102.0424	110.8877	23.3548	33.7771	45.8437
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	0.0030	0.0204	98.8%	-0.0503	0.1655	-0.2904	-0.1131	98.3%
2	14:31:08	-0.0156	0.0170	99.8%	0.0251	0.0958	-0.1217	0.1446	99.4%
3	14:31:45	0.0033	0.0026	98.6%	-0.0651	-0.0046	-0.0427	-0.2981	99.9%
x		-0.0031	0.0133	99.0%	-0.0301	0.0856	-0.1516	-0.0889	99.2%
σ		0.0108	0.0095	0.6%	0.0484	0.0855	0.1265	0.2223	0.8%
%RSD		347.0159	71.1854	0.6	160.6724	99.9414	83.4676	250.2364	0.8
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	14:30:32	97.8%	0.0092	0.0069	96.3%	0.0130	0.0135	0.0129	
2	14:31:08	99.2%	0.0157	0.0168	98.8%	0.0110	0.0151	0.0133	
3	14:31:45	98.9%	0.0113	0.0075	99.0%	0.0145	0.0138	0.0134	
x		98.6%	0.0121	0.0104	98.0%	0.0128	0.0142	0.0132	
σ		0.7%	0.0033	0.0055	1.5%	0.0018	0.0009	0.0003	
%RSD		0.8	27.4597	53.1143	1.5	13.8869	6.0311	2.0834	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	102.4%	0.0070	99.8%	0.0039	0.0144	0.0147	0.0137	0.0342
2	14:34:56	103.5%	0.0113	99.4%	-0.0019	0.0361	0.0130	0.0184	0.0258
3	14:35:33	106.5%	0.0081	98.4%	0.0119	0.0162	0.0123	0.0201	0.0002
x		104.2%	0.0088	99.2%	0.0046	0.0222	0.0133	0.0174	0.0201
σ		2.1%	0.0023	0.7%	0.0069	0.0120	0.0012	0.0033	0.0177
%RSD		2.0	25.6081	0.7	150.4790	54.1205	9.0138	19.0341	88.3850
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	0.0095	0.0158	98.4%	-0.0281	-0.0693	-0.0859	-0.1826	99.4%
2	14:34:56	-0.0218	-0.0013	100.1%	-0.0644	0.0806	-0.1019	-0.1896	100.9%
3	14:35:33	-0.0163	0.0337	101.0%	-0.0151	0.0901	-0.2698	0.0108	101.3%
x		-0.0095	0.0160	99.8%	-0.0359	0.0338	-0.1526	-0.1205	100.5%
σ		0.0167	0.0175	1.3%	0.0256	0.0894	0.1019	0.1138	1.0%
%RSD		175.4036	109.2396	1.3	71.3260	264.6664	66.7625	94.4279	1.0
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	14:34:20	99.0%	0.0017	0.0027	97.3%	0.0080	0.0053	0.0061	
2	14:34:56	100.4%	0.0048	0.0091	99.2%	0.0076	0.0084	0.0084	
3	14:35:33	99.9%	0.0044	0.0019	99.4%	0.0084	0.0081	0.0070	
x		99.8%	0.0036	0.0045	98.7%	0.0080	0.0073	0.0072	
σ		0.7%	0.0017	0.0039	1.2%	0.0004	0.0017	0.0012	
%RSD		0.7	47.1398	86.4013	1.2	5.4158	23.6269	16.4987	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	105.8%	0.0225	100.4%	0.1481	0.1856	0.0977	0.0962	0.5535
2	14:38:35	101.6%	0.0261	99.8%	0.1763	0.1981	0.1051	0.0887	0.5176
3	14:39:11	102.5%	0.0156	98.5%	0.1670	0.1653	0.0999	0.0853	0.4696
x		103.3%	0.0214	99.6%	0.1638	0.1830	0.1009	0.0901	0.5136
σ		2.2%	0.0053	1.0%	0.0144	0.0166	0.0038	0.0056	0.0421
%RSD		2.1	24.9043	1.0	8.7793	9.0511	3.7360	6.1868	8.1904

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	0.3758	0.4672	98.7%	0.4774	1.0626	1.2671	0.9370	100.4%
2	14:38:35	0.4632	0.4731	99.4%	0.5283	0.8462	0.9208	0.8838	101.1%
3	14:39:11	0.5736	0.5037	99.1%	0.5500	1.0556	1.1144	1.2166	101.2%
x		0.4709	0.4813	99.1%	0.5186	0.9882	1.1007	1.0125	100.9%
σ		0.0991	0.0196	0.3%	0.0373	0.1230	0.1735	0.1788	0.4%
%RSD		21.0487	4.0760	0.3	7.1837	12.4433	15.7658	17.6574	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	98.7%	0.0496	0.0418	98.3%	0.0181	0.0173	0.0198
2	14:38:35	101.1%	0.0511	0.0486	99.6%	0.0215	0.0205	0.0197
3	14:39:11	100.9%	0.0480	0.0486	100.3%	0.0242	0.0199	0.0217
x		100.2%	0.0496	0.0463	99.4%	0.0213	0.0192	0.0204
σ		1.4%	0.0015	0.0039	1.1%	0.0031	0.0017	0.0011
%RSD		1.3	3.1022	8.4938	1.1	14.5127	8.9172	5.5793

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	103.5%	-0.0025	98.9%	-0.0268	0.0147	0.0041	0.0037	0.0043
2	14:42:12	107.0%	0.0009	98.4%	-0.0224	-0.0291	0.0025	0.0039	0.0756
3	14:42:49	99.2%	0.0028	96.4%	-0.0212	-0.0005	0.0083	0.0096	0.0604
x		103.2%	0.0004	97.9%	-0.0235	-0.0050	0.0050	0.0057	0.0467
σ		3.9%	0.0027	1.3%	0.0030	0.0222	0.0030	0.0033	0.0376
%RSD		3.8	656.2734	1.4	12.6680	446.8010	59.7810	58.3608	80.3875

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	0.1760	0.0226	97.1%	-0.0807	1.9501	0.2267	-0.0669	98.0%
2	14:42:12	0.1290	0.0759	99.3%	0.0119	1.8419	0.0796	0.0498	98.5%
3	14:42:49	0.0715	0.0588	97.9%	-0.0292	1.6712	-0.0548	-0.1614	97.8%
x		0.1255	0.0525	98.1%	-0.0327	1.8211	0.0838	-0.0595	98.1%
σ		0.0523	0.0272	1.1%	0.0464	0.1406	0.1408	0.1058	0.4%
%RSD		41.7013	51.8588	1.1	141.9717	7.7217	167.9589	177.8220	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	96.9%	-0.0055	-0.0050	96.3%	0.0075	0.0086	0.0045
2	14:42:12	98.1%	-0.0075	-0.0062	98.6%	0.0090	0.0065	0.0091
3	14:42:49	97.9%	-0.0049	-0.0033	99.1%	0.0065	0.0128	0.0077
x		97.6%	-0.0060	-0.0048	98.0%	0.0076	0.0093	0.0071
σ		0.6%	0.0013	0.0015	1.5%	0.0013	0.0032	0.0024
%RSD		0.7	22.1856	30.6343	1.5	16.7291	34.6926	33.1868

8/4/16

DNR Zn LCW out of control

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8/4/17

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	104.6%	2.5384	99.9%	25.5074	25.4862	12.9593	12.7608	34.8915
2	14:45:45	102.0%	2.5837	99.0%	25.0479	24.8492	12.6384	12.5448	35.4127
3	14:46:21	101.3%	2.5224	97.8%	25.7277	25.1693	12.9701	13.0005	35.9762
x		102.6%	2.5482	98.9%	25.4277	25.1682	12.8559	12.7687	35.4268
σ		1.7%	0.0318	1.1%	0.3469	0.3185	0.1885	0.2280	0.5425
%RSD		1.7	1.2472	1.1	1.3641	1.2655	1.4659	1.7854	1.5312

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	38.3469	37.0963	99.2%	50.6793	50.2530	50.1731	50.5431	99.9%
2	14:45:45	37.9095	37.4868	100.1%	49.4681	51.3486	49.0890	49.6194	98.9%
3	14:46:21	39.3934	37.7582	98.1%	50.6486	51.0318	50.9848	50.5353	99.6%
x		38.5499	37.4471	99.1%	50.2653	50.8778	50.0823	50.2326	99.5%
σ		0.7625	0.3327	1.0%	0.6906	0.5638	0.9511	0.5310	0.5%
%RSD		1.9780	0.8886	1.0	1.3739	1.1082	1.8991	1.0571	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	97.4%	50.5366	50.1233	98.0%	49.5263	50.4561	50.1429
2	14:45:45	99.2%	49.7170	49.7333	99.5%	49.9081	51.4302	50.9050
3	14:46:21	99.8%	49.8135	49.5506	99.9%	49.9816	51.2589	50.6962
x		98.8%	50.0224	49.8024	99.1%	49.8053	51.0484	50.5814
σ		1.2%	0.4479	0.2925	1.0%	0.2444	0.5200	0.3938
%RSD		1.2	0.8954	0.5874	1.0	0.4908	1.0187	0.7786

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8/4/17

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	106.7%	2.4560	97.8%	25.8863	25.2367	12.6671	12.9210	25.4538
2	14:50:52	97.8%	2.5326	96.8%	25.4817	25.1756	12.6830	12.7855	25.5581
3	14:51:29	98.6%	2.4679	97.3%	25.4445	25.1684	12.6283	12.4873	25.2749
x		101.0%	2.4855	97.3%	25.6042	25.1936	12.6594	12.7313	25.4273
σ		4.9%	0.0412	0.5%	0.2451	0.0375	0.0282	0.2219	0.1410
%RSD		4.8	1.6584	0.5	0.9571	0.1489	0.2224	1.7428	0.5544

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	30.0122	27.7241	98.0%	51.3104	52.0132	50.2698	49.5731	98.4%
2	14:50:52	30.0582	27.9650	97.4%	51.1673	53.1600	50.0804	50.8574	99.2%
3	14:51:29	29.3583	27.8699	98.0%	50.8767	52.7403	51.4413	50.2583	97.9%
x		29.8096	27.8530	97.8%	51.1181	52.6378	50.5972	50.2296	98.5%
σ		0.3915	0.1214	0.3%	0.2210	0.5803	0.7371	0.6426	0.7%
%RSD		1.3134	0.4357	0.3	0.4323	1.1024	1.4569	1.2793	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	96.6%	51.0810	50.5821	97.9%	50.2172	51.8771	51.3157
2	14:50:52	98.1%	50.9856	50.8394	99.2%	50.7402	52.1238	51.8103
3	14:51:29	98.0%	50.8107	50.7637	99.9%	50.8752	52.6546	51.8684
x		97.6%	50.9591	50.7284	99.0%	50.6109	52.2185	51.6648
σ		0.8%	0.1371	0.1322	1.0%	0.3475	0.3973	0.3037
%RSD		0.9	0.2690	0.2606	1.1	0.6866	0.7609	0.5879

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	106.3%	0.0026	97.4%	0.1534	0.1293	0.1154	0.1164	1.2748
2	14:56:17	101.2%	0.0026	98.0%	0.1289	0.1411	0.1238	0.1147	1.2274
3	14:56:53	102.2%	0.0025	96.1%	0.1347	0.1180	0.1106	0.1273	1.2581
x		103.2%	0.0026	97.2%	0.1390	0.1295	0.1166	0.1195	1.2534
σ		2.7%	0.0000	1.0%	0.0128	0.0115	0.0067	0.0069	0.0241
%RSD		2.6	1.4056	1.0	9.2171	8.9164	5.7353	5.7563	1.9188

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	1.1626	1.1121	97.1%	0.0692	1.8763	-0.2635	0.2386	96.6%
2	14:56:17	1.2155	1.2356	96.6%	0.1086	1.9315	0.2903	0.3660	98.1%
3	14:56:53	1.3858	1.1323	97.1%	0.0364	1.8666	-0.4020	0.2357	98.8%
x		1.2546	1.1600	96.9%	0.0714	1.8915	-0.1251	0.2801	97.9%
σ		0.1166	0.0663	0.3%	0.0361	0.0350	0.3663	0.0744	1.1%
%RSD		9.2972	5.7112	0.3	50.6259	1.8512	292.8757	26.5530	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	95.2%	0.0097	0.0102	96.2%	0.0296	0.0314	0.0336
2	14:56:17	97.6%	0.0120	0.0131	98.5%	0.0372	0.0375	0.0365
3	14:56:53	98.4%	0.0160	0.0132	98.0%	0.0453	0.0385	0.0394
x		97.1%	0.0126	0.0122	97.5%	0.0374	0.0358	0.0365
σ		1.7%	0.0032	0.0017	1.2%	0.0079	0.0038	0.0029
%RSD		1.7	25.4551	13.7139	1.2	21.0107	10.7407	7.9786

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	102.6%	0.0017	98.5%	0.0018	0.0182	0.0240	0.0290	0.2348
2	14:59:53	94.6%	0.0019	95.9%	0.0184	0.0481	0.0307	0.0135	0.2514
3	15:00:29	98.5%	-0.0018	96.1%	0.0087	0.0153	0.0208	0.0253	0.2359
x		98.6%	0.0006	96.8%	0.0096	0.0272	0.0251	0.0226	0.2407
σ		4.0%	0.0021	1.5%	0.0084	0.0182	0.0051	0.0081	0.0083
%RSD		4.0	368.5036	1.5	86.9956	66.7941	20.1807	35.7776	3.8612

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	0.2645	0.2526	96.2%	0.0163	0.5377	0.1869	0.1394	98.0%
2	14:59:53	0.2482	0.2585	98.0%	0.0014	0.3789	0.1310	-0.0479	98.6%
3	15:00:29	0.2777	0.2596	96.4%	-0.0290	0.3223	0.0823	-0.2240	98.5%
x		0.2635	0.2569	96.9%	-0.0038	0.4130	0.1334	-0.0442	98.4%
σ		0.0148	0.0038	1.0%	0.0231	0.1117	0.0524	0.1817	0.3%
%RSD		5.6054	1.4659	1.0	613.2491	27.0406	39.2474	411.4784	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	97.5%	-0.0109	-0.0149	97.3%	0.0062	0.0058	0.0063
2	14:59:53	98.2%	-0.0117	-0.0140	98.7%	0.0087	0.0082	0.0065
3	15:00:29	98.3%	-0.0068	-0.0111	100.0%	0.0088	0.0076	0.0074
x		98.0%	-0.0098	-0.0133	98.7%	0.0079	0.0072	0.0067
σ		0.5%	0.0027	0.0020	1.3%	0.0015	0.0012	0.0006
%RSD		0.5	27.2225	14.9429	1.3	18.7627	17.2984	8.6277

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	104.0%	21.0841	97.0%	21.8657	21.6656	21.8976	22.7613	23.1381
2	15:03:27	99.5%	21.2583	97.4%	21.5899	21.1094	21.3516	21.3418	22.4052
3	15:04:04	97.3%	20.7809	94.0%	21.8576	22.0342	21.8697	22.3049	23.0866
x		100.3%	21.0411	96.1%	21.7711	21.6031	21.7063	22.1360	22.8767
σ		3.4%	0.2416	1.9%	0.1570	0.4656	0.3075	0.7247	0.4091
%RSD		3.4	1.1482	1.9	0.7210	2.1552	1.4167	3.2736	1.7881

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	22.6908	22.8828	96.2%	21.5424	23.2691	21.4486	20.2022	97.8%
2	15:03:27	22.0119	22.3463	97.6%	21.4800	23.4551	20.7177	20.9757	97.2%
3	15:04:04	22.6792	22.5721	95.7%	21.8317	22.1326	20.1640	21.1168	97.7%
x		22.4607	22.6004	96.5%	21.6181	22.9523	20.7768	20.7649	97.6%
σ		0.3887	0.2694	1.0%	0.1877	0.7159	0.6444	0.4924	0.3%
%RSD		1.7305	1.1919	1.0	0.8681	3.1192	3.1013	2.3711	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	98.1%	21.5526	21.4968	97.3%	21.5098	21.2928	21.4356
2	15:03:27	98.7%	21.7927	21.5765	99.6%	21.4689	21.4438	21.5211
3	15:04:04	98.4%	21.7961	21.6420	99.5%	21.5373	21.3620	21.5330
x		98.4%	21.7138	21.5718	98.8%	21.5053	21.3662	21.4966
σ		0.3%	0.1396	0.0727	1.3%	0.0345	0.0756	0.0531
%RSD		0.3	0.6430	0.3371	1.3	0.1602	0.3538	0.2471

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	100.9%	0.0043	95.4%	0.1810	0.1602	0.1479	0.1467	1.2657
2	15:07:28	98.3%	0.0029	96.4%	0.1754	0.1575	0.1425	0.1495	1.3052
3	15:08:04	97.3%	0.0142	96.8%	0.1714	0.1879	0.1461	0.1647	1.2784
x		98.8%	0.0071	96.2%	0.1759	0.1686	0.1455	0.1536	1.2831
σ		1.8%	0.0062	0.7%	0.0048	0.0168	0.0027	0.0097	0.0201
%RSD		1.9	86.4837	0.8	2.7413	9.9881	1.8610	6.3049	1.5703

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	1.2254	1.2172	95.2%	0.0589	1.9261	-0.0769	0.3208	96.5%
2	15:07:28	1.3036	1.1996	96.8%	-0.0027	2.0088	-0.1439	0.1591	98.2%
3	15:08:04	1.2007	1.0761	97.1%	0.0358	1.8064	-0.1342	0.0027	97.5%
x		1.2432	1.1643	96.3%	0.0307	1.9138	-0.1183	0.1609	97.4%
σ		0.0537	0.0769	1.0%	0.0311	0.1017	0.0362	0.1590	0.9%
%RSD		4.3214	6.6053	1.0	101.3181	5.3167	30.6327	98.8747	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	95.8%	-0.0010	0.0001	97.1%	0.0334	0.0345	0.0319
2	15:07:28	97.4%	0.0019	0.0066	98.7%	0.0319	0.0320	0.0347
3	15:08:04	97.5%	0.0160	0.0092	99.4%	0.0482	0.0531	0.0485
x		96.9%	0.0056	0.0053	98.4%	0.0378	0.0399	0.0384
σ		1.0%	0.0091	0.0047	1.2%	0.0090	0.0115	0.0089
%RSD		1.0	161.0468	88.4407	1.2	23.7618	28.9550	23.1407

K1608209-015 8/3/2016 3:10:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	99.9%	0.0002	97.7%	0.0513	0.0455	0.0709	0.0796	0.7591
2	15:11:03	97.9%	0.0068	95.0%	0.0661	0.0528	0.0937	0.0755	0.7749
3	15:11:38	97.8%	0.0025	96.3%	0.0495	0.0414	0.0793	0.0650	0.7587
x		98.5%	0.0032	96.3%	0.0556	0.0466	0.0813	0.0734	0.7642
σ		1.2%	0.0034	1.3%	0.0091	0.0058	0.0116	0.0075	0.0092
%RSD		1.2	106.3219	1.4	16.3658	12.4257	14.2082	10.2612	1.2068

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	0.9145	0.7674	96.0%	0.0143	2.0034	0.0450	0.2189	96.7%
2	15:11:03	0.7813	0.7692	96.1%	0.0345	1.8136	-0.0358	0.2003	96.6%
3	15:11:38	0.6904	0.7818	97.4%	-0.0508	1.8843	-0.1655	-0.1250	96.6%
x		0.7954	0.7728	96.5%	-0.0007	1.9004	-0.0521	0.0981	96.6%
σ		0.1127	0.0079	0.8%	0.0446	0.0959	0.1062	0.1934	0.1%
%RSD		14.1651	1.0160	0.8	6322.1316	5.0455	203.8613	197.1959	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	96.3%	-0.0062	-0.0076	96.6%	0.0169	0.0166	0.0159
2	15:11:03	96.8%	-0.0022	0.0005	98.7%	0.0168	0.0231	0.0192
3	15:11:38	96.8%	-0.0048	-0.0028	98.7%	0.0229	0.0185	0.0185
x		96.6%	-0.0044	-0.0033	98.0%	0.0189	0.0194	0.0179
σ		0.3%	0.0020	0.0041	1.2%	0.0035	0.0033	0.0018
%RSD		0.3	45.6438	124.5802	1.3	18.5656	17.1083	9.8436

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	101.7%	0.0034	94.3%	0.1444	0.1385	0.0779	0.0659	0.4126
2	15:14:40	98.7%	0.0003	95.3%	0.1518	0.1189	0.0723	0.0609	0.4439
3	15:15:16	98.2%	0.0008	93.3%	0.1439	0.1163	0.0699	0.0778	0.4227
x		99.6%	0.0015	94.3%	0.1467	0.1246	0.0734	0.0682	0.4264
σ		1.9%	0.0017	1.0%	0.0044	0.0121	0.0041	0.0087	0.0160
%RSD		1.9	113.9226	1.1	3.0200	9.7491	5.5900	12.7489	3.7439

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	0.5037	0.4309	94.9%	0.0078	1.7269	-0.0468	-0.1872	97.1%
2	15:14:40	0.4221	0.4553	96.0%	0.0245	1.9123	-0.1676	0.0430	96.0%
3	15:15:16	0.4868	0.4175	94.7%	0.0093	1.8659	0.2679	0.0534	97.0%
x		0.4709	0.4346	95.2%	0.0139	1.8350	0.0179	-0.0303	96.7%
σ		0.0431	0.0192	0.7%	0.0092	0.0964	0.2248	0.1360	0.6%
%RSD		9.1475	4.4117	0.8	66.7038	5.2554	1259.1868	449.6678	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	96.0%	-0.0072	-0.0089	96.6%	0.0194	0.0205	0.0194
2	15:14:40	96.8%	-0.0055	-0.0064	98.2%	0.0203	0.0217	0.0190
3	15:15:16	96.4%	-0.0068	-0.0070	98.9%	0.0172	0.0220	0.0182
x		96.4%	-0.0065	-0.0074	97.9%	0.0190	0.0214	0.0189
σ		0.4%	0.0009	0.0013	1.2%	0.0016	0.0008	0.0006
%RSD		0.4	13.2764	17.7479	1.2	8.3234	3.5657	3.3810

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	102.6%	24.9203	98.1%	25.6534	25.1509	25.3747	25.8305	25.9470
2	15:18:15	98.0%	24.6290	97.4%	25.4612	25.3587	25.6593	25.7221	25.6369
3	15:18:51	94.4%	25.4136	98.0%	25.1892	25.1400	24.7310	24.8971	25.0410
x		98.3%	24.9876	97.9%	25.4346	25.2165	25.2550	25.4832	25.5416
σ		4.1%	0.3966	0.4%	0.2333	0.1233	0.4756	0.5105	0.4605
%RSD		4.2	1.5873	0.4	0.9171	0.4889	1.8831	2.0033	1.8028

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	25.6209	25.0331	97.6%	25.4513	24.5401	24.6699	24.5473	98.3%
2	15:18:15	25.5059	25.2442	96.9%	24.6204	26.1055	25.0593	24.3395	99.6%
3	15:18:51	25.5154	25.1255	98.8%	24.9823	24.9418	24.9622	25.0573	99.6%
x		25.5474	25.1343	97.7%	25.0180	25.1958	24.8972	24.6480	99.2%
σ		0.0638	0.1058	1.0%	0.4166	0.8130	0.2027	0.3693	0.7%
%RSD		0.2498	0.4210	1.0	1.6651	3.2269	0.8141	1.4984	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	98.7%	24.6793	24.5092	99.0%	25.4580	25.1410	25.2942
2	15:18:15	99.2%	25.2342	24.9597	100.1%	25.3748	25.2297	25.3759
3	15:18:51	100.4%	25.0373	24.9185	101.0%	25.3920	25.4493	25.4656
x		99.4%	24.9836	24.7958	100.0%	25.4083	25.2733	25.3785
σ		0.9%	0.2813	0.2491	1.0%	0.0439	0.1587	0.0857
%RSD		0.9	1.1260	1.0046	1.0	0.1729	0.6280	0.3378

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	108.2%	0.0071	99.9%	0.0079	0.0410	0.0139	0.0080	-0.0094
2	15:27:36	102.9%	0.0159	100.0%	0.0015	0.0350	0.0193	0.0202	0.0293
3	15:28:13	99.3%	0.0133	99.5%	0.0167	0.0286	0.0199	0.0192	0.0118
x		103.5%	0.0121	99.8%	0.0087	0.0348	0.0177	0.0158	0.0106
σ		4.5%	0.0045	0.3%	0.0076	0.0062	0.0033	0.0068	0.0194
%RSD		4.3	37.5054	0.3	87.4039	17.7926	18.8768	42.8159	183.3938

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	0.0343	0.0190	97.9%	0.0184	0.1422	-0.0608	0.1570	99.4%
2	15:27:36	0.0758	0.0054	98.4%	-0.0513	0.1776	0.2733	-0.0750	101.2%
3	15:28:13	0.0264	0.0017	99.5%	-0.0090	0.0563	-0.2014	-0.0748	101.4%
x		0.0455	0.0087	98.6%	-0.0140	0.1254	0.0037	0.0024	100.6%
σ		0.0266	0.0091	0.9%	0.0351	0.0624	0.2438	0.1338	1.1%
%RSD		58.3615	104.6443	0.9	251.7587	49.7524	6596.4383	5548.1478	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	98.1%	0.0144	0.0143	96.5%	0.0107	0.0059	0.0078
2	15:27:36	99.9%	0.0209	0.0168	98.9%	0.0188	0.0184	0.0176
3	15:28:13	100.3%	0.0153	0.0189	99.4%	0.0120	0.0186	0.0143
x		99.4%	0.0169	0.0167	98.3%	0.0138	0.0143	0.0132
σ		1.2%	0.0035	0.0023	1.6%	0.0044	0.0073	0.0049
%RSD		1.2	20.8043	13.7617	1.6	31.5971	50.7832	37.3659

CCB4 8/3/2016 3:30:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	108.7%	0.0062	101.8%	-0.0018	0.0258	0.0109	0.0142	0.0230
2	15:31:19	104.4%	0.0116	100.9%	0.0060	-0.0072	0.0088	0.0117	0.0279
3	15:31:55	106.1%	0.0085	99.1%	0.0018	0.0171	0.0096	0.0093	0.0070
x		106.4%	0.0088	100.6%	0.0020	0.0119	0.0097	0.0118	0.0193
σ		2.1%	0.0027	1.3%	0.0039	0.0171	0.0010	0.0025	0.0109
%RSD		2.0	30.4824	1.3	193.1700	143.8878	10.7334	21.0180	56.5385

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	-0.0341	0.0007	100.4%	0.0466	0.0673	-0.0750	0.2006	100.2%
2	15:31:19	0.0014	0.0083	100.5%	-0.0643	0.1050	-0.1601	-0.1603	100.8%
3	15:31:55	-0.0162	0.0263	100.6%	0.0363	0.1040	0.0262	0.1709	101.2%
x		-0.0163	0.0118	100.5%	0.0062	0.0921	-0.0696	0.0704	100.7%
σ		0.0178	0.0132	0.1%	0.0613	0.0215	0.0932	0.2003	0.5%
%RSD		108.9689	111.8443	0.1	989.8106	23.3586	133.9037	284.5408	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	99.2%	0.0078	0.0030	97.2%	0.0090	0.0074	0.0076
2	15:31:19	99.9%	0.0071	-0.0004	99.3%	0.0100	0.0069	0.0079
3	15:31:55	100.1%	0.0048	0.0063	99.6%	0.0073	0.0109	0.0072
x		99.7%	0.0066	0.0030	98.7%	0.0088	0.0084	0.0076
σ		0.5%	0.0016	0.0033	1.3%	0.0014	0.0022	0.0004
%RSD		0.5	23.7421	111.7805	1.3	15.6539	26.0911	4.6858

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	103.0%	-0.0000	98.5%	-0.0214	0.0028	0.0304	0.0402	1.6206
2	15:34:52	100.4%	0.0014	98.4%	-0.0143	-0.0077	0.0401	0.0297	1.5946
3	15:35:28	98.2%	0.0012	96.4%	-0.0139	-0.0282	0.0363	0.0664	1.5833
x		100.5%	0.0009	97.8%	-0.0166	-0.0110	0.0356	0.0454	1.5995
σ		2.4%	0.0008	1.2%	0.0042	0.0157	0.0049	0.0189	0.0191
%RSD		2.4	89.5441	1.2	25.3399	142.5530	13.7154	41.5484	1.1969

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	1.5201	1.4835	97.6%	0.0298	1.7316	0.0148	0.1282	97.4%
2	15:34:52	1.7741	1.5529	97.7%	0.0474	1.5537	-0.5381	-0.0070	98.5%
3	15:35:28	1.6583	1.5407	97.3%	0.0058	1.8377	0.0001	0.0800	98.6%
x		1.6508	1.5257	97.5%	0.0276	1.7077	-0.1744	0.0670	98.2%
σ		0.1272	0.0370	0.2%	0.0208	0.1435	0.3151	0.0685	0.7%
%RSD		7.7034	2.4270	0.2	75.3796	8.4019	180.6745	102.2155	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	96.7%	0.0006	-0.0010	96.6%	0.0045	0.0041	0.0037
2	15:34:52	97.8%	0.0024	0.0036	98.4%	0.0045	0.0031	0.0039
3	15:35:28	98.5%	-0.0035	0.0015	99.2%	0.0056	0.0061	0.0048
x		97.7%	-0.0002	0.0013	98.0%	0.0048	0.0045	0.0041
σ		0.9%	0.0030	0.0023	1.3%	0.0006	0.0015	0.0006
%RSD		1.0	1708.4396	172.3995	1.4	12.8052	34.3843	14.4127

8/4/16

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8/4/14

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	106.2%	2.4815	99.0%	24.8782	24.9328	12.3757	12.6020	25.2201
2	15:38:24	102.7%	2.4700	98.0%	25.1597	24.6731	12.4229	12.5285	24.9248
3	15:39:01	100.4%	2.5132	95.8%	24.9560	25.0916	12.3734	12.5413	24.8817
x		103.1%	2.4883	97.6%	24.9979	24.8992	12.3907	12.5573	25.0089
σ		2.9%	0.0224	1.7%	0.1454	0.2113	0.0279	0.0393	0.1842
%RSD		2.8	0.8986	1.7	0.5816	0.8485	0.2255	0.3127	0.7366

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	28.5358	27.7279	96.9%	50.0927	51.7695	49.7783	49.6564	98.6%
2	15:38:24	28.6691	27.0726	99.0%	50.2693	50.7710	49.6180	49.7230	99.4%
3	15:39:01	28.4961	27.1119	98.3%	49.8056	49.9465	48.5312	48.2904	99.4%
x		28.5670	27.3042	98.0%	50.0559	50.8290	49.3092	49.2233	99.1%
σ		0.0906	0.3675	1.1%	0.2341	0.9129	0.6785	0.8086	0.5%
%RSD		0.3172	1.3459	1.1	0.4676	1.7960	1.3760	1.6427	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	97.8%	50.6951	50.3160	97.8%	49.3112	50.7057	49.9530
2	15:38:24	99.6%	49.9623	49.9085	99.5%	49.1451	51.1618	50.2489
3	15:39:01	99.0%	50.5094	50.1641	99.8%	49.1562	50.7982	50.0637
x		98.8%	50.3889	50.1295	99.0%	49.2042	50.8886	50.0885
σ		0.9%	0.3810	0.2059	1.1%	0.0929	0.2411	0.1495
%RSD		0.9	0.7560	0.4108	1.1	0.1888	0.4738	0.2985

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8/4/14

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	103.7%	2.5332	99.5%	25.0041	24.8065	12.4984	12.5503	24.7139
2	15:44:04	105.5%	2.4331	98.9%	25.3712	24.8044	12.5344	12.5670	24.9566
3	15:44:41	99.0%	2.5841	98.2%	24.2516	25.0867	12.6905	12.8397	24.8597
x		102.7%	2.5168	98.9%	24.8756	24.8992	12.5744	12.6523	24.8434
σ		3.4%	0.0769	0.7%	0.5708	0.1624	0.1021	0.1625	0.1221
%RSD		3.3	3.0538	0.7	2.2944	0.6523	0.8122	1.2842	0.4917

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	28.9598	27.6713	97.8%	49.6937	50.7125	47.7390	49.6992	98.0%
2	15:44:04	29.4333	27.8009	97.6%	50.2713	50.4056	49.0552	49.6964	98.3%
3	15:44:41	28.5876	27.1096	97.8%	49.6636	49.6851	49.1311	49.2629	99.6%
x		28.9936	27.5273	97.8%	49.8762	50.2677	48.6418	49.5528	98.6%
σ		0.4239	0.3675	0.1%	0.3425	0.5274	0.7828	0.2511	0.9%
%RSD		1.4621	1.3350	0.1	0.6867	1.0491	1.6092	0.5067	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	97.2%	50.3360	49.8830	95.7%	48.6040	50.0634	49.4156
2	15:44:04	97.8%	50.5638	49.9847	98.1%	48.3624	49.6911	49.2465
3	15:44:41	99.0%	50.1785	49.3890	98.5%	48.6843	50.3444	49.6146
x		98.0%	50.3594	49.7522	97.4%	48.5502	50.0330	49.4256
σ		0.9%	0.1937	0.3187	1.5%	0.1675	0.3277	0.1843
%RSD		0.9	0.3847	0.6405	1.6	0.3451	0.6549	0.3728

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	100.2%	0.0031	96.4%	0.0898	0.0723	0.1194	0.1227	0.5078
2	15:50:20	101.3%	0.0001	95.7%	0.0546	0.0812	0.1367	0.1254	0.4501
3	15:50:57	102.7%	-0.0008	95.7%	0.0608	0.0575	0.1281	0.1369	0.4489
x		101.4%	0.0008	95.9%	0.0684	0.0704	0.1281	0.1283	0.4689
σ		1.3%	0.0021	0.4%	0.0188	0.0120	0.0087	0.0076	0.0337
%RSD		1.2	253.6509	0.4	27.4689	17.0282	6.7621	5.8887	7.1884

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	0.5364	0.4670	96.5%	0.0726	1.6492	-0.4006	0.1902	96.2%
2	15:50:20	0.4899	0.4238	97.2%	-0.0654	1.8829	-0.1967	-0.1544	97.6%
3	15:50:57	0.4212	0.4675	97.5%	-0.0231	1.7430	-0.2282	-0.1248	98.4%
x		0.4825	0.4528	97.0%	-0.0053	1.7584	-0.2752	-0.0297	97.4%
σ		0.0579	0.0251	0.5%	0.0707	0.1176	0.1098	0.1910	1.1%
%RSD		12.0035	5.5394	0.5	1336.5650	6.6874	39.8850	643.5585	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	95.9%	0.0172	0.0078	94.6%	0.0168	0.0171	0.0164
2	15:50:20	96.6%	0.0215	0.0167	97.2%	0.0247	0.0282	0.0257
3	15:50:57	96.5%	0.0169	0.0125	97.5%	0.0274	0.0211	0.0229
x		96.3%	0.0185	0.0123	96.4%	0.0230	0.0221	0.0217
σ		0.4%	0.0025	0.0045	1.6%	0.0055	0.0056	0.0048
%RSD		0.4	13.6978	36.3160	1.6	23.8465	25.4513	21.9716

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	100.6%	0.0010	98.5%	-0.0184	-0.0095	0.0236	0.0311	0.0865
2	15:53:58	101.0%	-0.0011	98.1%	-0.0127	0.0074	0.0214	0.0122	0.0793
3	15:54:35	101.7%	-0.0004	99.1%	-0.0108	0.0144	0.0249	0.0091	0.0682
x		101.1%	-0.0002	98.6%	-0.0140	0.0041	0.0233	0.0175	0.0780
σ		0.6%	0.0011	0.5%	0.0040	0.0123	0.0017	0.0119	0.0092
%RSD		0.6	621.5486	0.5	28.4476	298.2166	7.5038	68.0863	11.8513

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	0.0574	0.0932	94.6%	0.0491	0.3340	-0.0369	0.1420	97.4%
2	15:53:58	0.0230	0.0632	97.4%	0.1128	0.3019	0.3517	0.3516	99.8%
3	15:54:35	0.0815	0.0817	98.8%	-0.0179	0.3469	-0.0938	-0.1719	99.4%
x		0.0540	0.0794	96.9%	0.0480	0.3276	0.0736	0.1072	98.8%
σ		0.0294	0.0151	2.1%	0.0654	0.0232	0.2424	0.2635	1.3%
%RSD		54.4248	19.0549	2.2	136.2832	7.0768	329.1971	245.7661	1.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	96.7%	-0.0080	-0.0089	96.1%	0.0036	0.0062	0.0042
2	15:53:58	98.7%	-0.0060	-0.0063	98.5%	0.0070	0.0072	0.0060
3	15:54:35	99.0%	-0.0026	-0.0082	98.6%	0.0058	0.0085	0.0068
x		98.1%	-0.0056	-0.0078	97.8%	0.0055	0.0073	0.0057
σ		1.3%	0.0027	0.0014	1.4%	0.0017	0.0011	0.0013
%RSD		1.3	49.4488	17.6897	1.5	31.6713	15.6197	23.6181

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	107.3%	20.8468	97.7%	21.7826	22.2098	22.1827	22.2289	21.7910
2	15:57:31	102.7%	21.8622	97.3%	21.7803	21.7440	21.8801	22.1210	22.3106
3	15:58:08	104.6%	21.4130	97.3%	22.0259	22.0099	22.4107	21.9345	22.3813
x		104.9%	21.3740	97.5%	21.8629	21.9879	22.1578	22.0948	22.1680
σ		2.3%	0.5088	0.2%	0.1412	0.2336	0.2661	0.1489	0.3275
%RSD		2.2	2.3806	0.2	0.6457	1.0626	1.2011	0.6740	1.4772

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	21.4202	21.8789	98.1%	21.6554	23.0374	21.1609	21.5495	97.7%
2	15:57:31	22.4016	22.0767	98.4%	22.0880	22.2971	21.3282	21.6736	97.2%
3	15:58:08	22.3866	21.9625	98.2%	21.9778	22.2335	21.4875	21.6853	98.3%
x		22.0695	21.9727	98.2%	21.9070	22.5227	21.3255	21.6361	97.8%
σ		0.5623	0.0993	0.1%	0.2248	0.4469	0.1633	0.0752	0.6%
%RSD		2.5481	0.4519	0.1	1.0263	1.9843	0.7659	0.3478	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	97.2%	21.8650	21.6409	96.4%	21.6222	21.5079	21.6232
2	15:57:31	98.6%	22.0165	21.6764	98.2%	21.7017	21.5448	21.6748
3	15:58:08	99.3%	21.7283	21.7217	99.1%	21.6012	21.6257	21.6991
x		98.4%	21.8700	21.6797	97.9%	21.6417	21.5595	21.6657
σ		1.1%	0.1442	0.0405	1.4%	0.0530	0.0602	0.0388
%RSD		1.1	0.6592	0.1867	1.4	0.2451	0.2794	0.1791

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	108.5%	-0.0007	99.0%	0.0387	0.0378	0.1323	0.1544	1.0409
2	16:01:28	103.7%	0.0122	95.9%	0.0410	0.0463	0.1470	0.1291	1.0761
3	16:02:04	101.3%	0.0113	98.1%	0.0398	0.0622	0.1485	0.1551	1.0481
x		104.5%	0.0076	97.7%	0.0398	0.0488	0.1426	0.1462	1.0550
σ		3.7%	0.0072	1.6%	0.0012	0.0124	0.0090	0.0148	0.0186
%RSD		3.5	95.1604	1.6	2.9163	25.4485	6.2800	10.1232	1.7604

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	1.1043	0.9774	97.7%	0.0758	1.7817	-0.4598	0.0700	97.7%
2	16:01:28	0.8953	0.9381	95.7%	-0.0495	2.1015	-0.0503	0.0216	97.2%
3	16:02:04	1.0311	0.9898	97.9%	-0.0586	1.9633	0.0138	-0.0574	97.6%
x		1.0103	0.9684	97.1%	-0.0107	1.9488	-0.1655	0.0114	97.5%
σ		0.1061	0.0270	1.2%	0.0751	0.1604	0.2570	0.0643	0.2%
%RSD		10.4978	2.7850	1.2	698.8406	8.2292	155.3050	564.9467	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	96.3%	0.0045	0.0040	95.9%	0.0309	0.0347	0.0290
2	16:01:28	96.9%	0.0079	0.0041	97.5%	0.0348	0.0361	0.0358
3	16:02:04	98.2%	0.0066	0.0142	98.4%	0.0363	0.0383	0.0387
x		97.1%	0.0063	0.0074	97.3%	0.0340	0.0364	0.0345
σ		1.0%	0.0017	0.0059	1.2%	0.0028	0.0018	0.0050
%RSD		1.0	26.8441	78.5456	1.3	8.2579	5.0458	14.5020

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	105.8%	24.7363	98.2%	25.7545	25.5584	25.1315	25.2519	25.7840
2	16:05:10	102.3%	24.6868	99.0%	25.4905	25.1486	24.7635	25.2669	25.5505
3	16:05:46	100.3%	24.6146	99.6%	25.2665	24.8390	24.8028	25.0468	25.1354
x		102.8%	24.6792	98.9%	25.5038	25.1820	24.8993	25.1885	25.4900
σ		2.8%	0.0612	0.7%	0.2443	0.3609	0.2021	0.1230	0.3285
%RSD		2.7	0.2479	0.7	0.9578	1.4330	0.8115	0.4883	1.2888

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	26.1223	25.3570	97.8%	25.1775	25.0620	25.8392	24.6146	98.6%
2	16:05:10	25.5515	25.3126	99.9%	25.3752	24.5947	24.9429	25.3141	99.0%
3	16:05:46	24.7302	24.7583	99.7%	24.9276	24.8762	25.1789	25.6995	99.5%
x		25.4680	25.1427	99.1%	25.1601	24.8443	25.3204	25.2094	99.0%
σ		0.6998	0.3336	1.2%	0.2243	0.2353	0.4646	0.5500	0.4%
%RSD		2.7478	1.3267	1.2	0.8915	0.9471	1.8347	2.1816	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	97.5%	24.8641	24.8259	98.2%	25.0333	24.8530	25.0661
2	16:05:10	99.8%	24.8740	24.6630	100.0%	25.1072	25.0653	25.1607
3	16:05:46	100.0%	24.8833	24.7352	100.2%	25.1722	25.2481	25.1943
x		99.1%	24.8738	24.7414	99.5%	25.1043	25.0555	25.1404
σ		1.4%	0.0096	0.0816	1.1%	0.0695	0.1977	0.0665
%RSD		1.4	0.0386	0.3300	1.1	0.2768	0.7892	0.2646

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	110.7%	0.0026	101.7%	-0.0038	0.0442	0.0095	0.0100	0.0267
2	16:14:10	105.0%	0.0031	101.3%	0.0035	0.0326	0.0055	0.0025	0.0219
3	16:14:47	102.8%	0.0024	101.5%	0.0003	0.0239	0.0168	0.0140	0.0041
x		106.1%	0.0027	101.5%	-0.0000	0.0335	0.0106	0.0088	0.0176
σ		4.1%	0.0003	0.2%	0.0037	0.0102	0.0057	0.0058	0.0119
%RSD		3.8	12.0980	0.2	26642.8290	30.3808	54.0039	65.7423	67.6377

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	-0.0158	0.0219	99.6%	-0.0428	0.1741	-0.1056	-0.0371	99.3%
2	16:14:10	0.0390	0.0192	98.7%	0.0639	-0.0051	0.3906	0.1930	100.1%
3	16:14:47	-0.0229	0.0164	101.3%	0.0114	0.1907	-0.1284	0.1882	101.5%
x		0.0001	0.0192	99.9%	0.0108	0.1199	0.0522	0.1147	100.3%
σ		0.0339	0.0028	1.3%	0.0533	0.1086	0.2933	0.1315	1.1%
%RSD		28273.6860	14.4764	1.3	492.8990	90.5581	561.7553	114.6503	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	98.7%	0.0088	0.0135	95.3%	0.0078	0.0097	0.0061
2	16:14:10	99.5%	0.0115	0.0113	97.6%	0.0055	0.0058	0.0055
3	16:14:47	99.9%	0.0133	0.0128	97.7%	0.0071	0.0094	0.0069
x		99.3%	0.0112	0.0125	96.9%	0.0068	0.0083	0.0062
σ		0.6%	0.0023	0.0011	1.3%	0.0012	0.0022	0.0007
%RSD		0.6	20.4867	9.1484	1.4	17.5686	26.3555	11.5269

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	111.8%	0.0229	102.0%	0.1743	0.1905	0.1063	0.1049	0.4778
2	16:17:49	104.0%	0.0222	100.0%	0.1824	0.2020	0.1002	0.0967	0.4777
3	16:18:26	106.4%	0.0231	101.5%	0.1656	0.1986	0.1063	0.1163	0.4734
x		107.4%	0.0227	101.1%	0.1741	0.1970	0.1043	0.1060	0.4763
σ		4.0%	0.0005	1.0%	0.0084	0.0059	0.0035	0.0098	0.0025
%RSD		3.7	2.1680	1.0	4.8449	3.0015	3.3565	9.2836	0.5279

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	0.4323	0.4966	100.5%	0.4621	1.1062	0.9738	0.8781	100.4%
2	16:17:49	0.4907	0.4686	101.0%	0.5552	1.0625	0.7480	1.1965	100.3%
3	16:18:26	0.3776	0.4669	102.4%	0.4937	1.0171	1.0332	0.9922	101.9%
x		0.4335	0.4774	101.3%	0.5037	1.0619	0.9183	1.0223	100.9%
σ		0.0565	0.0167	1.0%	0.0473	0.0446	0.1505	0.1614	0.9%
%RSD		13.0374	3.4921	1.0	9.3968	4.1963	16.3868	15.7840	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	99.4%	0.0477	0.0534	96.8%	0.0223	0.0267	0.0221
2	16:17:49	100.9%	0.0599	0.0576	99.1%	0.0259	0.0250	0.0260
3	16:18:26	100.5%	0.0517	0.0613	99.4%	0.0209	0.0259	0.0229
x		100.3%	0.0531	0.0574	98.4%	0.0231	0.0259	0.0237
σ		0.8%	0.0062	0.0039	1.4%	0.0026	0.0009	0.0020
%RSD		0.8	11.6343	6.8667	1.4	11.1832	3.3896	8.5979

Service Request # K1608207 (Redigest Zn)_____
Calibration _____080516AMS03_____
QC in calibration__080516AMS03_____
QC Service Request # K1608011_____
STARLIMS run # 508566_____
Cal Std: MS20-75F ICSA Std: MS20-68H
ICV Std: MS20-75G ICSAB Std: MS20-68I
LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD 5.0 limit?	X		
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb.

Primary Review by _____ Date 8/5/16
Secondary Review by _____ Date 8/5/16

R:\icp\misc\data review forms\6020 DoD Review Checklist

Data Review Form

Service Request #:	**K1608207**
Instrument ID#:	**K-ICP-MS-03**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080516AMS03.csv**
RUNNO:	**508566**

There are no issues to report.

Primary Approver: _____ 8/5/16

Secondary Approver: _____ 8/5/16

Sample List

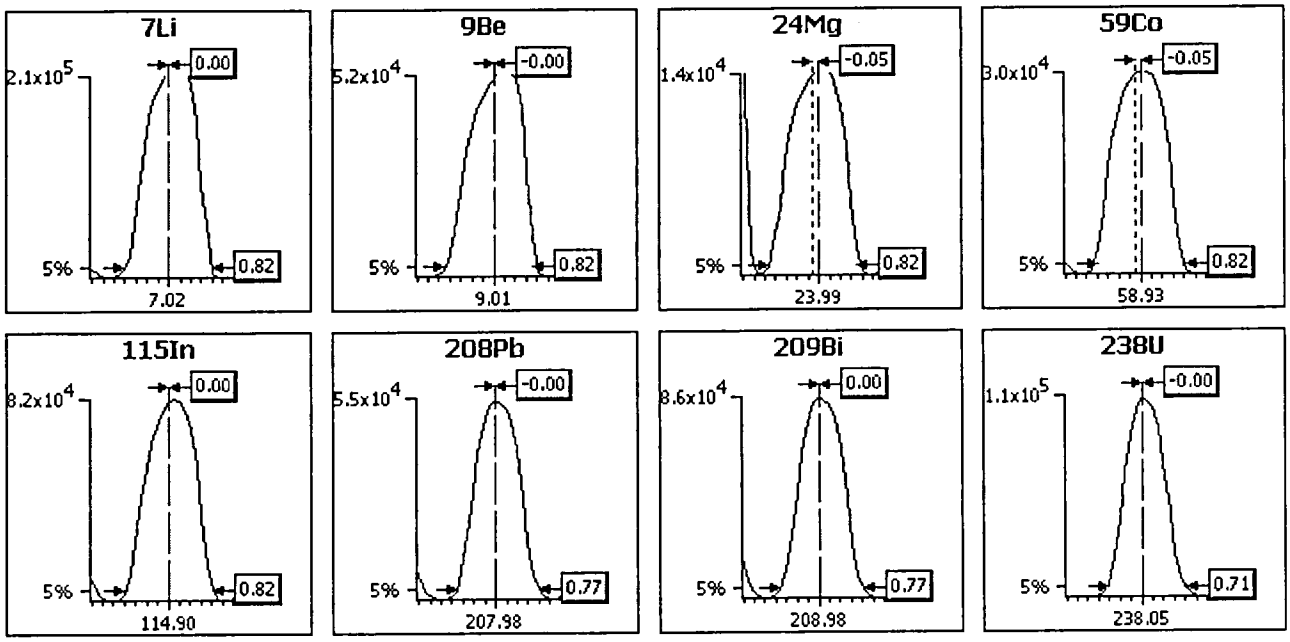
No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal. Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	CCB1	Unknown	1.000	0	1	1	145
7	LLICVW	Unknown	1.000	0	1	4	145
8	LRSTD	Unknown	1.000	1	1	1	145
9	ICSA	Unknown	1.000	0	1	5	145
10	ICSAB	Unknown	1.000	0	1	6	145
11	KQ1609201-01	Unknown	1.000	1	1	2	145
12	KQ1609201-02	Unknown	1.000	1	1	3	145
13	KQ1609201-03	Unknown	1.000	1	1	4	145
14	K1608011-007	Unknown	1.000	1	1	5	145
15	K1608011-007L	Unknown	1.000	1	1	6	145
16	K1608011-007A	Unknown	1.000	1	1	7	145
17	CCV2	Unknown	1.000	0	1	2	145
18	CCB2	Unknown	1.000	0	1	1	145
19	K1608207-015	Unknown	1.000	1	1	8	145
20	K1608209-015	Unknown	1.000	1	1	9	145
21	K1608210-015	Unknown	1.000	1	1	10	145
22	K1608325-014	Unknown	1.000	1	1	11	145
23	K1608344-013	Unknown	1.000	1	1	12	145
24	CCV3	Unknown	1.000	0	1	2	145
25	CCB3	Unknown	1.000	0	1	1	145
26	LLCCVW	Unknown	1.000	0	1	4	145

Performance Report

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.82	0.00
9Be	0.90	0.60	0.10	0.82	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.82	-0.05
115In	0.90	0.60	0.10	0.82	0.00
208Pb	0.90	0.60	0.10	0.77	-0.00
209Bi	0.90	0.60	0.10	0.77	0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	4.7
Focus	23.3
D1	-36.1
Pole Bias	0.3
Hexapole Bias	0.5
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-18.8
Lens 3	-200.0
Forward power	1357
Horizontal	150
Vertical	376
D2	-155
DA	-32.2
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	5:30:15 AM	0.250	219395.58	53374.477	14441.211	31635.198	85381.324	92278.225	1774.173	56833.348
2	5:31:28 AM	0.000	216799.65	52320.376	14251.662	31323.371	86029.139	93384.435	1717.412	57698.774
3	5:32:41 AM	0.000	212527.02	51402.663	14162.774	30968.157	85969.579	93441.517	1725.164	58051.257
4	5:33:53 AM	0.000	213919.62	51531.137	14088.158	31135.226	85938.285	93292.751	1749.168	58103.338
5	5:35:06 AM	0.000	216540.33	51523.343	13862.561	30871.830	85756.582	93084.886	1729.665	58561.766
x		0.050	215836.44	52030.400	14161.273	31186.756	85814.982	93096.363	1739.116	57849.697
σ		0.11	2679.42	835.32	212.79	303.88	262.89	477.01	22.83	645.71
%RSD		223.607	1.241	1.605	1.503	0.974	0.306	0.512	1.313	1.116

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	5:30:15 AM	88868.506	0.000	111865.05
2	5:31:28 AM	89567.314	0.000	113541.39
3	5:32:41 AM	90686.578	0.000	114116.27
4	5:33:53 AM	90799.699	0.000	114493.72
5	5:35:06 AM	90896.408	0.000	115034.49
x		90163.701	0.000	113810.18
σ		901.11	0.00	1216.10
%RSD		0.999	0.000	1.069

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	5:30:15 AM	0.019
2	5:31:28 AM	0.018
3	5:32:41 AM	0.018
4	5:33:53 AM	0.019
5	5:35:06 AM	0.019
x		0.0187
σ		0.00
%RSD		1.7832

Result : The performance report passed.

Dilution Corrected Concentrations

Cal. Blk 8/5/2016 5:39:58 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:39:58	-0.0118	0.0254	-0.0079	101.3%
2	05:40:09	0.0042	-0.0069	0.0063	100.9%
3	05:40:20	0.0075	-0.0185	0.0016	97.8%
x		-0.0000	-0.0000	0.0000	100.0%
σ		0.0103	0.0227	0.0073	1.9%
%RSD		0.0000	0.0000	0.0000	1.9

Cal. Stn 8/5/2016 5:42:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:42:12	25.0514	25.1194	24.6140	101.9%
2	05:42:22	25.2973	24.9918	25.3554	101.4%
3	05:42:33	24.6514	24.8888	25.0306	101.5%
x		25.0000	25.0000	25.0000	101.6%
σ		0.3260	0.1155	0.3717	0.3%
%RSD		1.3040	0.4619	1.4866	0.2

ICV1 8/5/2016 5:44:25 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:44:25	25.6702	29.6890	28.0159	100.5%
2	05:44:36	25.8448	29.9538	28.2114	100.4%
3	05:44:46	24.8765	28.5581	27.7659	101.1%
x		25.4638	29.4003	27.9977	100.7%
σ		0.5161	0.7412	0.2233	0.4%
%RSD		2.0267	2.5212	0.7976	0.4

CCV1 8/5/2016 5:46:39 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:46:39	25.3786	25.3760	25.4165	101.3%
2	05:46:50	25.0295	25.0916	24.9740	100.3%
3	05:47:00	25.2207	25.0019	24.5342	101.7%
x		25.2096	25.1565	24.9749	101.1%
σ		0.1748	0.1953	0.4411	0.7%
%RSD		0.6934	0.7763	1.7663	0.7

ICB1 8/5/2016 5:48:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:48:52	0.0726	0.0641	0.0891	101.6%
2	05:49:03	0.0731	0.1062	0.0653	99.7%
3	05:49:14	0.0719	0.0523	0.0796	100.5%
x		0.0725	0.0742	0.0780	100.6%
σ		0.0006	0.0283	0.0120	1.0%
%RSD		0.8264	38.1977	15.3424	1.0

CCB1 8/5/2016 5:57:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:57:26	-0.0388	-0.0200	-0.0370	101.0%
2	05:57:36	-0.0361	-0.0190	-0.0263	98.8%
3	05:57:47	-0.0478	0.0079	-0.0433	98.5%
x		-0.0409	-0.0104	-0.0355	99.4%
σ		0.0061	0.0158	0.0086	1.3%
%RSD		14.9863	152.7485	24.2370	1.3

LLICVW 8/5/2016 5:59:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:59:40	0.4505	0.4323	0.4425	99.2%
2	05:59:50	0.4367	0.4668	0.4864	97.7%
3	06:00:01	0.4301	0.3869	0.5136	97.5%
x		0.4391	0.4287	0.4808	98.2%
σ		0.0104	0.0401	0.0359	0.9%
%RSD		2.3645	9.3553	7.4625	0.9

LRSTD 8/5/2016 6:01:54 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:01:54	206.0177	206.6226	202.9570	98.5%
2	06:02:05	204.4385	201.2339	200.8658	99.6%
3	06:02:16	202.8644	204.3904	203.1290	99.2%
x		204.4402	204.0823	202.3173	99.1%
σ		1.5766	2.7075	1.2599	0.5%
%RSD		0.7712	1.3267	0.6228	0.5

ICSA 8/5/2016 6:05:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:05:52	2.0193	5.1031	1.7801	93.1%
2	06:06:03	2.0224	5.0883	1.7642	93.3%
3	06:06:14	2.0764	4.7413	1.8605	93.3%
x		2.0394	4.9776	1.8016	93.2%
σ		0.0321	0.2048	0.0516	0.2%
%RSD		1.5751	4.1136	2.8656	0.2

ICSAB 8/5/2016 6:08:08 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:08:08	26.6336	28.2492	24.3451	91.8%
2	06:08:19	26.4267	28.1931	24.7238	93.0%
3	06:08:29	26.2232	28.9694	24.6132	93.1%
x		26.4278	28.4705	24.5607	92.6%
σ		0.2052	0.4329	0.1947	0.7%
%RSD		0.7765	1.5205	0.7928	0.8

KQ1609201-01 8/5/2016 6:10:22 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:10:22	-0.0214	-0.0032	-0.0109	94.9%
2	06:10:32	-0.0145	0.0598	-0.0137	94.6%
3	06:10:43	-0.0069	0.0617	-0.0219	93.1%
x		-0.0143	0.0394	-0.0155	94.2%
σ		0.0073	0.0369	0.0057	1.0%
%RSD		50.9433	93.6065	36.6097	1.0

KQ1609201-02 8/5/2016 6:12:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:12:34	24.0525	27.2375	26.8497	95.6%
2	06:12:45	23.8612	28.1148	26.3448	94.9%
3	06:12:55	23.7234	27.8112	26.8798	94.1%
x		23.8790	27.7212	26.6914	94.9%
σ		0.1653	0.4456	0.3006	0.7%
%RSD		0.6923	1.6073	1.1260	0.8

KQ1609201-03 8/5/2016 6:14:46 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:14:46	24.0373	28.3844	27.0564	95.8%
2	06:14:57	24.2141	27.4928	26.8380	96.2%
3	06:15:08	24.8982	28.6710	26.4043	94.0%
x		24.3832	28.1827	26.7663	95.4%
σ		0.4547	0.6145	0.3319	1.2%
%RSD		1.8647	2.1803	1.2401	1.2

K1608011-007 8/5/2016 6:16:59 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:16:59	0.2927	0.3545	0.2731	95.7%
2	06:17:10	0.3067	0.3661	0.2769	94.6%
3	06:17:21	0.2960	0.3294	0.3064	95.1%
x		0.2985	0.3500	0.2855	95.1%
σ		0.0074	0.0188	0.0182	0.5%
%RSD		2.4652	5.3692	6.3785	0.6

K1608011-007L 8/5/2016 6:19:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:19:12	0.3974	0.3297	0.3730	96.7%
2	06:19:23	0.4467	0.4764	0.4205	94.8%
3	06:19:34	0.4724	0.4728	0.4131	94.2%
x		0.4388	0.4263	0.4022	95.2%
σ		0.0381	0.0837	0.0255	1.3%
%RSD		8.6846	19.6320	6.3415	1.3

K1608011-007A 8/5/2016 6:21:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:21:26	22.7930	23.0239	22.6704	95.8%
2	06:21:37	22.3784	22.8072	22.2122	94.6%
3	06:21:48	22.2870	22.4722	21.8112	95.7%
x		22.4861	22.7678	22.2313	95.4%
σ		0.2696	0.2780	0.4299	0.7%
%RSD		1.1991	1.2208	1.9339	0.7

CCV2 8/5/2016 6:23:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:23:40	24.5378	25.0376	24.9515	96.2%
2	06:23:51	24.7700	25.0390	24.9692	95.0%
3	06:24:02	25.0346	25.3246	24.7635	95.1%
x		24.7808	25.1337	24.8947	95.4%
σ		0.2486	0.1653	0.1140	0.6%
%RSD		1.0032	0.6576	0.4580	0.7

CCB2 8/5/2016 6:25:53 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:25:53	-0.0169	0.0107	-0.0213	94.9%
2	06:26:04	-0.0268	-0.0249	-0.0298	97.1%
3	06:26:15	-0.0110	-0.0167	0.0014	94.3%
x		-0.0182	-0.0103	-0.0166	95.4%
σ		0.0080	0.0187	0.0161	1.5%
%RSD		43.7226	180.9580	97.4558	1.5

K1608207-015 8/5/2016 6:28:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:28:06	0.3308	0.3330	0.2859	94.2%
2	06:28:17	0.2970	0.3973	0.3275	93.9%
3	06:28:28	0.3259	0.3241	0.3013	93.0%
x		0.3179	0.3514	0.3049	93.7%
σ		0.0182	0.0399	0.0210	0.7%
%RSD		5.7386	11.3615	6.8975	0.7

K1608209-015 8/5/2016 6:30:20 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:30:20	0.4010	0.4068	0.4051	93.4%
2	06:30:31	0.3375	0.3609	0.3307	94.2%
3	06:30:42	0.3547	0.4690	0.3844	93.6%
x		0.3644	0.4122	0.3734	93.8%
σ		0.0328	0.0543	0.0384	0.4%
%RSD		9.0135	13.1705	10.2791	0.4

K1608210-015 8/5/2016 6:32:36 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:32:36	0.2816	0.2995	0.2888	93.8%
2	06:32:47	0.2743	0.3900	0.2807	94.0%
3	06:32:57	0.2887	0.3743	0.2547	92.8%
x		0.2815	0.3546	0.2748	93.6%
σ		0.0072	0.0484	0.0178	0.6%
%RSD		2.5706	13.6407	6.4898	0.7

K1608325-014 8/5/2016 6:34:51 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:34:51	0.4234	0.5461	0.4245	92.6%
2	06:35:02	0.3883	0.4967	0.3946	93.7%
3	06:35:13	0.4344	0.4484	0.3683	92.3%
x		0.4153	0.4971	0.3958	92.9%
σ		0.0241	0.0488	0.0281	0.8%
%RSD		5.8036	9.8213	7.1022	0.8

K1608344-013 8/5/2016 6:37:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:37:06	0.5489	0.4987	0.4725	94.6%
2	06:37:17	0.5154	0.5805	0.5625	93.8%
3	06:37:28	0.5511	0.5989	0.5334	93.2%
x		0.5385	0.5594	0.5228	93.9%
σ		0.0200	0.0533	0.0459	0.7%
%RSD		3.7174	9.5304	8.7855	0.7

CCV3 8/5/2016 6:39:21 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:39:21	25.2609	25.7288	24.8825	94.6%
2	06:39:32	24.4702	24.7630	24.3337	95.1%
3	06:39:43	24.5560	24.4272	23.9673	96.2%
x		24.7624	24.9730	24.3945	95.3%
σ		0.4339	0.6757	0.4606	0.8%
%RSD		1.7522	2.7057	1.8882	0.9

CCB3 8/5/2016 6:41:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:41:34	-0.0182	-0.0102	-0.0126	95.1%
2	06:41:45	-0.0234	0.0042	-0.0016	94.4%
3	06:41:56	-0.0090	-0.0239	-0.0079	94.8%
x		-0.0169	-0.0100	-0.0074	94.7%
σ		0.0073	0.0141	0.0055	0.4%
%RSD		43.0510	140.4253	74.6547	0.4

LLCCVW 8/5/2016 6:43:50 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:43:50	0.4768	0.3745	0.4139	95.8%
2	06:44:00	0.4794	0.4953	0.4537	96.3%
3	06:44:12	0.4501	0.4373	0.4428	95.6%
x		0.4687	0.4357	0.4368	95.9%
σ		0.0162	0.0604	0.0206	0.4%
%RSD		3.4595	13.8632	4.7129	0.4

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 26, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on September 12, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37049:

SDG #	Fraction:
K1608207 K160820, K1608210, K1608325, K1608344	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #37049 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	(4) Metals (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	K1608207	09/12/16	09/26/16	1	4																														
A	K1608207	09/12/16	09/26/16	0	5																														
B	K1608209	09/12/16	09/26/16	1	9																														
C	K1608210	09/12/16	09/26/16	1	9																														
D	K1608325	09/12/16	09/26/16	1	13																														
E	K1608344	09/12/16	09/26/16	1	9																														
Total	J/PG			5	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\37049ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDGs: K1608207, K1608209, K1608210, K1608325, K1608344

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 23, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the July 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilution, laboratory control sample (LCS), field duplicate samples, split samples, and internal standards. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, split samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the method were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the method blanks reviewed by ADR with the exception of copper, lead, and zinc. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608207/ 6020A	ICB/CCB	Antimony Lead	0.020 ug/L 0.008 ug/L	All water samples in SDG K1608207
K1608207/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816
K1608209/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FTBL-SS-B34-0-6-071916
K1608209/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608209
K1608210/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608210

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608325/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B03-0-6-072116 FD072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116
K1608325/ 6020A	ICB/CCB	Antimony Lead	0.013 ug/L 0.008 ug/L	All water samples in SDG K1608325
K1608344/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FD072016
K1608344/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	EB072016

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1608207/ 6020A	EB071816	Lead	0.038 ug/L	0.038U ug/L
K1608209/ 6020A	EB071916	Lead	0.018 ug/L	0.018U ug/L
K1608210/ 6020A	EB071516	Lead	0.019 ug/L	0.019U ug/L
K1608325/ 6020A	FD072116	Antimony	0.093 mg/Kg	0.093U mg/Kg
K1608325/ 6020A	EB072116	Antimony Lead	0.012 ug/L 0.022 ug/L	0.012U ug/L 0.022U ug/L
K1608344/ 6020A	FD072016	Antimony	0.152 mg/Kg	0.152U mg/Kg
K1608344/ 6020A	EB072016	Antimony Lead	0.007 ug/L 0.034 ug/L	0.007U ug/L 0.034U ug/L

VI. Field Blanks

Ten equipment blanks were collected and analyzed for metals. One equipment blank had detections for copper, lead, and zinc. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of four MS/MSD pairs for antimony and lead. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R or serial dilution %R were within QC limits. The details are provided in Enclosures I and II.

X. Duplicate Sample Analysis/Triplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) and triplicate (TRP) analyses specified for the samples in these SDGs, and therefore duplicate and triplicate analyses were not performed for these SDGs.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XIII. Field Duplicates

Five field duplicate pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of antimony, copper, and lead in three duplicate pairs. The associated sample results were qualified as detected estimated (J). The field duplicate result comparisons are provided in Enclosure I.

Four split sample pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of lead in one split sample pair. The associated sample results were qualified as detected estimated (J). No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The split sample comparisons are provided in Enclosures I and II.

XIV. Internal Standards

All internal standard areas percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to field duplicate RPD and results reported below the LOQ, data were qualified as estimated in eight samples.

Due to split sample RPD, data were qualified as estimated in two samples.

Due to method blank contamination, data were qualified as not detected in four samples.

Due to calibration blank contamination, data were qualified as not detected in seven samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2016	FD071516	K1608210-012	FD	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B27-0-6-071516	K1608210-003	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B28-0-6-071516	K1608210-004	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B29-0-6-071516	K1608210-005	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B30-0-6-071516	K1608210-006	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B39-0-6-071516	K1608210-010	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B40-0-6-071516	K1608210-011	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B41-0-6-071516	K1608210-014	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B42-0-6-071516	K1608210-013	N	EPA 3050B	6020A	III
15-Jul-2016	EB071516	K1608210-015	EB	CLFAA	6020A	III
15-Jul-2016	EB071516RE	K1608210-015RE	EB	CLFAA	6020A	III
18-Jul-2016	FD071816	K1608207-014	FD	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B60-0-6-071816	K1608207-006	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B59-0-6-071816	K1608207-005	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B58-0-6-071816	K1608207-004	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816	K1608207-003	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	MS	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MSD	K1608207-003SD	MSD	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B52-0-6-071816	K1608207-011	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B51-0-6-071816	K1608207-010	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B53-0-6-071816	K1608207-012	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B54-0-6-071816	K1608207-013	N	EPA 3050B	6020A	III
18-Jul-2016	EB071816	K1608207-015	EB	CLFAA	6020A	III
18-Jul-2016	EB071816RE	K1608207-015RE	EB	CLFAA	6020A	III
19-Jul-2016	FD071916	K1608209-014	FD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B33-0-6-071916	K1608209-004	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Jul-2016	FTBL-SS-B34-0-6-071916	K1608209-005	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B35-0-6-071916	K1608209-006	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B36-0-6-071916	K1608209-007	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916	K1608209-010	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	MS	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MSD	K1608209-010SD	MSD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B46-0-6-071916	K1608209-011	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B47-0-6-071916	K1608209-012	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B48-0-6-071916	K1608209-013	N	EPA 3050B	6020A	III
19-Jul-2016	EB071916	K1608209-015	EB	CLFAA	6020A	III
19-Jul-2016	EB071916RE	K1608209-015RE	EB	CLFAA	6020A	III
20-Jul-2016	FD072016	K1608344-012	FD	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B21-0-6-072016	K1608344-002	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B22-0-6-072016	K1608344-003	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B23-0-6-072016	K1608344-004	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B24-0-6-072016	K1608344-005	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B15-0-6-072016	K1608344-008	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B16-0-6-072016	K1608344-009	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B17-0-6-072016	K1608344-010	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016	K1608344-011	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	MS	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MSD	K1608344-011SD	MSD	EPA 3050B	6020A	III
20-Jul-2016	EB072016	K1608344-013	EB	CLFAA	6020A	III
20-Jul-2016	EB072016RE	K1608344-013RE	EB	CLFAA	6020A	III
21-Jul-2016	FD072116	K1608325-010	FD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B09-0-6-072116	K1608325-003	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-Jul-2016	FTBL-SS-B11-0-6-072116	K1608325-005	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B10-0-6-072116	K1608325-004	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B12-0-6-072116	K1608325-006	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B07-0-12-072116	K1608325-001	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B08-0-12-072116	K1608325-002	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116	K1608325-009	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	MS	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MSD	K1608325-009SD	MSD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116	K1608325-011	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116RE	K1608325-011RE	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B05-0-6-072116	K1608325-012	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B06-0-6-072116	K1608325-013	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B01-0-12-072116	K1608325-007	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B02-0-12-072116	K1608325-008	N	EPA 3050B	6020A	III
21-Jul-2016	EB072116	K1608325-014	EB	CLFAA	6020A	III
21-Jul-2016	EB072116RE	K1608325-014RE	EB	CLFAA	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608207

Method Category: METALS

Method: 6020A **Matrix:** Soil

Sample ID: FD071816 **Collected:** 7/18/2016 12:00:00 AM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.166	J	0.021	LOD	0.043	LOQ	mg/Kg	J	Fd
COPPER	9.95	=	0.043	LOD	0.085	LOQ	mg/Kg	J	Fd
LEAD	21.2	J	0.011	LOD	0.043	LOQ	mg/Kg	J	Fd

Sample ID: FTBL-SS-B54-0-6-071816 **Collected:** 7/18/2016 12:20:00 PM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	2.16	J	0.023	LOD	0.046	LOQ	mg/Kg	J	Fd
COPPER	40.1	=	0.046	LOD	0.091	LOQ	mg/Kg	J	Fd
LEAD	330	J	0.011	LOD	0.046	LOQ	mg/Kg	J	Fd

Method Category: METALS

Method: 6020A **Matrix:** Water

Sample ID: EB071816 **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Initial/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.038	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Sample ID: EB071816RE **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Reanalysis-1/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608209

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608209

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/19/2016 12:00:00

Sample ID: FD071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.957	J	0.019	LOD	0.038	LOQ	mg/Kg	J	Fd
LEAD	169	J	0.009	LOD	0.038	LOQ	mg/Kg	J	Fd

7/19/2016 11:25:00

Sample ID: FTBL-SS-B45-0-6-071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.543	J	0.018	LOD	0.036	LOQ	mg/Kg	J	Fd
LEAD	56.0	J	0.009	LOD	0.036	LOQ	mg/Kg	J	Fd, ProfJudg

Method Category: METALS

Method: 6020A **Matrix:** Water

7/19/2016 1:50:00

Sample ID: EB071916 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.018	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/19/2016 1:50:00

Sample ID: EB071916RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608210

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/15/2016 12:00:00

Sample ID: FD071516 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.353	J	0.020	LOD	0.041	LOQ	mg/Kg	J	Fd

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608210

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/15/2016 12:20:00

Sample ID: FTBL-SS-B42-0-6-071516 *Collected:* PM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.894	J	0.019	LOD	0.039	LOQ	mg/Kg	J	Fd

Method Category: METALS

Method: 6020A **Matrix:** Water

7/15/2016 3:15:00

Sample ID: EB071516 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.019	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/15/2016 3:15:00

Sample ID: EB071516RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608325

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/21/2016 12:00:00

Sample ID: FD072116 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.093	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.012	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608325

Method Category: METALS

Method: 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.13	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.022	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

7/21/2016 1:50:00

Sample ID: EB072116RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608344

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/20/2016 12:00:00

Sample ID: FD072016 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.152	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A **Matrix:** Water

7/20/2016 1:50:00

Sample ID: EB072016 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.007	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
COPPER	0.15	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.034	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Fd	Field Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

K1608207

Method Blank Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071816 FTBL-SS-B51-0-6-071816 FTBL-SS-B52-0-6-071816 FTBL-SS-B53-0-6-071816 FTBL-SS-B54-0-6-071816 FTBL-SS-B57-0-6-071816 FTBL-SS-B58-0-6-071816 FTBL-SS-B59-0-6-071816 FTBL-SS-B60-0-6-071816

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071816

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B57-0-6-071816MS (Dry) FTBL-SS-B57-0-6-071816MSD (Dry) (FTBL-SS-B57-0-6-071816)	ANTIMONY LEAD	38 -	38 83	72.00-124.00 84.00-118.00	- -	ANTIMONY LEAD	No Qual, Sb, Post Spike = 102% Pb, Serial Dilution OK

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B54-0-6-071816 (Dry)	FD071816 (Dry)			
ZINC	67.3	110	48	50.00	No Qualifiers Applied
ANTIMONY	2.16	0.166	171	50.00	J(all detects)
COPPER	40.1	9.95	120	50.00	
LEAD	330	21.2	176	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071816RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049A4a
SDG #: K1608207
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR~~IV~~
SD

Date: 9/15/18
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. MSD = %Rec out; PB ok, %RPD ok, SER ok = NA
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	SER=(-)
X.	Laboratory control samples	N	Not reviewed for ADR validation.
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	FTBL-SS-B52-0-6-071816	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	EB071816	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 31049A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: 3D
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DUP-11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.020	0.1										
Pb			0.008	0.04	0.038									

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Quality Control
Outlier Reports

K1608209

Method Blank Outlier Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609300-03	8/24/2016 9:32:00 PM	LEAD	0.006 mg/Kg	FD071916 FTBL-SS-B33-0-6-071916 FTBL-SS-B34-0-6-071916 FTBL-SS-B35-0-6-071916 FTBL-SS-B36-0-6-071916 FTBL-SS-B45-0-6-071916 FTBL-SS-B46-0-6-071916 FTBL-SS-B47-0-6-071916 FTBL-SS-B48-0-6-071916

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071916

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071916(Initial/TOT)	LEAD	0.018 ug/L	0.018U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	LEAD	123	134	84.00-118.00	-	LEAD	No Qual, Serial Dilution OK
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	ANTIMONY	42	41	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 98%

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B45-0-6-071916 (Dry)	FD071916 (Dry)			
COPPER	18.7	24.0	25	50.00	No Qualifiers Applied
ZINC	54.7	61.6	12	50.00	
ANTIMONY	0.543	0.957	55	50.00	J(all detects)
LEAD	56.0	169	100	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071916	COPPER LEAD	J J	0.07 0.018	0.10 0.020	LOQ LOQ	ug/L ug/L	J (all detects)
EB071916RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049B4a
SDG #: K1608209
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/8/16
Page: 1 of 1
Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD: Sb out; Ba ok; SER ok = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (5)
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	SW	SD = (5, FTBL-SS-B45-0-6-071916-DA) (SDG: FA355653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B33-0-6-071916	K1608209-004	Soil	07/19/16
2	FTBL-SS-B34-0-6-071916	K1608209-005	Soil	07/19/16
3	FTBL-SS-B35-0-6-071916	K1608209-006	Soil	07/19/16
4	FTBL-SS-B36-0-6-071916	K1608209-007	Soil	07/19/16
5	FTBL-SS-B45-0-6-071916	K1608209-010	Soil	07/19/16
6	FTBL-SS-B46-0-6-071916	K1608209-011	Soil	07/19/16
7	FTBL-SS-B47-0-6-071916	K1608209-012	Soil	07/19/16
8	FTBL-SS-B48-0-6-071916	K1608209-013	Soil	07/19/16
9	FD071916	K1608209-014	Soil	07/19/16
10	EB071916	K1608209-015	Water	07/19/16
11	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	Soil	07/19/16
12	FTBL-SS-B45-0-6-071916MSD	K1608209-010MSD	Soil	07/19/16
13				
14				
15				

LDC #: 37044B4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: JD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, (Co) (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC:11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Comments: Mercury by CVAA if performed

LDC #: 37049B4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 2

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.092	0.23										

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.018									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049B4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Page: 1 of
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	5	FTBL-SS-B45-0-6-071916-QA (SDG: FA35653)		
Antimony	0.543	2.1	118	NQ
Copper	18.7	17.3	8	
Lead	56.0	215	117	Jdet/A (det)
Zinc	54.7	48.1	13	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049B4a.wpd

Quality Control
Outlier Reports

K1608210

Method Blank Outlier Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071516 FTBL-SS-B27-0-6-071516 FTBL-SS-B28-0-6-071516 FTBL-SS-B29-0-6-071516 FTBL-SS-B30-0-6-071516 FTBL-SS-B39-0-6-071516 FTBL-SS-B40-0-6-071516 FTBL-SS-B41-0-6-071516 FTBL-SS-B42-0-6-071516

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071516

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071516(Initial/TOT)	LEAD	0.019 ug/L	0.019U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071516	COPPER LEAD	J J	0.07 0.019	0.10 0.020	LOQ LOQ	ug/L ug/L	J (all detects)
EB071516RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B42-0-6-071516 (Dry)	FD071516 (Dry)			
COPPER	24.1	23.3	3	50.00	No Qualifiers Applied
LEAD	122	110	10	50.00	
ZINC	68.8	76.6	11	50.00	
ANTIMONY	0.894	0.353	87	50.00	J(all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049C4a
SDG #: K1608210
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (B, FTBL-SS-B27-0-6-071516-DA) (SDG: FA35653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B27-0-6-071516	K1608210-003	Soil	07/15/16
2	FTBL-SS-B28-0-6-071516	K1608210-004	Soil	07/15/16
3	FTBL-SS-B29-0-6-071516	K1608210-005	Soil	07/15/16
4	FTBL-SS-B30-0-6-071516	K1608210-006	Soil	07/15/16
5	FTBL-SS-B39-0-6-071516	K1608210-010	Soil	07/15/16
6	FTBL-SS-B40-0-6-071516	K1608210-011	Soil	07/15/16
7	FD071516	K1608210-012	Soil	07/15/16
8	FTBL-SS-B42-0-6-071516	K1608210-013	Soil	07/15/16
9	FTBL-SS-B41-0-6-071516	K1608210-014	Soil	07/15/16
10	EB071516	K1608210-015	Water	07/15/16
11	FTBL-SS-B27-0-6-071516MS	K1608210-003MS	Soil	07/15/16
12	FTBL-SS-B27-0-6-071516MSD	K1608210-003MSD	Soil	07/15/16
13				
14				
15				

LDC #: 37046C4A

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049C4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.019									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049C4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: 3D
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y/N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B42-0-6-071516-QA (SDG: FA35653)		
Antimony	0.894	0.83U	7	
Copper	24.1	24.4	1	
Lead	122	102	18	
Zinc	68.8	61.8	11	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049C4a.wpd

Quality Control
Outlier Reports

K1608325

Method Blank Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609275-03	8/24/2016 5:38:00 PM	COPPER LEAD ZINC	0.035 mg/Kg 0.038 mg/Kg 0.36 mg/Kg	FD072116 FTBL-SS-B01-0-12-072116 FTBL-SS-B02-0-12-072116 FTBL-SS-B03-0-6-072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B04-0-6-072116RE FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116 FTBL-SS-B07-0-12-072116 FTBL-SS-B08-0-12-072116 FTBL-SS-B09-0-6-072116 FTBL-SS-B10-0-6-072116 FTBL-SS-B11-0-6-072116 FTBL-SS-B12-0-6-072116

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072116

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072116(Initial/TOT)	COPPER	0.13 ug/L	0.13U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B03-0-6-072116MS (Dry) FTBL-SS-B03-0-6-072116MSD (Dry) (FTBL-SS-B03-0-6-072116)	ANTIMONY	50	50	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 101%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072116	ANTIMONY	J	0.012	0.050	LOQ	ug/L	J (all detects)
EB072116RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B03-0-6-072116 (Dry)	FD072116 (Dry)			
ANTIMONY	0.136	0.093	38	50.00	No Qualifiers Applied
COPPER	9.48	7.54	23	50.00	
LEAD	23.6	15.0	45	50.00	
ZINC	45.5	47.2	4	50.00	

LDC #: 37049D4a
SDG #: K1608325
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16

Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D = SB out; PS in = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (9)
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (9, FTBL-SS-B03-0-6-072116-2A)
XII.	Internal Standard (ICP-MS)	A	(SD6: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B07-0-12-072116	K1608325-001	Soil	07/21/16
2	FTBL-SS-B08-0-12-072116	K1608325-002	Soil	07/21/16
3	FTBL-SS-B09-0-6-072116	K1608325-003	Soil	07/21/16
4	FTBL-SS-B10-0-6-072116	K1608325-004	Soil	07/21/16
5	FTBL-SS-B11-0-6-072116	K1608325-005	Soil	07/21/16
6	FTBL-SS-B12-0-6-072116	K1608325-006	Soil	07/21/16
7	FTBL-SS-B01-0-12-072116	K1608325-007	Soil	07/21/16
8	FTBL-SS-B02-0-12-072116	K1608325-008	Soil	07/21/16
9	FTBL-SS-B03-0-6-072116	K1608325-009	Soil	07/21/16
10	FD072116	K1608325-010	Soil	07/21/16
11	FTBL-SS-B04-0-6-072116	K1608325-011	Soil	07/21/16
12	FTBL-SS-B05-0-6-072116	K1608325-012	Soil	07/21/16
13	FTBL-SS-B06-0-6-072116	K1608325-013	Soil	07/21/16
14	EB072116	K1608325-014	Water	07/21/16
15	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	Soil	07/21/16

LDC #: 37049D4a

SDG #: K1608325

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/16

Reviewer: JD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

	Client ID	Lab ID	Matrix	Date
16	FTBL-SS-B03-0-6-072116MSD	K1608325-009MSD	Soil	07/21/16
17				
18				
19				
20				
21				

Notes:

LDC #: 31045D4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-13	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
14	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
QC-15-10	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

LDC #: 37049D4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9-13

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.048	0.12	0.093									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	14									
Sb			0.013	0.065	0.012									
Pb			0.008	0.04	0.022									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049D4a

VALIDATION FINDINGS WORKSHEET

Split Duplicates

Reviewer: SB
2nd Reviewer: [signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	9	FTBL-SS-B03-0-6-072116-QA (SDG: FA35653)		
Antimony	0.136	2.8U	181	NQ
Copper	9.48	9.8	3	
Lead	23.6	25.7	9	
Zinc	45.5	52.3	14	

NQ = No qual because one or both samples < 5X LOQ

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Quality Control
Outlier Reports

K1608344

Method Blank Outlier Report

Lab Reporting Batch ID: K1608344 **Laboratory:** ALS_K

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name:** Arcadis_FtBliss_ALS_160627

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609920-03	8/24/2016 8:29:00 PM	LEAD ZINC	0.007 mg/Kg 0.14 mg/Kg	FD072016 FTBL-SS-B15-0-6-072016 FTBL-SS-B16-0-6-072016 FTBL-SS-B17-0-6-072016 FTBL-SS-B18-0-6-072016 FTBL-SS-B21-0-6-072016 FTBL-SS-B22-0-6-072016 FTBL-SS-B23-0-6-072016 FTBL-SS-B24-0-6-072016

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072016(Initial/TOT)	COPPER	0.15 ug/L	0.15U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B18-0-6-072016MS (Dry) FTBL-SS-B18-0-6-072016MSD (Dry) (FTBL-SS-B18-0-6-072016)	ANTIMONY	38	38	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 103%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072016	ANTIMONY	J	0.007	0.050	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B18-0-6-072016 (Dry)	FD072016 (Dry)			
ANTIMONY	0.126	0.152	19	50.00	No Qualifiers Applied
COPPER	16.8	14.2	17	50.00	
LEAD	25.2	20.2	22	50.00	
ZINC	51.6	42.6	19	50.00	

LDC #: 37049E4a (9 of 30)

SDG #: K1608344

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/17

Page: 1 of 1

Reviewer: SD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = Sb out = PS ok = NC
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(8)
X.	Laboratory control samples	N	
XI.	~~Field Duplicates~~ Split	N	SD=(8, FTBL-SS-B18-0-6-072016-DA)
XII.	Internal Standard (ICP-MS)	A	(SDG: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B21-0-6-072016	K1608344-002	Soil	07/20/16
2	FTBL-SS-B22-0-6-072016	K1608344-003	Soil	07/20/16
3	FTBL-SS-B23-0-6-072016	K1608344-004	Soil	07/20/16
4	FTBL-SS-B24-0-6-072016	K1608344-005	Soil	07/20/16
5	FTBL-SS-B15-0-6-072016	K1608344-008	Soil	07/20/16
6	FTBL-SS-B16-0-6-072016	K1608344-009	Soil	07/20/16
7	FTBL-SS-B17-0-6-072016	K1608344-010	Soil	07/20/16
8	FTBL-SS-B18-0-6-072016	K1608344-011	Soil	07/20/16
9	FD072016	K1608344-012	Soil	07/20/16
10	EB072016	K1608344-013	Water	07/20/16
11	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	Soil	07/20/16
12	FTBL-SS-B18-0-6-072016MSD	K1608344-011MSD	Soil	07/20/16
13				
14				
15				

LDC #: 37042EU4 (9 of 50)

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DC, 11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37042E4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	9									
Sb			0.092	0.23	0.152									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 10

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06	0.007									
Pb			0.008	0.04	0.034									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049E4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: JB
2nd Reviewer: CL

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B18-0-6-072016-QA (SDG: FA35653)		
Antimony	0.126	0.74U	142	NQ
Copper	16.8	14.6	14	
Lead	25.2	22.4	12	
Zinc	51.6	39.3	27	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049E4a.wpd

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 21, 2016

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1608207

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-SS-B57-0-6-071816	K1608207-003	Soil	07/18/16
FTBL-SS-B58-0-6-071816	K1608207-004	Soil	07/18/16
FTBL-SS-B59-0-6-071816	K1608207-005	Soil	07/18/16
FTBL-SS-B60-0-6-071816	K1608207-006	Soil	07/18/16
FTBL-SS-B51-0-6-071816	K1608207-010	Soil	07/18/16
FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Copper, Lead, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Lead Zinc	0.026 mg/Kg 0.19 mg/Kg	All samples in SDG K1608207
ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

Sample EB071816 was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
EB071816	07/18/16	Copper Lead Zinc	0.15 ug/L 0.038 ug/L 0.3 ug/L	All soil samples in SDG K1608207

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For FTBL-SS-B57-0-6-071816MS/MSD, no data were qualified for Antimony and Lead percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

LDC #: 37049A4a

SDG #: K1608207

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~/IV

SD

Date: 9/15/16

Page: 1 of 1

Reviewer: SD

2nd Reviewer: A

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	7/18/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	EB=(10)
VII.	Matrix Spike/Matrix Spike Duplicates	SW	MSD=(11,12)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(1)
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	~~FTBL-SS-B52-0-6-071816~~	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	~~EB071816~~	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 37049A6

VALIDATION FINDINGS CHECKLIST

Reviewer: SD
2nd Reviewer: MC

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?	✓			
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.				
Target analytes were detected in the field duplicates.				
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 37048A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: JD
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-S	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
QC 11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: All

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Pb	0.026			0.13										
Zn	0.19			0.95										

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 3D
2nd Reviewer: JL

METHOD: Trace Metals (EPA Method 200.7/200.8)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 07/18/16
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All

Analyte	Blank ID	Sample Identification											
[redacted]	10	Action Limit	No Qual.										
Cu	0.15	0.000750											
Pb	0.038	0.000190											
Zn	0.3	0.001500											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: SO
2nd Reviewer: M

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	11/12	S	Sb	38 (72-124)	38 (72-124)		1	No Qual. (PS ok)
			Pb		83 (84-118)			No Qual. (SER ok)

Comments:

LDC #: 37049A6

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: JD
2nd Reviewer: A

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV 17:17	ICP/MS (Initial calibration)	Cu	12.9 ug/L	12.5 ug/L	103%R	103%R	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV 19:20	ICP/MS (Continuing calibration)	Pb	24.99 ug/L	25 ug/L	100%R	100%R	Y
	CVAA (Contining calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: _____

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: JO
2nd Reviewer: JC

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICS AB 17:35	ICP interference check	Zn	21.67 ug/L	25ug/L	87%R	87%R	Y
LCS 19:17	Laboratory control sample	Cu	484.15 ug/L	500 ug/L	97%R	97%R	
MS 19:11	Matrix spike	Pb	(SSR-SR) 79.24 mg/kg	87.20 mg/kg	91%R	91%R	
MSD 19:14	Duplicate	Zn	139.83 mg/kg	139.09 mg/kg	0.5%RPD	0.5%RPD	
SER 19:05	ICP serial dilution	Cu	44.66 ug/L	41.93 ug/L	7%D	7%D	

Comments: *SER results = before 5x D:1 / 25x D:1 applied.

LDC #: 57049A4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: DO
2nd reviewer: SJ

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

M N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for (1) Sb were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)(%solids)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

%solids: 0.94
RD = 0.455335 ug/L
FV = 100ml
In. W = 1.25g
Dil = 5

Recalculation: $\frac{(0.455335\ ug/L)(100ml)(5)}{(1.25g)(0.94)} \times \frac{1mg}{1000ug} = 0.193\ mg/kg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Sb	0.193	0.193	Y
	2	Cu	24.0	24.0	
	3	Pb	49.9	49.9	
	4	Zn	39.6	39.6	
	5	Sb	0.822	0.822	Y

Note: _____

ALS Environmental
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Kelso, WA 98626
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September 08, 2016

Analytical Report for Service Request No: K1608209

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

RE: Closed Castner Firing Range / 06261038.0001.00400

Dear (b) (6)

Enclosed are the results of the sample(s) submitted to our laboratory July 20, 2016
For your reference, these analyses have been assigned our service request number **K1608209.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is (b) . You may also contact me via email at (b) (6) .

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

(b) (6)
Senior Project
Manager

ALS Environmental
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Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
Chain of Custody
Total Solids
Metals
Raw Data
    Total Solids
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1608209
Project:	Closed Castner Firing Range/ 06261038.0001.00400	**Date Received:**	07/20/16
Sample Matrix:	Soil and Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Fifteen samples were received for analysis at ALS Environmental on 07/20/16. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:
Antimony recoveries are generally low for soil and sediment samples when digested using EPA Method 3050B. Despite anticipated low recoveries, the method is still generally prescribed because of its versatility for general metals analysis. Antimony results (in conjunction with the matrix spike recovery) from this procedure should only be used as indicators to estimate concentrations. The matrix spike recoveries of Antimony for sample FTBL-SS-B45-0-6-071916 were below the DoD QSM control criterion. Since low recoveries resulted from a method defect and were possibly magnified by certain matrix components, no corrective action was appropriate. Alternative procedures that specifically target Antimony are available but were not specified for this project. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control.

The matrix spike recoveries of Lead for sample FTBL-SS-B45-0-6-071916 were outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by___ (b) (6) _____

TRRP

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Appendix A ALS Kelso-Laboratory Data Package Signature Page

This data package consists of:

- ☒ This signature page, the laboratory review checklist, and the following reportable data:
- ☒ R1 Field chain-of-custody documentation;
- ☒ R2 Sample identification cross-reference;
- ☒ R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
- ☒ R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
- ☒ R5 Test reports/summary forms for blank samples;
- ☒ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
- ☒ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
- ☒ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) the amount of analyte measured in the duplicate,
  b) the calculated RPD, and
  c) the laboratory's QC limits for analytical duplicates.
- ☒ R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;
- ☒ R10 Other problems or anomalies.
- ☒ The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable:] [This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

[redacted] (b) (6) _____
Name (Printed)

(b) (6) [redacted]

Senior Project Mgr 09/08/16
Official Title (printed) Date

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608209				
Reviewer Name: [redacted]			Prep Batch Number(s): Various				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X1			
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608209				
Reviewer Name: (b) (6)			Prep Batch Number(s): Various				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 09/08/2016
Project Name: Closed Castner Firing Range	Laboratory Job Number: K1608209
Reviewer Name: (b) (6)	Prep Batch Number(s): Various

ER#[5]	Description
X1	See Total Metals Matrix Spike Recovery Exceptions narrative notes.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
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Chain of Custody

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Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: h1600892.09

Project Manager:	(b) (6)	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
Send copy to:			
Sampler's Name:			

REQUESTED ANALYSIS

TAT

- Standard 15 day
- Same Day ' 100%
- Next Day ***
- 3 Day
- EDD

Surcharges. Please call for availability

Due Date:

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present			
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Expplosives	TCLP Lead	Comments
FTBL-SS-B31-0-12-071916	S	071916	0920		3	X		X	Hold
FTBL-SS-B31-12-24-071916	S	071916	0940		3	X		X	Hold
FTBL-SS-B32-0-12-071916	S	071916	1100		3	X		X	Hold
FTBL-SS-B33-0-6-071916	S	071916	0900		1	X			
FTBL-SS-B34-0-6-071916	S	071916	0915		1	X			
FTBL-SS-B35-0-6-071916	S	071916	0925		1	X			
FTBL-SS-B36-0-6-071916	S	071916	0935		1	X			
FTBL-SS-B43-0-12-071916	S	071916	1150		3	X		X	Hold
FTBL-SS-B44-0-12-071916	S	071916	1310		3	X		X	Hold
FTBL-SS-B45-0-6-071916	S	071916	1125		1	X			
FTBL-SS-B46-0-6-071916	S	071916	1135		1	X			

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6)		071916/1400	(b) (6)		7/20/16 1020

* Confirm with Garett Ferguson before running any TCLP Pb samples

Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: h1608209

Project Manager:	[redacted]	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) [redacted] **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
Send copy to:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present			
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

REQUESTED ANALYSIS

TAT

- [x] Standard 15 day
- [ ] Same Day * 100%
- [ ] Next Day **
- [ ] 3 Day
- [x] EDD

Surcharges. Please call for availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Expplosives	Comments
FTBL-SS-B47-0-6-071916	S	071916	1150		1	X		
FTBL-SS-B48-0-6-071916	S	071916	1200		1	X		
FD071916	S	071916	—		1	X		
FTBL-SSB45-0-6-071916-MS	S	071916	1125		1	X		
FTBL-SS-B45-0-6-071916-MSD	S	071916	1125		1	X		
EB071916	W	071916	1350		1	X		

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6) [redacted]	[redacted]	071916/1400	(b) (6) [redacted]	[redacted]	7/20/16 1020

* Confirm with Garett Ferguson before running any TCLP Pb samples.

PC Greg

Cooler Receipt and Preservation Form

Client Arcadis Service Request K16 08209

Received: 7/20/16 Opened: 7/20/16 By: KO Unloaded: 7/20/16 By: KO

1. Samples were received via? *Mail* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1, Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number NA	Filed
1.4	1.1	.7	.4	-.3	342		7836 1697 4063	
-.1	-.2	1.0	.9	-.1	359		7836 1697 4041	
-.3	-.5	1.0	.8	-.2	354		7836 1697 4052	

4. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Page ____ *of* ____

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608209
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/19/16
Sample Matrix:	Soil	**Date Received:**	07/20/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
FTBL-SS-B33-0-6-071916	K1608209-004	**99.2**	-	-	1	08/01/16 16:13	
FTBL-SS-B34-0-6-071916	K1608209-005	**89.5**	-	-	1	08/01/16 16:13	
FTBL-SS-B35-0-6-071916	K1608209-006	**98.9**	-	-	1	08/01/16 16:13	
FTBL-SS-B36-0-6-071916	K1608209-007	**99.2**	-	-	1	08/01/16 16:13	
FTBL-SS-B45-0-6-071916	K1608209-010	**84.5**	-	-	1	08/01/16 16:13	
FTBL-SS-B46-0-6-071916	K1608209-011	**89.8**	-	-	1	08/01/16 16:13	
FTBL-SS-B47-0-6-071916	K1608209-012	**90.1**	-	-	1	08/01/16 16:13	
FTBL-SS-B48-0-6-071916	K1608209-013	**96.5**	-	-	1	08/01/16 16:13	
FD071916	K1608209-014	**98.4**	-	-	1	08/01/16 16:13	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608209
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/19/16
Sample Matrix:	Soil	**Date Received:**	07/20/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
FTBL-SS-B45-0-6-071916	K1608209-010DUP	-	84.5	83.3	83.9	1	20	08/01/16
Batch QC	K1608210-003DUP	-	90.3	90.3	90.3	<1	20	08/01/16

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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www.alsglobal.com

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608209
Date Collected: 7/19/2016
Date Received: 7/20/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B33-0-6-071916 **Lab Code:** K1608209-004

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.042	0.021	0.017	5.0	08/06/16	08/24/16	0.116		J
Copper	6020A	0.084	0.042	0.017	5.0	08/06/16	08/24/16	15.0		
Lead	6020A	0.042	0.011	0.004	5.0	08/06/16	08/24/16	20.0		J
Zinc	6020A	0.42	0.21	0.08	5.0	08/06/16	08/24/16	40.4		

% Solids: 99.2

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608209
Date Collected: 7/19/2016
Date Received: 7/20/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B34-0-6-071916 **Lab Code:** K1608209-005

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.047	0.023	0.019	5.0	08/06/16	08/25/16	0.250		
Copper	6020A	0.093	0.047	0.019	5.0	08/06/16	08/25/16	18.6		
Lead	6020A	0.047	0.012	0.005	5.0	08/06/16	08/25/16	33.5		
Zinc	6020A	0.47	0.23	0.09	5.0	08/06/16	08/25/16	44.5		

% Solids: 89.5

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608209
Project No.:	06261038.0001.00400	**Date Collected:**	7/19/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B35-0-6-071916** **Lab Code:** **K1608209-006**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.042	0.021	0.017	5.0	08/06/16	08/24/16	0.168		J
Copper	6020A	0.084	0.042	0.017	5.0	08/06/16	08/24/16	25.6		
Lead	6020A	0.042	0.011	0.004	5.0	08/06/16	08/24/16	33.7		J
Zinc	6020A	0.42	0.21	0.08	5.0	08/06/16	08/24/16	55.0		

% Solids: **98.9**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608209
Date Collected: 7/19/2016
Date Received: 7/20/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B36-0-6-071916 **Lab Code:** K1608209-007

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.042	0.021	0.017	5.0	08/06/16	08/24/16	0.157		J
Copper	6020A	0.083	0.042	0.017	5.0	08/06/16	08/24/16	13.8		
Lead	6020A	0.042	0.010	0.004	5.0	08/06/16	08/24/16	27.7		J
Zinc	6020A	0.42	0.21	0.08	5.0	08/06/16	08/24/16	40.9		

% Solids: 99.2

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608209
Project No.:	06261038.0001.00400	**Date Collected:**	7/19/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B45-0-6-071916** **Lab Code:** **K1608209-010**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.036	0.018	0.015	5.0	08/06/16	08/24/16	0.543		J
Copper	6020A	0.073	0.036	0.015	5.0	08/06/16	08/24/16	18.7		
Lead	6020A	0.036	0.009	0.004	5.0	08/06/16	08/24/16	56.0		J
Zinc	6020A	0.36	0.18	0.07	5.0	08/06/16	08/24/16	54.7		

% Solids: **84.5**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608209
Project No.:	06261038.0001.00400	**Date Collected:**	7/19/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B46-0-6-071916** **Lab Code:** **K1608209-011**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.037	0.019	0.015	5.0	08/06/16	08/24/16	1.05		J
Copper	6020A	0.075	0.037	0.015	5.0	08/06/16	08/24/16	14.7		
Lead	6020A	0.037	0.009	0.004	5.0	08/06/16	08/24/16	164		J
Zinc	6020A	0.37	0.19	0.08	5.0	08/06/16	08/24/16	49.8		

% Solids: **89.8**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608209
Project No.:	06261038.0001.00400	**Date Collected:**	7/19/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B47-0-6-071916** **Lab Code:** **K1608209-012**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.040	0.020	0.016	5.0	08/06/16	08/24/16	0.241		J
Copper	6020A	0.080	0.040	0.016	5.0	08/06/16	08/24/16	12.1		
Lead	6020A	0.040	0.010	0.004	5.0	08/06/16	08/24/16	35.3		J
Zinc	6020A	0.40	0.20	0.08	5.0	08/06/16	08/24/16	62.0		

% Solids: **90.1**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608209
Project No.:	06261038.0001.00400	**Date Collected:**	7/19/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B48-0-6-071916** **Lab Code:** **K1608209-013**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.041	0.021	0.016	5.0	08/06/16	08/24/16	0.250		J
Copper	6020A	0.082	0.041	0.016	5.0	08/06/16	08/24/16	16.2		
Lead	6020A	0.041	0.010	0.004	5.0	08/06/16	08/24/16	43.9		J
Zinc	6020A	0.41	0.21	0.08	5.0	08/06/16	08/24/16	53.8		

% Solids: **96.5**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608209
Project No.:	06261038.0001.00400	**Date Collected:**	7/19/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FD071916** **Lab Code:** **K1608209-014**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.038	0.019	0.015	5.0	08/06/16	08/24/16	0.957		J
Copper	6020A	0.076	0.038	0.015	5.0	08/06/16	08/24/16	24.0		
Lead	6020A	0.038	0.009	0.004	5.0	08/06/16	08/24/16	169		J
Zinc	6020A	0.38	0.19	0.08	5.0	08/06/16	08/24/16	61.6		

% Solids: **98.4**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Service Request: K1608209
Project No.: 06261038.0001.00400
Date Collected:
Project Name: Closed Castner Firing Range
Date Received:
Matrix: SOIL
Units: mg/Kg
Basis: DRY

Sample Name: Method Blank
Lab Code: KQ1609300-03

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.025	0.020	5.0	08/06/16	08/24/16	0.025	U	J
Copper	6020A	0.100	0.050	0.020	5.0	08/06/16	08/24/16	0.050	U	
Lead	6020A	0.050	0.012	0.005	5.0	08/06/16	08/24/16	0.006	J	J
Zinc	6020A	0.50	0.25	0.10	5.0	08/06/16	08/24/16	0.25	U	

% Solids: 100.0

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	25.1	100	25.0	24.6	98	24.8	99	6020A
Copper	12.5	12.9	103	25.0	25.2	101	25.5	102	6020A
Lead	25.0	25.7	103	25.0	25.1	100	24.8	99	6020A
Zinc	25.0	25.3	101	25.0	24.2	97	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	25.4	102	24.7	99	6020A
Copper				25.0	25.0	100	25.5	102	6020A
Lead				25.0	26.2	105	25.0	100	6020A
Zinc				25.0	24.8	99	24.6	98	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99	24.8	99	6020A
Copper				25.0	25.5	102	25.3	101	6020A
Lead				25.0	25.4	102	24.7	99	6020A
Zinc				25.0	24.6	98	24.6	98	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	25.5	102	25.3	101	6020A
Copper				25.0	25.0	100	25.8	103	6020A
Lead				25.0	25.5	102	25.4	102	6020A
Zinc				25.0	24.7	99	25.2	101	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99			6020A
Copper				25.0	26.0	104			6020A
Lead				25.0	25.6	102			6020A
Zinc				25.0	24.9	100			6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	26.2	105	25.0	24.1	96	24.2	97	6020A
Copper	12.5	13.4	107	25.0	25.8	103	26.0	104	6020A
Lead	25.0	25.6	102	25.0	24.6	98	24.3	97	6020A
Zinc	25.0	25.9	104	25.0	24.7	99	24.9	100	6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608209

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVS1									
	Antimony	0.104	0.100	104	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Copper	0.178	0.200	89	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Lead	0.102	0.100	102	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Zinc	0.992	1.000	99	80.0 - 120.0	MS	8/24/2016	17:29	082416d
LLCCVS1									
	Antimony	0.129	0.100	129	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Copper	0.191	0.200	96	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Lead	0.108	0.100	108	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Zinc	0.848	1.000	85	70.0 - 130.0	MS	8/24/2016	18:47	082416d
LLCCVS2									
	Antimony	0.098	0.100	98	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Copper	0.202	0.200	101	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Lead	0.102	0.100	102	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Zinc	1.141	1.000	114	70.0 - 130.0	MS	8/24/2016	20:02	082416d
LLCCVS3									
	Antimony	0.092	0.100	92	70.0 - 130.0	MS	8/24/2016	21:17	082416d
	Copper	0.223	0.200	112	70.0 - 130.0	MS	8/24/2016	21:17	082416d
	Lead	0.104	0.100	104	70.0 - 130.0	MS	8/24/2016	21:17	082416d
	Zinc	0.966	1.000	97	70.0 - 130.0	MS	8/24/2016	21:17	082416d
LLCCVS4									
	Antimony	0.081	0.100	81	70.0 - 130.0	MS	8/24/2016	22:34	082416d
	Copper	0.186	0.200	93	70.0 - 130.0	MS	8/24/2016	22:34	082416d
	Lead	0.106	0.100	106	70.0 - 130.0	MS	8/24/2016	22:34	082416d
	Zinc	0.973	1.000	97	70.0 - 130.0	MS	8/24/2016	22:34	082416d
LLICVS1									
	Antimony	0.088	0.100	88	80.0 - 120.0	MS	8/25/2016	13:04	082516a
	Copper	0.199	0.200	100	80.0 - 120.0	MS	8/25/2016	13:04	082516a
	Lead	0.101	0.100	101	80.0 - 120.0	MS	8/25/2016	13:04	082516a
	Zinc	0.996	1.000	100	80.0 - 120.0	MS	8/25/2016	13:04	082516a

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608209

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCVS1									
	Antimony	0.107	0.100	107	70.0 - 130.0	MS	8/25/2016	13:41	082516a
	Copper	0.229	0.200	114	70.0 - 130.0	MS	8/25/2016	13:41	082516a
	Lead	0.095	0.100	95	70.0 - 130.0	MS	8/25/2016	13:41	082516a
	Zinc	1.051	1.000	105	70.0 - 130.0	MS	8/25/2016	13:41	082516a

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.040	U	0.040	U	0.040	U	0.048	J	6020A
Copper	0.040	U	0.040	U	0.040	U	0.040	U	6020A
Lead	0.010	U	0.010	U	0.010	U	0.010	U	6020A
Zinc	0.20	U	0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.040	U	0.040	U	0.040	U	6020A
Copper			0.040	U	0.040	U	0.040	U	6020A
Lead			0.010	U	0.010	U	0.010	U	6020A
Zinc			0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.040	U	0.040	U	0.040	U	6020A
Copper			0.040	U	0.040	U	0.040	U	6020A
Lead			0.010	U	0.010	U	0.010	U	6020A
Zinc			0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.060	J	0.040	U	0.092	J			6020A
Copper	0.040	U	0.040	U	0.040	U			6020A
Lead	0.010	U	0.010	U	0.010	U			6020A
Zinc	0.20	U	0.20	U	0.20	U			6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.0	0.0				
Copper	0.0	50.0	0.6	45.6	91			
Lead	0.0		0.1	0.1				
Zinc	0.0	25.0	0.2	21.7	87			

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.0	0.1				
Copper	0.0	50.0	0.6	48.8	98			
Lead	0.0		0.1	0.1				
Zinc	0.0	25.0	0.3	23.0	92			

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 84.5

Sample Name: FTBL-SS-B45-0-6-071916S **Lab Code:** K1608209-010S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	31.380		0.543		73.051	42	J	6020A
Copper	84 - 119	51.912		18.688		36.53	91		6020A
Lead	84 - 118	145.856		56.016		73.05	123	J	6020A
Zinc	82 - 119	127.38		54.67		73.05	100		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 84.5

Sample Name: FTBL-SS-B45-0-6-071916SD **Lab Code:** K1608209-010SD

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	29.809		0.543		71.723	41	J	6020A
Copper	84 - 119	54.986		18.688		35.86	101		6020A
Lead	84 - 118	152.462		56.016		71.72	134	J	6020A
Zinc	82 - 119	129.98		54.67		71.72	105		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: WATER

Sample Name: FTBL-SS-B45-0-6-071916A **Lab Code:** K1608209-010A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	50.70		1.50		50.0	98		6020A
Copper	75 - 125	102.34		51.48		50.0	102		6020A
Lead	75 - 125	200.977		154.306		50.0	93		6020A
Zinc	75 - 125	202.52		150.60		50.0	104		6020A

Metals

- 6 -

DUPLICATES

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 84.5

Sample Name: **FTBL-SS-B45-0-6-071916SD** **Lab Code:** **K1608209-010SD**

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Antimony	20	31.380		29.809		5.1		6020A
Copper	20	51.912		54.986		5.8		6020A
Lead	20	145.856		152.462		4.4		6020A
Zinc	20	127.38		129.98		2.0		6020A

An empty field in the Control Limit column indicates the control limit is not applicable.

Form VI - IN

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	1000.0	981.8	98					
Copper	500.0	490.8	98					
Lead	1000.0	937.2	94					
Zinc	1000.0	981.3	98					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **FTBL-SS-B45-0-6-071916L** **Lab Code:** **K1608209-010L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	1.496		1.356		9		MS
Copper	51.48		53.80		5		MS
Lead	154.31		161.05		4		MS
Zinc	150.60		154.35		2		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-04**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.10	0.05	0.04	MS
Copper	65		0.20	0.10	0.04	MS
Lead	208		0.100	0.025	0.010	MS
Zinc	66		1.00	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	45.000	3000	6020A
Copper	45.000	3000	6020A
Lead	45.000	3000	6020A
Zinc	45.000	3000	6020A

Comments:

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Weight (g)	Final Volume(mL)
K1608209-004	8/6/2016	1.20	100.0
K1608209-005	8/6/2016	1.20	100.0
K1608209-006	8/6/2016	1.20	100.0
K1608209-007	8/6/2016	1.21	100.0
K1608209-010	8/6/2016	1.63	100.0
K1608209-010S	8/6/2016	1.62	100.0
K1608209-010SD	8/6/2016	1.65	100.0
K1608209-011	8/6/2016	1.49	100.0
K1608209-012	8/6/2016	1.38	100.0
K1608209-013	8/6/2016	1.26	100.0
K1608209-014	8/6/2016	1.34	100.0
KQ1609300-03	8/6/2016	1.00	100.0
KQ1609300-04	8/6/2016	100.0	100.0

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Blank	1.0	17:11			X								X		X										X	
Standard 1	1.0	17:14			X								X		X										X	
ICV1	1.0	17:17			X								X		X										X	
CCV1	1.0	17:20			X								X		X										X	
ICB1	1.0	17:23			X								X		X										X	
CCB1	1.0	17:26			X								X		X										X	
LLICVS1	1.0	17:29			X								X		X										X	
ICS-A1	1.0	17:32			X								X		X										X	
ICS-AB1	1.0	17:35			X								X		X										X	
ZZZZZZ	5.0	17:38																								
ZZZZZZ	5.0	17:41																								
ZZZZZZ	5.0	17:44																								
ZZZZZZ	5.0	17:47																								
ZZZZZZ	5.0	17:50																								
ZZZZZZ	5.0	17:53																								
ZZZZZZ	5.0	17:56																								
ZZZZZZ	5.0	17:59																								
ZZZZZZ	5.0	18:02																								
CCV2	1.0	18:05			X								X		X										X	
CCB2	1.0	18:08			X								X		X										X	
ZZZZZZ	5.0	18:11																								
ZZZZZZ	5.0	18:14																								
ZZZZZZ	1.0	18:17																								
ZZZZZZ	1.0	18:20																								
ZZZZZZ	5.0	18:23																								
ZZZZZZ	5.0	18:26																								
ZZZZZZ	5.0	18:29																								
ZZZZZZ	5.0	18:32																								
ZZZZZZ	1.0	18:35																								
ZZZZZZ	5.0	18:38																								
CCV3	1.0	18:41			X								X		X										X	
CCB3	1.0	18:44			X								X		X										X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
LLCCVS1	1.0	18:47			X								X		X										X				
ZZZZZZ	5.0	18:50																												
ZZZZZZ	5.0	18:53																												
ZZZZZZ	5.0	18:56																												
ZZZZZZ	5.0	18:59																												
ZZZZZZ	5.0	19:02																												
ZZZZZZ	5.0	19:05																												
ZZZZZZ	5.0	19:08																												
ZZZZZZ	5.0	19:11																												
ZZZZZZ	5.0	19:14																												
ZZZZZZ	5.0	19:17																												
CCV4	1.0	19:20			X								X		X										X				
CCB4	1.0	19:23			X								X		X										X				
ZZZZZZ	1.0	19:26																												
ZZZZZZ	5.0	19:29																												
ZZZZZZ	5.0	19:32																												
ZZZZZZ	5.0	19:35																												
ZZZZZZ	5.0	19:38																												
ZZZZZZ	5.0	19:41																												
ZZZZZZ	5.0	19:44																												
ZZZZZZ	5.0	19:47																												
ZZZZZZ	5.0	19:50																												
ZZZZZZ	5.0	19:53																												
CCV5	1.0	19:56			X								X		X										X				
CCB5	1.0	19:59			X								X		X										X				
LLCCVS2	1.0	20:02			X								X		X										X				
ZZZZZZ	5.0	20:05																												
ZZZZZZ	5.0	20:08																												
ZZZZZZ	5.0	20:11																												
ZZZZZZ	5.0	20:14																												
ZZZZZZ	5.0	20:17																												
ZZZZZZ	5.0	20:20																												

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	5.0	20:23																												
ZZZZZZ	5.0	20:26																												
ZZZZZZ	5.0	20:29																												
ZZZZZZ	5.0	20:32																												
CCV6	1.0	20:35			X								X		X											X				
CCB6	1.0	20:38			X								X		X											X				
ZZZZZZ	5.0	20:41																												
ZZZZZZ	5.0	20:44																												
ZZZZZZ	5.0	20:47																												
ZZZZZZ	5.0	20:50																												
ZZZZZZ	5.0	20:53																												
ZZZZZZ	5.0	20:56																												
ZZZZZZ	5.0	20:59																												
ZZZZZZ	5.0	21:02																												
ZZZZZZ	5.0	21:05																												
ZZZZZZ	5.0	21:08																												
CCV7	1.0	21:11			X								X		X											X				
CCB7	1.0	21:14			X								X		X											X				
LLCCVS3	1.0	21:17			X								X		X											X				
ZZZZZZ	5.0	21:20																												
ZZZZZZ	5.0	21:23																												
ZZZZZZ	1.0	21:26																												
ZZZZZZ	5.0	21:29																												
KQ1609300-03	5.0	21:32			X								X		X											X				
K1608209-004	5.0	21:35			X								X		X											X				
ZZZZZZ	5.0	21:38																												
K1608209-006	5.0	21:41			X								X		X											X				
K1608209-007	5.0	21:44			X								X		X											X				
K1608209-010	5.0	21:47			X								X		X											X				
ZZZZZZ	1.0	21:50																												
CCV8	1.0	21:52			X								X		X											X				
CCB8	1.0	21:55			X								X		X											X				

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Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
K1608209-010L	5.0	21:58			X								X		X										X				
K1608209-010A	5.0	22:01			X								X		X										X				
K1608209-010S	5.0	22:04			X								X		X										X				
K1608209-010SD	5.0	22:07			X								X		X										X				
KQ1609300-04	5.0	22:10			X								X		X										X				
ZZZZZZ	1.0	22:13																												
K1608209-011	5.0	22:16			X								X		X										X				
K1608209-012	5.0	22:19			X								X		X										X				
K1608209-013	5.0	22:22			X								X		X										X				
K1608209-014	5.0	22:25			X								X		X										X				
CCV9	1.0	22:28			X								X		X										X				
CCB9	1.0	22:31			X								X		X										X				
LLCCVS4	1.0	22:34			X								X		X										X				

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Run Number:** 082516a

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/25/2016 **End Date:** 8/25/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Blank	1.0	12:47			X								X		X										X	
Standard 1	1.0	12:49			X								X		X										X	
ICV2	1.0	12:52			X								X		X										X	
CCV1	1.0	12:55			X								X		X										X	
ICB2	1.0	12:58			X								X		X										X	
CCB1	1.0	13:01			X								X		X										X	
LLICVS1	1.0	13:04			X								X		X										X	
ICS-A1	1.0	13:07			X								X		X										X	
ICS-AB1	1.0	13:10			X								X		X										X	
ZZZZZZ	1.0	13:13																								
ZZZZZZ	1.0	13:16																								
K1608209-005	5.0	13:19			X								X		X										X	
ZZZZZZ	5.0	13:22																								
ZZZZZZ	500.0	13:24																								
CCV2	1.0	13:27			X								X		X										X	
CCB2	1.0	13:30			X								X		X										X	
ZZZZZZ	1.0	13:33																								
LLCCVS1	1.0	13:41			X								X		X										X	

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Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608209

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
Blank	Blank	1711	100		100		100							
Standard 1	Standard 1	1714	101		101		102							
ICV1	ICV	1717	101		103		100							
CCV1	CCV	1720	101		102		101							
ICB1	ICB	1723	101		102		99							
CCB1	CCB	1726	99		100		100							
LLICVS1	LLICVS1	1729	99		102		100							
ICS-A1	ICSA	1732	85		88		94							
ICS-AB1	ICSAB	1735	87		89		94							
ZZZZZZ	ZZZZZZ	1738												
ZZZZZZ	ZZZZZZ	1741												
ZZZZZZ	ZZZZZZ	1744												
ZZZZZZ	ZZZZZZ	1747												
ZZZZZZ	ZZZZZZ	1750												
ZZZZZZ	ZZZZZZ	1753												
ZZZZZZ	ZZZZZZ	1756												
ZZZZZZ	ZZZZZZ	1759												
ZZZZZZ	ZZZZZZ	1802												
CCV2	CCV	1805	103		105		103							
CCB2	CCB	1808	102		102		101							
ZZZZZZ	ZZZZZZ	1811												
ZZZZZZ	ZZZZZZ	1814												
ZZZZZZ	ZZZZZZ	1817												
ZZZZZZ	ZZZZZZ	1820												
ZZZZZZ	ZZZZZZ	1823												
ZZZZZZ	ZZZZZZ	1826												
ZZZZZZ	ZZZZZZ	1829												
ZZZZZZ	ZZZZZZ	1832												
ZZZZZZ	ZZZZZZ	1835												
ZZZZZZ	ZZZZZZ	1838												
CCV3	CCV	1841	98		95		94							
CCB3	CCB	1844	98		99		101							
LLCCVS1	LLCCVS1	1847	101		102		103							
ZZZZZZ	ZZZZZZ	1850												
ZZZZZZ	ZZZZZZ	1853												
ZZZZZZ	ZZZZZZ	1856												
ZZZZZZ	ZZZZZZ	1859												
ZZZZZZ	ZZZZZZ	1902												
ZZZZZZ	ZZZZZZ	1905												
ZZZZZZ	ZZZZZZ	1908												
ZZZZZZ	ZZZZZZ	1911												
ZZZZZZ	ZZZZZZ	1914												
ZZZZZZ	ZZZZZZ	1917												
CCV4	CCV	1920	109		108		107							

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608209

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
CCB4	CCB	1923	108		109		106							
ZZZZZZ	ZZZZZZ	1926												
ZZZZZZ	ZZZZZZ	1929												
ZZZZZZ	ZZZZZZ	1932												
ZZZZZZ	ZZZZZZ	1935												
ZZZZZZ	ZZZZZZ	1938												
ZZZZZZ	ZZZZZZ	1941												
ZZZZZZ	ZZZZZZ	1944												
ZZZZZZ	ZZZZZZ	1947												
ZZZZZZ	ZZZZZZ	1950												
ZZZZZZ	ZZZZZZ	1953												
CCV5	CCV	1956	109		106		105							
CCB5	CCB	1959	108		107		106							
LLCCVS2	LLCCVS2	2002	107		108		108							
ZZZZZZ	ZZZZZZ	2005												
ZZZZZZ	ZZZZZZ	2008												
ZZZZZZ	ZZZZZZ	2011												
ZZZZZZ	ZZZZZZ	2014												
ZZZZZZ	ZZZZZZ	2017												
ZZZZZZ	ZZZZZZ	2020												
ZZZZZZ	ZZZZZZ	2023												
ZZZZZZ	ZZZZZZ	2026												
ZZZZZZ	ZZZZZZ	2029												
ZZZZZZ	ZZZZZZ	2032												
CCV6	CCV	2035	104		105		108							
CCB6	CCB	2038	101		103		103							
ZZZZZZ	ZZZZZZ	2041												
ZZZZZZ	ZZZZZZ	2044												
ZZZZZZ	ZZZZZZ	2047												
ZZZZZZ	ZZZZZZ	2050												
ZZZZZZ	ZZZZZZ	2053												
ZZZZZZ	ZZZZZZ	2056												
ZZZZZZ	ZZZZZZ	2059												
ZZZZZZ	ZZZZZZ	2102												
ZZZZZZ	ZZZZZZ	2105												
ZZZZZZ	ZZZZZZ	2108												
CCV7	CCV	2111	98		101		101							
CCB7	CCB	2114	96		98		99							
LLCCVS3	LLCCVS3	2117	95		98		101							
ZZZZZZ	ZZZZZZ	2120												
KQ1609920-04	Lab Control	2123	94		97		98							
ZZZZZZ	ZZZZZZ	2126												
ZZZZZZ	ZZZZZZ	2129												
KQ1609300-03	Method Blank	2132	94		98		97							

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608209

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
K1608209-004	FTBL-SS-B33-0-6-	2135	100		100		107							
ZZZZZZ	ZZZZZZ	2138												
K1608209-006	FTBL-SS-B35-0-6-	2141	100		102		107							
K1608209-007	FTBL-SS-B36-0-6-	2144	97		101		107							
K1608209-010	FTBL-SS-B45-0-6-	2147	100		101		107							
ZZZZZZ	ZZZZZZ	2150												
CCV8	CCV	2152	102		103		103							
CCB8	CCB	2155	104		103		101							
K1608209-010L	FTBL-SS-B45-0-6-	2158	104		103		106							
K1608209-010A	FTBL-SS-B45-0-6-	2201	99		103		108							
K1608209-010S	FTBL-SS-B45-0-6-	2204	99		100		108							
K1608209-010SD	FTBL-SS-B45-0-6-	2207	99		101		109							
KQ1609300-04	Lab Control	2210	102		103		106							
ZZZZZZ	ZZZZZZ	2213												
K1608209-011	FTBL-SS-B46-0-6-	2216	100		94		101							
K1608209-012	FTBL-SS-B47-0-6-	2219	100		101		108							
K1608209-013	FTBL-SS-B48-0-6-	2222	99		101		105							
K1608209-014	FD071916	2225	102		102		108							
CCV9	CCV	2228	107		107		105							
CCB9	CCB	2231	105		106		105							
LLCCVS4	LLCCVS4	2234	105		107		104							

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608209

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/25/2016 End Date: 08/25/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
Blank	Blank	1247	100		100		100							
Standard 1	Standard 1	1249	103		98		100							
ICV2	ICV	1252	102		100		100							
CCV1	CCV	1255	101		100		101							
ICB2	ICB	1258	101		102		100							
CCB1	CCB	1301	100		102		100							
LLICVS1	LLICVS1	1304	104		99		100							
ICS-A1	ICSA	1307	85		88		94							
ICS-AB1	ICSAB	1310	83		88		94							
ZZZZZZ	ZZZZZZ	1313												
ZZZZZZ	ZZZZZZ	1316												
K1608209-005	FTBL-SS-B34-0-6-[illegible]	1319	96		97		102							
ZZZZZZ	ZZZZZZ	1322												
ZZZZZZ	ZZZZZZ	1324												
CCV2	CCV	1327	92		97		99							
CCB2	CCB	1330	94		97		97							
ZZZZZZ	ZZZZZZ	1333												
LLCCVS1	LLCCVS1	1341	99		100		99							

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608209
Project No.:	06261038.0001.00400	**Date Collected:**	7/19/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **EB071916** **Lab Code:** **K1608209-015**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	07/21/16	08/03/16	0.012	U	
Copper	6020A	0.10	0.05	0.02	1.0	07/21/16	08/03/16	0.07	J	
Lead	6020A	0.020	0.010	0.004	1.0	07/21/16	08/03/16	0.018	J	
Zinc	6020A	0.5	0.5	0.2	1.0	08/04/16	08/05/16	0.4	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: WATER

Service Request: K1608209
Date Collected:
Date Received:
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1608449-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	07/21/16	08/03/16	0.012	U	
Copper	6020A	0.10	0.05	0.02	1.0	07/21/16	08/03/16	0.05	U	
Lead	6020A	0.020	0.010	0.004	1.0	07/21/16	08/03/16	0.007	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: WATER

Service Request: K1608209
Date Collected:
Date Received:
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1609201-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Zinc	6020A	0.5	0.5	0.2	1.0	08/04/16	08/05/16	0.5	U	

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	26.1	104	25.0	24.8	99	25.1	100	6020A
Copper	12.5	12.4	99	25.0	25.0	100	25.2	101	6020A
Lead	25.0	25.2	101	25.0	25.0	100	25.4	102	6020A
Zinc	25.0	25.5	102	25.0	25.2	101	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99	24.8	99	6020A
Copper				25.0	25.5	102	25.5	102	6020A
Lead				25.0	25.1	100	25.4	102	6020A
Zinc				25.0	24.8	99			6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.7	99			6020A
Copper				25.0	25.2	101			6020A
Lead				25.0	25.1	100			6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608209

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVW1									
	Antimony	0.051	0.05	102	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Copper	0.101	0.10	101	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Lead	0.020	0.02	100	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
LLCCVW1									
	Antimony	0.046	0.05	92	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Copper	0.090	0.10	90	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Lead	0.020	0.02	100	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
LLCCVW2									
	Antimony	0.057	0.05	114	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Copper	0.106	0.10	106	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Lead	0.024	0.02	120	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
LLICVW1									
	Zinc	0.44	0.50	88	80.0 - 120.0	MS	8/5/2016	05:59	080516AMS
LLCCVW1									
	Zinc	0.47	0.50	94	70.0 - 130.0	MS	8/5/2016	06:43	080516AMS

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.012	J	0.006	U	0.020	J	0.006	U	6020A
Copper	0.02	U	0.02	U	0.02	U	0.02	U	6020A
Lead	0.005	J	0.004	U	0.008	J	0.007	J	6020A
Zinc	0.2	U	0.2	U	0.2	U	0.2	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.006	U	0.013	J			6020A
Copper			0.02	U	0.02	U			6020A
Lead			0.008	J	0.006	J			6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.06	0.04				
Copper	0.0	50.0	2.38	47.7	95			
Lead	0.0		0.17	0.14				
Zinc	0.0	25.0	2.04	26.4	106			

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** NA

Matrix: WATER

Sample Name: Batch QC1A **Lab Code:** K1608011-007A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	21.572		0.012	J	20.0	108		6020A
Copper	75 - 125	22.14		0.12		20.0	110		6020A
Lead	75 - 125	21.497		0.037		20.0	107		6020A
Zinc	75 - 125	22.49		0.30	J	20.0	111		6020A

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	49.8	100					
Copper	12.5	12.8	102					
Lead	50	50.6	101					
Zinc	25	23.9	96					

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	50.7	101					
Copper	12.5	12.7	102					
Lead	50	51.7	103					
Zinc	25	24.4	98					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **Batch QC1L** **Lab Code:** **K1608011-007L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	0.012	J	0.030	U	100.0		MS
Copper	0.12		0.11	J	8		MS
Lead	0.037		0.034	J	8		MS
Zinc	0.30	J	2.19	J	630		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-03**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.050	0.013	0.006	MS
Copper	65		0.10	0.05	0.02	MS
Lead	208		0.020	0.010	0.004	MS
Zinc	66		0.50	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	15.000	2000	6020A
Arsenic	15.000	2000	6020A
Beryllium	15.000	2000	6020A
Copper	15.000	2000	6020A
Lead	15.000	2000	6020A
Nickel	15.000	2000	6020A
Zinc	15.000	2000	6020A

Comments:

Metals

-13-

PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608209-015	7/21/2016	25.0	25.0
KQ1608449-01	7/21/2016	25.0	25.0
KQ1608449-02	7/21/2016	25.0	25.0
KQ1608449-03	7/21/2016	25.0	25.0

Metals

-13-

PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608209-015	8/4/2016	25.0	25.0
KQ1609201-01	8/4/2016	25.0	25.0
KQ1609201-02	8/4/2016	25.0	25.0
KQ1609201-03	8/4/2016	25.0	25.0

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Cal. Blk	1.0	11:58			X								X		X											
Cal. Stn	1.0	12:05			X								X		X											
ICV1	1.0	12:08			X								X		X											
CCV1	1.0	12:13			X								X		X											
ZZZZZZ	1.0	12:20																								
ICB1	1.0	12:24			X								X		X											
CCB1	1.0	12:28			X								X		X											
LLICVW1	1.0	12:32			X								X		X											
ZZZZZZ	1.0	12:35																								
ICS-A1	1.0	12:43			X								X		X											
ICS-AB1	1.0	12:46			X								X		X											
ZZZZZZ	1.0	12:50																								
ZZZZZZ	1.0	13:06																								
ZZZZZZ	1.0	13:10																								
ZZZZZZ	1.0	13:14																								
ZZZZZZ	5.0	13:18																								
ZZZZZZ	1.0	13:22																								
ZZZZZZ	1.0	13:25																								
ZZZZZZ	1.0	13:29																								
ZZZZZZ	1.0	13:33																								
CCV2	1.0	13:36			X								X		X											
CCB2	1.0	13:44			X								X		X											
ZZZZZZ	1.0	13:48																								
ZZZZZZ	1.0	13:52																								
ZZZZZZ	1.0	13:55																								
ZZZZZZ	1.0	13:59																								
ZZZZZZ	1.0	14:03																								
ZZZZZZ	1.0	14:07																								
ZZZZZZ	1.0	14:10																								
ZZZZZZ	1.0	14:14																								
ZZZZZZ	1.0	14:17																								
CCV3	1.0	14:21			X								X		X											

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
ZZZZZZ	1.0	14:30																												
CCB3	1.0	14:34			X								X		X															
LLCCVW1	1.0	14:37			X								X		X															
KQ1608449-01	1.0	14:41			X								X		X															
KQ1608449-02	1.0	14:45			X								X		X															
KQ1608449-03	1.0	14:50			X								X		X															
ZZZZZZ	1.0	14:55																												
K1608011-007L	5.0	14:59			X								X		X															
K1608011-007A	1.0	15:02			X								X		X															
ZZZZZZ	1.0	15:06																												
K1608209-015	1.0	15:10			X								X		X															
ZZZZZZ	1.0	15:14																												
CCV4	1.0	15:17			X								X		X															
ZZZZZZ	1.0	15:27																												
CCB4	1.0	15:30			X								X		X															
ZZZZZZ	1.0	15:34																												
ZZZZZZ	1.0	15:37																												
ZZZZZZ	1.0	15:43																												
ZZZZZZ	1.0	15:49																												
ZZZZZZ	5.0	15:53																												
ZZZZZZ	1.0	15:56																												
ZZZZZZ	1.0	16:00																												
CCV5	1.0	16:04			X								X		X															
CCB5	1.0	16:13			X								X		X															
LLCCVW2	1.0	16:17			X								X		X															

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608209

Project No.: 06261038.0001.00400 **Run Number:** 080516AMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/5/2016 **End Date:** 8/5/2016

Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Cal. Blk	1.0	05:39																							X	
Cal. Stn	1.0	05:42																							X	
ICV1	1.0	05:44																							X	
CCV1	1.0	05:46																							X	
ICB1	1.0	05:48																							X	
CCB1	1.0	05:57																							X	
LLICVW1	1.0	05:59																							X	
ZZZZZZ	1.0	06:01																								
ICS-A1	1.0	06:05																							X	
ICS-AB1	1.0	06:08																							X	
KQ1609201-01	1.0	06:10																							X	
KQ1609201-02	1.0	06:12																							X	
KQ1609201-03	1.0	06:14																							X	
ZZZZZZ	1.0	06:16																								
K1608011-007L	5.0	06:19																							X	
K1608011-007A	1.0	06:21																							X	
CCV2	1.0	06:23																							X	
CCB2	1.0	06:25																							X	
ZZZZZZ	1.0	06:28																								
K1608209-015	1.0	06:30																							X	
ZZZZZZ	1.0	06:32																								
ZZZZZZ	1.0	06:34																								
ZZZZZZ	1.0	06:37																								
CCV3	1.0	06:39																							X	
CCB3	1.0	06:41																							X	
LLCCVW1	1.0	06:43																							X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608209

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
Cal. Blk	Cal. Blk	1158	100		100		100		100		100		100	
Cal. Stn	Cal. Stn	1205	97		99		100		100		101		102	
ICV1	ICV1	1208	96		99		100		100		100		102	
CCV1	CCV1	1213	103		99		100		100		101		101	
ZZZZZZ	ZZZZZZ	1220												
ICB1	ICB1	1224	107		100		100		101		100		100	
CCB1	CCB1	1228	107		101		100		101		101		100	
LLICVW1	LLICVW1	1232	103		99		99		100		100		100	
ZZZZZZ	ZZZZZZ	1235												
ICS-A1	ICSA	1243	100		95		94		90		92		93	
ICS-AB1	ICSAB	1246	103		97		95		92		95		97	
ZZZZZZ	ZZZZZZ	1250												
ZZZZZZ	ZZZZZZ	1306												
ZZZZZZ	ZZZZZZ	1310												
ZZZZZZ	ZZZZZZ	1314												
ZZZZZZ	ZZZZZZ	1318												
ZZZZZZ	ZZZZZZ	1322												
ZZZZZZ	ZZZZZZ	1325												
ZZZZZZ	ZZZZZZ	1329												
ZZZZZZ	ZZZZZZ	1333												
CCV2	CCV2	1336	95		95		97		99		99		101	
CCB2	CCB2	1344	99		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1348												
ZZZZZZ	ZZZZZZ	1352												
ZZZZZZ	ZZZZZZ	1355												
ZZZZZZ	ZZZZZZ	1359												
ZZZZZZ	ZZZZZZ	1403												
ZZZZZZ	ZZZZZZ	1407												
ZZZZZZ	ZZZZZZ	1410												
ZZZZZZ	ZZZZZZ	1414												
ZZZZZZ	ZZZZZZ	1417												
CCV3	CCV3	1421	102		98		98		98		98		99	
ZZZZZZ	ZZZZZZ	1430												
CCB3	CCB3	1434	104		99		100		101		100		99	
LLCCVW1	LLCCVW1	1437	103		100		99		101		100		99	
KQ1608449-01	Method Blank	1441	103		98		98		98		98		98	
KQ1608449-02	Lab Control	1445	103		99		99		100		99		99	
KQ1608449-03	Duplicate Lab	1450	101		97		98		99		98		99	
ZZZZZZ	ZZZZZZ	1455												
K1608011-007L	Batch QC1L	1459	99		97		97		98		98		99	
K1608011-007A	Batch QC1A	1502	100		96		97		98		98		99	
ZZZZZZ	ZZZZZZ	1506												
K1608209-015	EB071916	1510	99		96		97		97		97		98	
ZZZZZZ	ZZZZZZ	1514												

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608209

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
CCV4	CCV4	1517	98		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1527												
CCB4	CCB4	1530	106		101		101		101		100		99	
ZZZZZZ	ZZZZZZ	1534												
ZZZZZZ	ZZZZZZ	1537												
ZZZZZZ	ZZZZZZ	1543												
ZZZZZZ	ZZZZZZ	1549												
ZZZZZZ	ZZZZZZ	1553												
ZZZZZZ	ZZZZZZ	1556												
ZZZZZZ	ZZZZZZ	1600												
CCV5	CCV5	1604	103		99		99		99		99		100	
CCB5	CCB5	1613	106		102		100		100		99		97	
LLCCVW2	LLCCVW2	1617	107		101		101		101		100		98	

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608209

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/05/2016 End Date: 08/05/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ga_71	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
Cal. Blk	Cal. Blk	0539	100											
Cal. Stn	Cal. Stn	0542	102											
ICV1	ICV1	0544	101											
CCV1	CCV1	0546	101											
ICB1	ICB1	0548	101											
CCB1	CCB1	0557	99											
LLICVW1	LLICVW1	0559	98											
ZZZZZZ	ZZZZZZ	0601												
ICS-A1	ICSA	0605	93											
ICS-AB1	ICSAB	0608	93											
KQ1609201-01	Method Blank	0610	94											
KQ1609201-02	Lab Control	0612	95											
KQ1609201-03	Duplicate Lab	0614	95											
ZZZZZZ	ZZZZZZ	0616												
K1608011-007L	Batch QC1L	0619	95											
K1608011-007A	Batch QC1A	0621	95											
CCV2	CCV2	0623	95											
CCB2	CCB2	0625	95											
ZZZZZZ	ZZZZZZ	0628												
K1608209-015	EB071916	0630	94											
ZZZZZZ	ZZZZZZ	0632												
ZZZZZZ	ZZZZZZ	0634												
ZZZZZZ	ZZZZZZ	0637												
CCV3	CCV3	0639	95											
CCB3	CCB3	0641	95											
LLCCVW1	LLCCVW1	0643	96											

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Benchsheet

Service Request #: K1608210, KQ1609056, K1608209 **Run #:** 507983
Test: TS **Balance ID:** K-Balance-16
Method: 160.3 Modified

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1608210-003	1.30	12.65	12.72	11.4	90.3	
	K1608210-003DUP	1.32	13.29	13.32	12.0	90.3	<1
	K1608210-004	1.31	10.74	11.32	10.0	93.2	
	K1608210-005	1.28	11.86	12.16	10.9	91.7	
	K1608210-006	1.30	12.21	12.84	11.5	94.5	
	K1608210-010	1.29	11.11	11.73	10.4	94.0	
	K1608210-011	1.30	11.73	12.73	11.4	97.4	
	K1608210-012	1.29	10.42	10.94	9.65	92.6	
	K1608210-013	1.31	10.49	11.50	10.2	97.1	
	K1608210-014	1.31	13.26	14.09	12.8	96.4	
	K1608209-004	1.29	14.46	15.63	14.3	99.2	
	K1608209-005	1.29	10.39	10.59	9.30	89.5	
	K1608209-006	1.32	11.34	12.54	11.2	98.9	
	K1608209-007	1.30	10.13	11.35	10.1	99.2	
	K1608209-010	1.30	16.12	14.92	13.6	84.5	
	K1608209-010DUP	1.31	11.89	11.22	9.91	83.3	1
	K1608209-011	1.30	13.46	13.39	12.1	89.8	
	K1608209-012	1.30	14.50	14.36	13.1	90.1	
	K1608209-013	1.29	10.38	11.31	10.0	96.5	
	K1608209-014	1.31	11.04	12.17	10.9	98.4	

	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
Oven1	K-OVEN 07	105	105	8/1/2016	16:13	8/2/2016	08:43	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	K-Balance-16	1.00, 100.01	1.00, 100.01	8/1/2016	15:55	8/1/2016	16:13
Calibration2	K-Balance-16	1.00, 100.00	1.00, 100.01	8/2/2016	08:58	8/2/2016	09:01

Comments: ZR Reviewed 8-2-16 L.J.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 268006 **Prep Workflow:** MetDigSICP **Status:** Prepped **Prep Date:** 08/06/2016 07:25
Team: Metals **Prep Method:** EPA 3050B **Current Step:** Digestion **Due Date:** 08/06/2016
Analyst: AURBAN **Rush/NPDES:** N/A **Hold Date:** 01/15/2017

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1609300-03	Method Blank		1.00 g	As Received.	100 mL			10% HNO3, 10% HCl
KQ1609300-04	Lab Control Sample		1.00 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608209-004	FTBL-SS-B33-0-6-071916	.01	1.20 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608209-005	FTBL-SS-B34-0-6-071916	.01	1.20 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608209-006	FTBL-SS-B35-0-6-071916	.01	1.20 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608209-007	FTBL-SS-B36-0-6-071916	.01	1.21 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608209-010	FTBL-SS-B45-0-6-071916	.01	1.63 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608209-010: KQ1609300-01	Matrix Spike	.01	1.62 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608209-010: KQ1609300-02	Duplicate Matrix Spike	.01	1.65 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608209-011	FTBL-SS-B46-0-6-071916	.01	1.49 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608209-012	FTBL-SS-B47-0-6-071916	.01	1.38 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608209-013	FTBL-SS-B48-0-6-071916	.01	1.26 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608209-014	FD071916	.01	1.34 g	As Received.	100 mL			10% HNO3, 10% HCl

13 Total Samples consisting of 9 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET SS1	Spike	174411	7/12/2017	K-MET SS4	Spike	174221	10/14/2016
K-MET SS3	Spike	174614	3/18/2017	K-MET SS5	Spike	174153	1/28/2017

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	Teflon Chips	69101	Digestion	K-MET 100ml Centrifuge Tube	172987
Digestion	K-MET HCL	87502	Digestion	K-MET H2O2	174426
Digestion	K-MET HNO3	87968			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-Balance-02	Date Checked	8/6/16		Digestion	K-Block Digester-	Observed	95.0	deg

Digestion	K-BlockDigester-02	Corrected Temperature	95.0	deg C
Digestion	K-BlockDigester-02	Correction Factor	0.0	deg C
	02	Temperature		C
Digestion	K-BlockDigester-02	Thermometer ID 1107973	.	NONE
Digestion	K-BlockDigester-02	Thermometer Location	32	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	06-AUG-16 07:25	06-AUG-16 09:35	AURBAN		N	

Comments

First reflux on at 725 off at 740. Second reflux on at 745 off at 845. HCl reflux on at 920 off at 935.

Review

Reviewed by: _____ Date: 8/8/16

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
	V	100*	1000ml	50	
	Zn	100*	1000ml	50	
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	50	500ml	100	
	Mo	50	500ml	100	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	
K-MET GFLCSW	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.

** Denotes 10.000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

Service Request # K1608209
Calibration 082416DMS04
QC in calibration 082416DMS04
QC Service Request # K1608209
STARLIMS run # 511491

CAL STD	MS20-83-G	ICSA STD	MS20-83-H
ICV STD	MS20-72-E	ICSAB STD	MS20-83-I
LLICV STD	MS20-72-F		
Internal STD	MS20-58-A		

6020 DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD limit?	X		
12. Spikes within DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?		X	
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?	X		
21. Cd Correction Applied?		X	
22. Was run prematurely stopped, If so why?		X	

Comments: LRSTD : 1000ppb
#5 needs rerun.

Primary Review by JDB Date 8/25/16
Secondary Review by [signature] Date 8/25/16

Data Review Form

Service Request #: **K1608209**
Instrument ID#: **K-ICP-MS-04**
DataFile Name: **R:\ICP\WIP\DATA\K-ICP-MS-04 (NexION)\082416d.txt**
RUNNO: **511491**

K1608209-010MS - Metals T

MS Recovery

6020A/Metals T - Sb-KED2 - Recovery: 42 Limits: 72 - 124
6020A/Metals T - Pb-KED2 - Recovery: 123 Limits: 84 - 118

K1608209-010DMS - Metals T

DMS Recovery

6020A/Metals T - Sb-KED2 - Recovery: 41 Limits: 72 - 124
6020A/Metals T - Pb-KED2 - Recovery: 134 Limits: 84 - 118

> 3D, PS, LCSW pass.

Analytical Method 6020A

Primary Approver: JDB 8/25/16

Secondary Approver: [signature] 8/25/16

Dataset Report

User Name: ALKLS.ALKLSXP373
Computer Name: ALKLSXP373
Dataset File Path: C:\NexION Data\DataSet\082416D\
Report Date/Time: Thursday, August 25, 2016 11:24:35

The Dataset

Sample ID	Date and Time	Read Type	Description	Batch ID	Samp. File Name
RINSE	17:08:50 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\RINSE.001
Blank	17:11:50 Wed 24-Aug-16	Blank			C:\NexION Data\DataSet\082416D\Blank.002
Standard 1	17:14:49 Wed 24-Aug-16	Standard #1			C:\NexION Data\DataSet\082416D\Standard 1
ICV	17:17:47 Wed 24-Aug-16	QC Std #1			C:\NexION Data\DataSet\082416D\ICV.004
CCV	17:20:47 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.005
ICB	17:23:46 Wed 24-Aug-16	QC Std #3			C:\NexION Data\DataSet\082416D\ICB.006
CCB	17:26:46 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.007
LLICVS	17:29:46 Wed 24-Aug-16	QC Std #5			C:\NexION Data\DataSet\082416D\LLICVS.00
ICSA	17:32:44 Wed 24-Aug-16	QC Std #7			C:\NexION Data\DataSet\082416D\ICSA.009
ICSAB	17:35:43 Wed 24-Aug-16	QC Std #8			C:\NexION Data\DataSet\082416D\ICSAB.010
KQ1609275-03	17:38:44 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
K1608325-001	17:41:43 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-002	17:44:42 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-003	17:47:41 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-004	17:50:40 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-005	17:53:39 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-006	17:56:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-007	17:59:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-008	18:02:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
CCV	18:05:38 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.020
CCB	18:08:37 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.021
K1608325-009	18:11:39 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009L	18:14:38 Wed 24-Aug-16	Sample	25		C:\NexION Data\DataSet\082416D\K1608325-
1000ppb LR	18:17:38 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\1000ppb LI
RINSE	18:20:39 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\RINSE.025
K1608325-009A	18:23:39 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009S	18:26:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009SD	18:29:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
KQ1609275-04	18:32:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
MO STD	18:35:37 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\MO STD.0
K1608325-010	18:38:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
CCV	18:41:38 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.032
CCB	18:44:37 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.033
LLCCVS	18:47:37 Wed 24-Aug-16	QC Std #6			C:\NexION Data\DataSet\082416D\LLCCVS.0
K1608325-011	18:50:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-012	18:53:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-013	18:56:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
KQ1609274-01	18:59:35 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
K1608207-003	19:02:34 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003L	19:05:33 Wed 24-Aug-16	Sample	25		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003A	19:08:32 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003S	19:11:32 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003SD	19:14:31 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
KQ1609274-02	19:17:30 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
CCV	19:20:30 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.045
CCB	19:23:30 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.046
MO STD	19:26:29 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\MO STD.0
K1608207-004	19:29:30 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-005	19:32:29 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-006	19:35:28 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-

K1608207-010	19:38:27 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-011	19:41:26 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-012	19:44:25 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-013	19:47:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-014	19:50:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608210-003	19:53:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
CCV	19:56:24 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.057
CCB	19:59:24 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.058
LLCCVS	20:02:24 Wed 24-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.0
K1608210-004	20:05:25 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-005	20:08:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-006	20:11:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-010	20:14:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-011	20:17:21 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-012	20:20:20 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-013	20:23:19 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-014	20:26:18 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
KQ1609920-03	20:29:17 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160992
K1608344-002	20:32:16 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
CCV	20:35:18 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.070
CCB	20:38:17 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.071
K1608344-003	20:41:19 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-004	20:44:18 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-005	20:47:17 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-008	20:50:16 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-009	20:53:15 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-010	20:56:14 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011	20:59:13 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011L	21:02:12 Wed 24-Aug-16	Sample	25	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011A	21:05:11 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011S	21:08:09 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
CCV	21:11:10 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.082
CCB	21:14:10 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.083
LLCCVS	21:17:09 Wed 24-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.0
K1608344-011SD	21:20:10 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
KQ1609920-04	21:23:09 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160992
MO STD	21:26:10 Wed 24-Aug-16	Sample		C:\NexIONData\DataSet\082416D\MO STD.0
K1608344-012	21:29:11 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
KQ1609300-03	21:32:10 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160930
K1608209-004	21:35:09 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-005	21:38:10 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-006	21:41:08 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-007	21:44:08 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010	21:47:07 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
CCV	21:50:07 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.095
CCV	21:52:26 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.096
CCB	21:55:25 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.097
K1608209-010L	21:58:26 Wed 24-Aug-16	Sample	25	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010A	22:01:25 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010S	22:04:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010SD	22:07:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
KQ1609300-04	22:10:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160930
MO STD	22:13:24 Wed 24-Aug-16	Sample		C:\NexIONData\DataSet\082416D\MO STD.1
K1608209-011	22:16:25 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-012	22:19:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-013	22:22:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-014	22:25:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
CCV	22:28:23 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.108
CCB	22:31:22 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.109
LLCCVS	22:34:22 Wed 24-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.1

K1608209-005	09:25:53 Thu 25-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
CCV	09:28:54 Thu 25-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.112
CCB	09:31:53 Thu 25-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.113
LLCCVS	09:34:53 Thu 25-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.1
LLCCVS	09:37:11 Thu 25-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.1
LLCCVS	09:45:34 Thu 25-Aug-16	Sample		C:\NexION Data\DataSet\082416D\LLCCVS.1

SmartTune Wizard - Details

)ptimization Details

;martTune file: C:\NexIONData\Wizard\SmartTune\CAS SmartTune Full FAST.swz

)ptimization Status

;tart Time: 8/24/2016 10:24:21 AM

lass Calibration and Resolution
Optimization Settings:
Method: C:\NexIONData\Method\CAS Tuning.mth.
MassCal File: C:\NexIONData\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.1 for Mass Cal. and 0.1 for Resolution
Peak height (%) for Res. Opt.: 5

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.704)
Target/Obtained mass (9.0122/9.075), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.700)
Target/Obtained mass (58.9332/58.925), Target/Obtained resolution (0.7/0.692)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.684)
Target/Obtained mass (139.905/139.925), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (207.977/207.975), Target/Obtained resolution (0.7/0.695)
Target/Obtained mass (208.98/208.975), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.694)
Passed] Optimum value(s): N/A

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Wednesday, August 24, 2016 10:28:39
Sample Description:
Method File: C:\NexION\Data\Method\CAS Daily Performance.mth
Dataset File: C:\NexION\Data\Dataset\Default\Daily Performance Check.3538
MassCal File: C:\NexION\Data\MassCal\Default.tun
Conditions File: C:\NexION\Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Li	7.0	28977.1	28977.093	224.933	0.8	Standard
	Be	9.0	9171.5	9171.478	210.427	2.3	Standard
	Mg	24.0	27457.0	27457.035	520.912	1.9	Standard
	Co	58.9	29211.7	29211.711	545.363	1.9	Standard
	In	114.9	62607.9	62607.857	1090.759	1.7	Standard
	Pb	208.0	46834.1	46834.063	274.246	0.6	Standard
	Bi	209.0	37192.9	37192.893	507.538	1.4	Standard
	U	238.1	43013.5	43013.464	453.345	1.1	Standard
⌈	CeO	155.9	779.9	0.017	0.001	4.1	Standard
|>	Ce	139.9	45218.5	45218.523	413.726	0.9	Standard
⌊	Ce++	70.0	932.4	0.021	0.001	3.8	Standard
	Bkgd	220.0	0.0	0.000	0.000		Standard

Replicates

Repeat 1

Analyte	Mass	Meas. Intensity
Li	7	29031.469
Be	9	9361.733
Mg	24	27615.332
Co	59	28951.975
In	115	64276.276
Pb	208	47208.808
Bi	209	37692.994
U	238	42650.238
CeO	156	777.354
Ce	140	44997.422
Ce++	70	927.363
Bkgd	220	0.000

Repeat 2

Analyte	Mass	Meas. Intensity
LI	7	29141.025
Be	9	9108.236
Mg	24	26532.616
Co	59	28640.681
In	115	61917.224
Pb	208	46594.984
Bi	209	37748.474
U	238	42578.023
CeO	156	757.353
Ce	140	44627.598
Ce++	70	934.031
Bkgd	220	0.000

Repeat 3

Analyte	Mass	Meas. Intensity
Li	7	29227.201
Be	9	9417.770
Mg	24	27790.338
Co	59	30092.328
In	115	62519.840

Pb	208	47038.174
Bi	209	37085.407
U	238	43216.603
CeO	156	839.358
Ce	140	45696.302
Ce++	70	991.368
Bkgd	220	0.000

Repeat 4

Analyte	Mass	Meas. Intensity
Li	7	28730.862
Be	9	8927.455
Mg	24	27696.155
Co	59	29285.320
In	115	62902.849
Pb	208	46708.146
Bi	209	36791.315
U	238	42935.758
CeO	156	778.688
Ce	140	45420.759
Ce++	70	920.696
Bkgd	220	0.000

Repeat 5

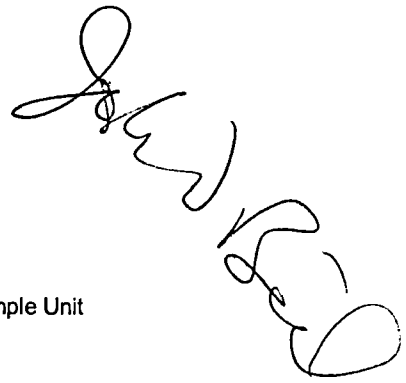
Analyte	Mass	Meas. Intensity
Li	7	28754.910
Be	9	9042.194
Mg	24	27650.734
Co	59	29088.251
In	115	61423.098
Pb	208	46620.206
Bi	209	36646.276
U	238	43686.696
CeO	156	746.686
Ce	140	45350.536
Ce++	70	888.694
Bkgd	220	0.000

Current Conditions File Data

Current Value	Description
0.87	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
16.00	Plasma Gas Flow
-9.50	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-14.50	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.87	DRC Mode NEB
-6.50	DRC Mode QRO
-1.50	DRC Mode CRO
-10.00	DRC Mode Cell Entrance/Exit Voltage
3.50	Cell Gas A
0.00	Cell Gas B
280.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-40.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

LABWORKS - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, August 24, 2016 17:11:50
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\Blank.002
User Name: JDB
Batch ID:



Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.0	32.8			ppb
|	Cu-KED3	65	13.0	35.3			ppb
|	Zn-KED3	66	7.3	41.7			ppb
⌊>	Ge-KED3	72	13511.1	1.9			ppb
⌈>	In-KED2	115	14199.0	2.3			ppb
|	Sb-KED2	121	42.7	39.0			ppb
⌊	Sb-KED2	123	27.6	18.6			ppb
⌈>	Lu-KED2	175	53932.4	3.5			ppb
⌊	Pb-KED2	208	22.0	9.1			ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, August 24, 2016 17:14:49
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\Standard 1.003
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	16807.2	1.4	25.00000	1.4	ppb
	Cu-KED3	65	8560.9	2.8	25.00000	1.3	ppb
	Zn-KED3	66	1556.4	4.3	25.00000	4.6	ppb
>	Ge-KED3	72	13608.8	2.5			ppb
>	In-KED2	115	14381.4	0.7			ppb
	Sb-KED2	121	9195.6	3.3	25.00000	4.0	ppb
	Sb-KED2	123	7378.3	0.3	25.00000	1.0	ppb
>	Lu-KED2	175	55017.8	3.0			ppb
	Pb-KED2	208	137772.3	1.9	25.00000	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72					
>	In-KED2	115					
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175					
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICV
Sample Date/Time: Wednesday, August 24, 2016 17:17:47
Sample Description:
Autosampler Position: 3
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\ICV.004
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8589.9	2.5	12.78956	2.9	ppb
|	Cu-KED3	65	4412.3	1.1	12.89705	1.0	ppb
|	Zn-KED3	66	1572.1	2.8	25.30139	1.6	ppb
⌊>	Ge-KED3	72	13577.8	1.6			ppb
⌈>	In-KED2	115	14638.3	3.0			ppb
|	Sb-KED2	121	9479.1	1.7	25.33934	4.7	ppb
⌊	Sb-KED2	123	7544.5	1.2	25.12285	1.8	ppb
⌈>	Lu-KED2	175	54101.6	1.2			ppb
⌊	Pb-KED2	208	139481.6	0.5	25.72290	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	102				
|	Cu-KED3	65	103				
|	Zn-KED3	66	101				
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		103			
|	Sb-KED2	121	101				
⌊	Sb-KED2	123	100				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	103				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 17:20:47
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.005
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	16960.7	2.6	25.10516	2.6	ppb
	Cu-KED3	65	8668.6	3.4	25.19456	3.0	ppb
	Zn-KED3	66	1512.7	4.2	24.17422	4.2	ppb
>	Ge-KED3	72	13673.2	1.1			ppb
>	In-KED2	115	14452.9	1.7			ppb
	Sb-KED2	121	9229.0	3.9	24.96286	3.6	ppb
	Sb-KED2	123	7304.6	1.4	24.63300	2.9	ppb
>	Lu-KED2	175	54586.1	1.1			ppb
	Pb-KED2	208	137297.6	2.0	25.09856	3.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	100				
	Cu-KED3	65	101				
	Zn-KED3	66	97				
>	Ge-KED3	72		101			
>	In-KED2	115		102			
	Sb-KED2	121	100				
	Sb-KED2	123	99				
>	Lu-KED2	175		101			
	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICB
Sample Date/Time: Wednesday, August 24, 2016 17:23:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICB.006
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.0	32.8	-0.00014	8386.3	ppb
|	Cu-KED3	65	12.7	19.9	-0.00121	643.5	ppb
|	Zn-KED3	66	6.0	72.6	-0.02350	286.9	ppb
⌊>	Ge-KED3	72	13625.8	2.5			ppb
⌈>	In-KED2	115	14461.3	1.6			ppb
|	Sb-KED2	121	38.7	29.4	-0.01291	243.6	ppb
⌊	Sb-KED2	123	38.0	9.9	0.03369	39.4	ppb
⌈>	Lu-KED2	175	53483.9	1.0			ppb
⌊	Pb-KED2	208	13.3	37.7	-0.00159	57.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 17:26:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\CCB.007
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.7	36.7	0.00125	970.9	ppb
|	Cu-KED3	65	8.7	52.0	-0.01257	105.8	ppb
|	Zn-KED3	66	4.7	32.7	-0.04239	60.3	ppb
⌊>	Ge-KED3	72	13371.3	1.4			ppb
⌈>	In-KED2	115	14142.7	2.4			ppb
|	Sb-KED2	121	31.3	14.7	-0.03076	48.0	ppb
⌊	Sb-KED2	123	30.5	29.5	0.01001	280.9	ppb
⌈>	Lu-KED2	175	53810.6	4.7			ppb
⌊	Pb-KED2	208	16.0	21.7	-0.00111	53.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLICVS
Sample Date/Time: Wednesday, August 24, 2016 17:29:46
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLICVS.008
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	153.3	19.6	0.19913	22.3	ppb
	Cu-KED3	65	72.7	7.6	0.17827	13.1	ppb
	Zn-KED3	66	67.7	6.0	0.99191	8.4	ppb
>	Ge-KED3	72	13385.6	3.2			ppb
>	In-KED2	115	14481.7	1.7			ppb
	Sb-KED2	121	89.3	14.9	0.12403	27.2	ppb
	Sb-KED2	123	59.0	10.8	0.10449	21.7	ppb
>	Lu-KED2	175	54129.1	2.2			ppb
	Pb-KED2	208	576.7	2.9	0.10230	4.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	100				
	Cu-KED3	65	89				
	Zn-KED3	66	99				
>	Ge-KED3	72		99			
>	In-KED2	115		102			
	Sb-KED2	121	124				
	Sb-KED2	123	104				
>	Lu-KED2	175		100			
	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: ICSA
Sample Date/Time: Wednesday, August 24, 2016 17:32:44
Sample Description:
Autosampler Position: 5
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICSA.009
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	332.7	3.7	0.55414	6.0	ppb
|	Cu-KED3	65	186.7	3.6	0.60816	1.7	ppb
|	Zn-KED3	66	16.3	24.7	0.19385	42.6	ppb
⌊>	Ge-KED3	72	11490.6	2.0			ppb
⌈>	In-KED2	115	12531.7	2.8			ppb
|	Sb-KED2	121	46.0	7.5	0.02611	35.9	ppb
⌊	Sb-KED2	123	35.0	19.6	0.04193	71.1	ppb
⌈>	Lu-KED2	175	50920.0	2.5			ppb
⌊	Pb-KED2	208	400.7	3.0	0.07445	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICSAB
Sample Date/Time: Wednesday, August 24, 2016 17:35:43
Sample Description:
Autosampler Position: 6
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICSAB.010
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26192.0	1.0	45.28134	1.4	ppb
|	Cu-KED3	65	13434.6	2.3	45.61223	2.5	ppb
|	Zn-KED3	66	1162.0	0.9	21.66620	2.3	ppb
⌊>	Ge-KED3	72	11715.5	2.2			ppb
⌈>	In-KED2	115	12651.5	2.6			ppb
|	Sb-KED2	121	45.3	28.7	0.02319	181.7	ppb
⌊	Sb-KED2	123	35.1	10.2	0.04096	38.2	ppb
⌈>	Lu-KED2	175	50557.3	1.4			ppb
⌊	Pb-KED2	208	394.7	8.2	0.07378	7.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	91				
|	Cu-KED3	65	91				
|	Zn-KED3	66	87				
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-03
Sample Date/Time: Wednesday, August 24, 2016 17:38:44
Sample Description: 5
Autosampler Position: 301
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-03.011
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	61.3	30.3	0.06850	47.1	ppb
|	Cu-KED3	65	33.3	27.9	0.06992	44.8	ppb
|	Zn-KED3	66	47.3	19.2	0.72670	23.0	ppb
⌊>	Ge-KED3	72	12296.0	2.1			ppb
⌈>	In-KED2	115	13169.9	3.8			ppb
|	Sb-KED2	121	16.0	21.7	-0.07051	11.9	ppb
⌊	Sb-KED2	123	13.2	33.6	-0.04629	31.7	ppb
⌈>	Lu-KED2	175	50708.9	4.0			ppb
⌊	Pb-KED2	208	412.7	13.3	0.07694	9.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		93			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-001
Sample Date/Time: Wednesday, August 24, 2016 17:41:43
Sample Description: 5
Autosampler Position: 302
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-001.012
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13757.3	1.6	22.92116	4.4	ppb
|	Cu-KED3	65	7001.0	2.0	22.89886	3.7	ppb
|	Zn-KED3	66	7941.5	1.0	143.43907	4.0	ppb
⌊>	Ge-KED3	72	12156.5	3.2			ppb
⌈>	In-KED2	115	12735.7	1.5			ppb
|	Sb-KED2	121	143.3	12.0	0.32411	16.8	ppb
⌊	Sb-KED2	123	123.1	12.3	0.37762	15.2	ppb
⌈>	Lu-KED2	175	52570.6	3.6			ppb
⌊	Pb-KED2	208	339169.4	1.9	64.43031	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		90			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-002
Sample Date/Time: Wednesday, August 24, 2016 17:44:42
Sample Description: 5
Autosampler Position: 303
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-002.013
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13016.6	2.5	22.77098	5.3	ppb
|	Cu-KED3	65	6751.9	2.3	23.18430	3.7	ppb
|	Zn-KED3	66	5180.9	1.5	98.20744	4.2	ppb
⌊>	Ge-KED3	72	11578.4	2.8			ppb
⌈>	In-KED2	115	12674.1	2.3			ppb
|	Sb-KED2	121	264.7	9.6	0.70356	13.8	ppb
⌊	Sb-KED2	123	222.5	8.1	0.76279	6.9	ppb
⌈>	Lu-KED2	175	52425.4	0.8			ppb
⌊	Pb-KED2	208	988623.6	1.3	188.16684	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-003
Sample Date/Time: Wednesday, August 24, 2016 17:47:41
Sample Description: 5
Autosampler Position: 304
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-003.014
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	37074.1	1.7	63.83479	2.0	ppb
|	Cu-KED3	65	19023.0	0.7	64.32801	1.5	ppb
|	Zn-KED3	66	6079.6	2.6	113.34517	2.0	ppb
⌊>	Ge-KED3	72	11764.5	1.3			ppb
⌈>	In-KED2	115	12862.4	0.8			ppb
|	Sb-KED2	121	206.7	5.0	0.51311	6.3	ppb
⌊	Sb-KED2	123	150.0	7.7	0.47561	10.0	ppb
⌈>	Lu-KED2	175	52008.2	3.0			ppb
⌊	Pb-KED2	208	662759.4	0.8	127.20702	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-004
Sample Date/Time: Wednesday, August 24, 2016 17:50:40
Sample Description: 5
Autosampler Position: 305
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608325-004.015
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20673.6	2.3	37.60755	5.4	ppb
|	Cu-KED3	65	10600.9	1.0	37.86567	4.6	ppb
|	Zn-KED3	66	5676.8	0.6	111.84245	4.2	ppb
⌊>	Ge-KED3	72	11144.0	3.6			ppb
⌈>	In-KED2	115	12459.0	3.1			ppb
|	Sb-KED2	121	181.3	5.7	0.45406	8.6	ppb
⌊	Sb-KED2	123	157.3	8.5	0.52186	6.6	ppb
⌈>	Lu-KED2	175	51653.5	0.3			ppb
⌊	Pb-KED2	208	614372.4	0.8	118.67650	0.8	ppb

QC Calculated Values

	IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈		Cu-KED3	63					
|		Cu-KED3	65					
|		Zn-KED3	66					
⌊>		Ge-KED3	72		82			
⌈>		In-KED2	115		88			
|		Sb-KED2	121					
⌊		Sb-KED2	123					
⌈>		Lu-KED2	175		96			
⌊		Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-005
Sample Date/Time: Wednesday, August 24, 2016 17:53:39
Sample Description: 5
Autosampler Position: 306
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-005.016
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21096.9	0.7	37.17840	0.7	ppb
|	Cu-KED3	65	10701.0	2.6	37.03459	2.8	ppb
|	Zn-KED3	66	7196.1	0.3	137.40686	0.4	ppb
⌊>	Ge-KED3	72	11489.3	0.6			ppb
⌈>	In-KED2	115	12782.4	3.8			ppb
|	Sb-KED2	121	136.7	20.7	0.30233	29.4	ppb
⌊	Sb-KED2	123	102.7	15.2	0.29951	24.1	ppb
⌈>	Lu-KED2	175	51442.2	2.3			ppb
⌊	Pb-KED2	208	314204.3	1.1	60.96955	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		95			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-006
Sample Date/Time: Wednesday, August 24, 2016 17:56:38
Sample Description: 5
Autosampler Position: 307
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-006.017
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21272.5	2.5	37.41008	2.6	ppb
|	Cu-KED3	65	10863.5	1.7	37.52093	2.4	ppb
|	Zn-KED3	66	5860.9	1.4	111.65831	1.7	ppb
⌊>	Ge-KED3	72	11513.3	0.7			ppb
⌈>	In-KED2	115	12420.1	1.0			ppb
|	Sb-KED2	121	197.3	6.1	0.50611	7.9	ppb
⌊	Sb-KED2	123	148.1	12.3	0.48789	13.4	ppb
⌈>	Lu-KED2	175	51833.9	2.3			ppb
⌊	Pb-KED2	208	724076.6	0.8	139.41677	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		87			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-007
Sample Date/Time: Wednesday, August 24, 2016 17:59:37
Sample Description: 5
Autosampler Position: 308
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-007.018
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10852.1	1.5	16.07406	2.7	ppb
|	Cu-KED3	65	5567.8	2.2	16.20625	6.0	ppb
|	Zn-KED3	66	4650.8	3.2	74.63535	0.6	ppb
⌊>	Ge-KED3	72	13662.2	3.7			ppb
⌈>	In-KED2	115	14062.1	1.1			ppb
|	Sb-KED2	121	264.7	5.7	0.62158	8.1	ppb
⌊	Sb-KED2	123	210.7	11.9	0.63777	13.3	ppb
⌈>	Lu-KED2	175	57306.8	2.3			ppb
⌊	Pb-KED2	208	539086.9	1.0	93.89746	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-008
Sample Date/Time: Wednesday, August 24, 2016 18:02:36
Sample Description: 5
Autosampler Position: 309
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-008.019
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17839.1	2.7	26.20102	3.2	ppb
|	Cu-KED3	65	9274.7	1.9	26.74852	2.2	ppb
|	Zn-KED3	66	4843.8	1.3	77.07091	2.9	ppb
⌊>	Ge-KED3	72	13783.3	2.0			ppb
⌈>	In-KED2	115	14057.2	1.9			ppb
|	Sb-KED2	121	582.0	0.7	1.50842	1.5	ppb
⌊	Sb-KED2	123	444.3	6.2	1.45116	6.6	ppb
⌈>	Lu-KED2	175	58223.4	2.2			ppb
⌊	Pb-KED2	208	1459810.9	2.2	250.17360	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:05:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.020
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17135.6	1.7	24.98285	3.5	ppb
|	Cu-KED3	65	8893.8	2.2	25.46074	3.4	ppb
|	Zn-KED3	66	1576.1	3.8	24.84199	7.9	ppb
⌊>	Ge-KED3	72	13893.1	4.0			ppb
⌈>	In-KED2	115	14877.2	4.0			ppb
|	Sb-KED2	121	9245.7	0.8	24.31655	4.1	ppb
⌊	Sb-KED2	123	7555.7	3.9	24.78177	6.6	ppb
⌈>	Lu-KED2	175	55457.5	2.6			ppb
⌊	Pb-KED2	208	137693.1	1.3	24.78655	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	102				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121	97				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:08:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.021
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14.0	0.0	-0.01249	3.0	ppb
|	Cu-KED3	65	11.0	48.1	-0.00683	212.3	ppb
|	Zn-KED3	66	3.0	88.2	-0.07146	59.4	ppb
⌊>	Ge-KED3	72	13835.4	1.9			ppb
⌈>	In-KED2	115	14472.1	1.4			ppb
|	Sb-KED2	121	31.3	32.1	-0.03275	86.5	ppb
⌊	Sb-KED2	123	34.1	27.5	0.02006	150.2	ppb
⌈>	Lu-KED2	175	54671.8	1.2			ppb
⌊	Pb-KED2	208	36.7	69.5	0.00259	175.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009
Sample Date/Time: Wednesday, August 24, 2016 18:11:39
Sample Description: 5
Autosampler Position: 310
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009.022
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11933.7	1.9	20.14639	2.4	ppb
|	Cu-KED3	65	6132.0	2.8	20.32837	3.5	ppb
|	Zn-KED3	66	5327.7	2.3	97.49563	2.9	ppb
⌊>	Ge-KED3	72	11985.4	0.7			ppb
⌈>	In-KED2	115	13108.1	2.8			ppb
|	Sb-KED2	121	118.7	10.8	0.23844	20.1	ppb
⌊	Sb-KED2	123	103.7	10.5	0.29124	10.1	ppb
⌈>	Lu-KED2	175	54162.2	0.8			ppb
⌊	Pb-KED2	208	274508.7	0.6	50.56962	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		89			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009L
Sample Date/Time: Wednesday, August 24, 2016 18:14:38
Sample Description: 25
Autosampler Position: 311
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009L.023
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2746.3	2.8	4.29828	2.7	ppb
|	Cu-KED3	65	1408.7	5.7	4.32558	5.8	ppb
|	Zn-KED3	66	1215.1	2.8	20.64461	2.8	ppb
⌊>	Ge-KED3	72	12848.8	0.3			ppb
⌈>	In-KED2	115	13843.8	3.1			ppb
|	Sb-KED2	121	55.3	47.2	0.03917	187.1	ppb
⌊	Sb-KED2	123	37.4	10.2	0.03755	47.4	ppb
⌈>	Lu-KED2	175	53517.1	2.7			ppb
⌊	Pb-KED2	208	59031.8	1.1	11.00953	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: 1000ppb LR
Sample Date/Time: Wednesday, August 24, 2016 18:17:38
Sample Description:
Autosampler Position: 124
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\1000ppb LR.024
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	648384.3	0.2	985.81018	2.0	ppb
|	Cu-KED3	65	330737.8	0.4	987.68136	2.3	ppb
|	Zn-KED3	66	59287.1	1.0	976.46035	1.1	ppb
⌊>	Ge-KED3	72	13331.6	1.9			ppb
⌈>	In-KED2	115	13975.8	2.9			ppb
|	Sb-KED2	121	353649.3	1.6	994.41063	3.8	ppb
⌊	Sb-KED2	123	282852.1	1.0	990.18826	2.0	ppb
⌈>	Lu-KED2	175	53911.2	1.8			ppb
⌊	Pb-KED2	208	5431439.9	0.6	1005.54435	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: RINSE
Sample Date/Time: Wednesday, August 24, 2016 18:20:39
Sample Description:
Autosampler Position: 123
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\RINSE.025
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41.3	14.8	0.02882	30.6	ppb
|	Cu-KED3	65	25.7	12.5	0.03717	26.2	ppb
|	Zn-KED3	66	5.3	21.7	-0.03280	55.1	ppb
⌊>	Ge-KED3	72	13542.1	0.9			ppb
⌈>	In-KED2	115	14338.2	1.5			ppb
|	Sb-KED2	121	232.7	13.2	0.51860	14.5	ppb
⌊	Sb-KED2	123	187.3	5.5	0.54366	4.9	ppb
⌈>	Lu-KED2	175	53342.4	1.0			ppb
⌊	Pb-KED2	208	95.3	7.9	0.01376	9.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009A
Sample Date/Time: Wednesday, August 24, 2016 18:23:39
Sample Description: 5 +50ppb
Autosampler Position: 312
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009A.026
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	40409.1	1.7	67.01339	5.5	ppb
|	Cu-KED3	65	20276.0	1.2	66.04478	5.7	ppb
|	Zn-KED3	66	7901.2	2.8	142.01360	7.4	ppb
⌊>	Ge-KED3	72	12234.2	4.8			ppb
⌈>	In-KED2	115	12949.2	2.6			ppb
|	Sb-KED2	121	16770.5	0.7	50.76768	2.2	ppb
⌊	Sb-KED2	123	13440.7	1.8	50.68347	1.6	ppb
⌈>	Lu-KED2	175	54912.7	1.7			ppb
⌊	Pb-KED2	208	519477.1	0.7	94.41346	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		102			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009S
Sample Date/Time: Wednesday, August 24, 2016 18:26:38
Sample Description: 5
Autosampler Position: 313
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009S.027
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	65584.9	0.8	112.13773	1.2	ppb
|	Cu-KED3	65	33389.6	1.2	112.11907	1.1	ppb
|	Zn-KED3	66	15616.9	0.7	289.28340	1.3	ppb
⌊>	Ge-KED3	72	11849.2	0.7			ppb
⌈>	In-KED2	115	12960.3	0.8			ppb
|	Sb-KED2	121	33177.2	1.3	100.42942	1.5	ppb
⌊	Sb-KED2	123	26765.4	1.7	100.92564	2.2	ppb
⌈>	Lu-KED2	175	54560.4	2.0			ppb
⌊	Pb-KED2	208	1229425.3	0.7	224.90150	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		88			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009SD
Sample Date/Time: Wednesday, August 24, 2016 18:29:37
Sample Description: 5
Autosampler Position: 314
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009SD.028
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66172.2	0.2	114.45741	2.3	ppb
|	Cu-KED3	65	34069.6	1.1	115.75200	3.2	ppb
|	Zn-KED3	66	15807.7	1.2	296.24495	3.0	ppb
⌊>	Ge-KED3	72	11716.5	2.2			ppb
⌈>	In-KED2	115	12999.1	3.3			ppb
|	Sb-KED2	121	33638.9	0.9	101.57730	2.6	ppb
⌊	Sb-KED2	123	26790.3	2.4	100.72949	1.1	ppb
⌈>	Lu-KED2	175	55716.5	2.2			ppb
⌊	Pb-KED2	208	1258981.6	0.6	225.53414	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-04
Sample Date/Time: Wednesday, August 24, 2016 18:32:36
Sample Description: 5
Autosampler Position: 315
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-04.029
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	61075.7	3.3	100.43228	6.8	ppb
|	Cu-KED3	65	31670.8	3.0	102.28434	6.7	ppb
|	Zn-KED3	66	11449.9	3.2	203.96576	6.8	ppb
⌊>	Ge-KED3	72	12340.3	3.9			ppb
⌈>	In-KED2	115	13527.4	3.5			ppb
|	Sb-KED2	121	69023.1	2.8	200.40854	3.7	ppb
⌊	Sb-KED2	123	55565.4	2.6	200.86105	1.2	ppb
⌈>	Lu-KED2	175	52621.8	2.6			ppb
⌊	Pb-KED2	208	1037460.7	1.3	196.79045	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		95			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 18:35:37
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.030
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27.3	40.3	0.00900	195.2	ppb
|	Cu-KED3	65	18.3	50.7	0.01675	165.5	ppb
|	Zn-KED3	66	9.3	37.6	0.03604	167.3	ppb
⌊>	Ge-KED3	72	13239.1	1.4			ppb
⌈>	In-KED2	115	13908.3	1.9			ppb
|	Sb-KED2	121	70.0	37.5	0.07925	90.3	ppb
⌊	Sb-KED2	123	51.9	7.0	0.08756	17.6	ppb
⌈>	Lu-KED2	175	53323.3	1.0			ppb
⌊	Pb-KED2	208	81.3	56.2	0.01120	77.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-010
Sample Date/Time: Wednesday, August 24, 2016 18:38:37
Sample Description: 5
Autosampler Position: 316
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-010.031
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	9698.0	0.8	16.79328	2.3	ppb
|	Cu-KED3	65	5084.2	2.2	17.28809	3.3	ppb
|	Zn-KED3	66	5760.2	1.9	108.18915	3.8	ppb
⌊>	Ge-KED3	72	11685.1	3.0			ppb
⌈>	In-KED2	115	12868.9	1.0			ppb
|	Sb-KED2	121	107.3	11.4	0.20975	18.7	ppb
⌊	Sb-KED2	123	81.4	15.7	0.21414	21.2	ppb
⌈>	Lu-KED2	175	53831.3	2.1			ppb
⌊	Pb-KED2	208	185656.8	1.2	34.42119	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:41:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.032
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16089.7	1.1	24.71959	0.9	ppb
|	Cu-KED3	65	8286.4	2.4	24.99570	1.0	ppb
|	Zn-KED3	66	1495.7	1.2	24.81916	3.0	ppb
⌊>	Ge-KED3	72	13174.1	1.9			ppb
⌈>	In-KED2	115	13475.5	1.6			ppb
|	Sb-KED2	121	8777.4	1.5	25.47231	2.9	ppb
⌊	Sb-KED2	123	7030.6	1.5	25.43173	3.0	ppb
⌈>	Lu-KED2	175	50414.2	1.9			ppb
⌊	Pb-KED2	208	132601.6	0.6	26.24905	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	100				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		95			
|	Sb-KED2	121	102				
⌊	Sb-KED2	123	102				
⌈>	Lu-KED2	175		93			
⌊	Pb-KED2	208	105				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:44:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.033
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	19.3	6.0	-0.00325	55.2	ppb
|	Cu-KED3	65	9.7	11.9	-0.00910	36.4	ppb
|	Zn-KED3	66	4.7	32.7	-0.04127	62.9	ppb
⌊>	Ge-KED3	72	13171.7	0.7			ppb
⌈>	In-KED2	115	14028.9	2.1			ppb
|	Sb-KED2	121	46.0	45.4	0.01047	547.5	ppb
⌊	Sb-KED2	123	41.2	15.7	0.04839	41.0	ppb
⌈>	Lu-KED2	175	54678.5	2.9			ppb
⌊	Pb-KED2	208	18.0	29.4	-0.00079	120.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 18:47:37
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\LLCCVS.034
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	164.7	11.5	0.21089	14.6	ppb
|	Cu-KED3	65	78.7	7.4	0.19056	11.0	ppb
|	Zn-KED3	66	60.3	5.8	0.84822	6.9	ppb
⌊>	Ge-KED3	72	13696.6	1.9			ppb
⌈>	In-KED2	115	14455.7	2.5			ppb
|	Sb-KED2	121	103.3	19.0	0.16216	29.2	ppb
⌊	Sb-KED2	123	66.2	14.5	0.12906	23.9	ppb
⌈>	Lu-KED2	175	55465.8	1.9			ppb
⌊	Pb-KED2	208	621.3	2.9	0.10770	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	105				
|	Cu-KED3	65	95				
|	Zn-KED3	66	85				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	162				
⌊	Sb-KED2	123	129				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	108				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: K1608325-011
Sample Date/Time: Wednesday, August 24, 2016 18:50:38
Sample Description: 5
Autosampler Position: 317
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-011.035
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	54822.3	1.3	80.74822	1.8	ppb
|	Cu-KED3	65	27637.7	1.5	79.94694	1.9	ppb
|	Zn-KED3	66	7522.6	2.1	119.98855	2.7	ppb
⌊>	Ge-KED3	72	13754.3	1.3			ppb
⌈>	In-KED2	115	14517.5	4.1			ppb
|	Sb-KED2	121	3769.8	1.0	10.09079	3.6	ppb
⌊	Sb-KED2	123	3063.5	1.3	10.23489	3.1	ppb
⌈>	Lu-KED2	175	59191.7	1.9			ppb
⌊	~~Pb-KED2~~	~~208~~	~~17281705.6~~	1.8	~~2914.29614~~	~~3.2~~	~~ppb~~

Over Linear Range

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

JS 8/25/16

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-012
Sample Date/Time: Wednesday, August 24, 2016 18:53:37
Sample Description: 5
Autosampler Position: 318
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-012.036
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22589.2	2.2	33.48770	1.4	ppb
|	Cu-KED3	65	11756.8	1.0	34.22973	0.6	ppb
|	Zn-KED3	66	5648.8	0.7	90.71860	1.7	ppb
⌊>	Ge-KED3	72	13655.9	1.4			ppb
⌈>	In-KED2	115	14287.6	2.4			ppb
|	Sb-KED2	121	338.7	9.0	0.81325	10.6	ppb
⌊	Sb-KED2	123	261.4	2.7	0.80057	5.4	ppb
⌈>	Lu-KED2	175	58186.6	0.4			ppb
⌊	Pb-KED2	208	924924.8	1.8	158.60167	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-013
Sample Date/Time: Wednesday, August 24, 2016 18:56:36
Sample Description: 5
Autosampler Position: 319
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-013.037
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41003.4	2.0	59.51113	1.9	ppb
|	Cu-KED3	65	21144.6	1.7	60.26971	1.7	ppb
|	Zn-KED3	66	7660.1	1.9	120.40587	1.9	ppb
⌊>	Ge-KED3	72	13954.8	0.0			ppb
⌈>	In-KED2	115	14325.4	2.8			ppb
|	Sb-KED2	121	409.3	3.7	1.00495	5.5	ppb
⌊	Sb-KED2	123	319.9	4.4	0.99729	3.8	ppb
⌈>	Lu-KED2	175	57653.5	3.8			ppb
⌊	Pb-KED2	208	2271766.3	1.6	393.66609	5.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-01
Sample Date/Time: Wednesday, August 24, 2016 18:59:35
Sample Description: 5
Autosampler Position: 320
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609274-01.038
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43.3	57.7	0.03308	122.6	ppb
|	Cu-KED3	65	15.0	52.9	0.00665	382.5	ppb
|	Zn-KED3	66	30.3	33.3	0.37974	48.8	ppb
⌊>	Ge-KED3	72	13463.3	3.6			ppb
⌈>	In-KED2	115	14766.0	0.5			ppb
|	Sb-KED2	121	20.0	30.0	-0.06477	25.0	ppb
⌊	Sb-KED2	123	12.7	16.2	-0.05278	13.0	ppb
⌈>	Lu-KED2	175	55555.5	1.6			ppb
⌊	Pb-KED2	208	311.3	19.9	0.05187	21.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003
Sample Date/Time: Wednesday, August 24, 2016 19:02:34
Sample Description: 5
Autosampler Position: 321
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003.039
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28814.4	2.1	41.50209	1.6	ppb
|	Cu-KED3	65	14819.0	0.3	41.93087	3.0	ppb
|	Zn-KED3	66	8934.1	0.9	139.47166	3.3	ppb
⌊>	Ge-KED3	72	14061.6	2.9			ppb
⌈>	In-KED2	115	14689.3	1.3			ppb
|	Sb-KED2	121	205.3	11.9	0.43063	13.9	ppb
⌊	Sb-KED2	123	164.6	6.4	0.45335	9.3	ppb
⌈>	Lu-KED2	175	57238.9	3.8			ppb
⌊	Pb-KED2	208	433908.8	2.3	75.73415	5.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003L
Sample Date/Time: Wednesday, August 24, 2016 19:05:33
Sample Description: 25
Autosampler Position: 322
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003L.040
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	6288.1	2.0	8.76190	3.4	ppb
|	Cu-KED3	65	3266.0	1.3	8.93159	1.4	ppb
|	Zn-KED3	66	1912.1	1.8	28.85805	3.3	ppb
⌊>	Ge-KED3	72	14494.7	2.2			ppb
⌈>	In-KED2	115	15519.0	0.6			ppb
|	Sb-KED2	121	60.0	10.0	0.03384	45.2	ppb
⌊	Sb-KED2	123	60.4	10.9	0.09519	20.6	ppb
⌈>	Lu-KED2	175	57681.9	1.8			ppb
⌊	Pb-KED2	208	91301.6	0.9	15.79201	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003A
Sample Date/Time: Wednesday, August 24, 2016 19:08:32
Sample Description: 5 +50ppb
Autosampler Position: 323
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003A.041
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	62226.6	0.4	89.95883	2.0	ppb
|	Cu-KED3	65	32106.4	1.7	91.14252	1.3	ppb
|	Zn-KED3	66	12167.2	2.4	190.48179	1.2	ppb
⌊>	Ge-KED3	72	14015.5	1.6			ppb
⌈>	In-KED2	115	14573.8	2.7			ppb
|	Sb-KED2	121	19122.8	1.9	51.43981	3.0	ppb
⌊	Sb-KED2	123	15311.4	0.1	51.31767	2.8	ppb
⌈>	Lu-KED2	175	58962.8	1.4			ppb
⌊	Pb-KED2	208	707622.0	1.1	119.76963	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003S
Sample Date/Time: Wednesday, August 24, 2016 19:11:32
Sample Description: 5
Autosampler Position: 324
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003S.042
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	96007.5	0.1	138.82164	1.4	ppb
|	Cu-KED3	65	49006.2	0.3	139.17446	1.8	ppb
|	Zn-KED3	66	20364.2	0.9	319.02374	2.3	ppb
⌊>	Ge-KED3	72	14013.5	1.5			ppb
⌈>	In-KED2	115	14800.8	1.8			ppb
|	Sb-KED2	121	28194.5	0.5	74.71318	1.5	ppb
⌊	Sb-KED2	123	22952.5	0.5	75.76965	1.7	ppb
⌈>	Lu-KED2	175	59182.4	1.5			ppb
⌊	Pb-KED2	208	1516079.5	1.5	255.67736	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003SD
Sample Date/Time: Wednesday, August 24, 2016 19:14:31
Sample Description: 5
Autosampler Position: 325
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003SD.043
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	92556.9	0.8	133.49609	0.6	ppb
|	Cu-KED3	65	47803.9	1.7	135.41397	1.6	ppb
|	Zn-KED3	66	20692.3	1.3	323.33310	1.4	ppb
⌊>	Ge-KED3	72	14046.9	0.6			ppb
⌈>	In-KED2	115	14549.2	2.4			ppb
|	Sb-KED2	121	28670.1	2.0	77.28767	1.5	ppb
⌊	Sb-KED2	123	22927.2	1.9	76.98748	0.6	ppb
⌈>	Lu-KED2	175	59706.6	3.3			ppb
⌊	Pb-KED2	208	1436600.4	0.8	240.26528	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-02
Sample Date/Time: Wednesday, August 24, 2016 19:17:30
Sample Description: 5
Autosampler Position: 326
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609274-02.044
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	70748.1	0.2	96.82903	1.2	ppb
|	Cu-KED3	65	36111.6	1.7	97.07193	2.4	ppb
|	Zn-KED3	66	12892.5	2.6	191.12099	2.6	ppb
⌊>	Ge-KED3	72	14802.7	1.0			ppb
⌈>	In-KED2	115	15212.7	1.3			ppb
|	Sb-KED2	121	74789.3	0.9	192.98203	0.7	ppb
⌊	Sb-KED2	123	60683.4	0.5	195.04042	1.7	ppb
⌈>	Lu-KED2	175	58837.9	1.6			ppb
⌊	Pb-KED2	208	1124414.0	1.0	190.73309	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		110			
⌈>	In-KED2	115		107			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:20:30
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.045
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18383.8	2.5	25.27169	2.7	ppb
|	Cu-KED3	65	9437.8	1.7	25.47483	1.6	ppb
|	Zn-KED3	66	1655.8	1.2	24.57229	0.4	ppb
⌊>	Ge-KED3	72	14724.3	1.5			ppb
⌈>	In-KED2	115	15360.0	2.7			ppb
|	Sb-KED2	121	9712.0	2.1	24.73703	4.8	ppb
⌊	Sb-KED2	123	7787.7	2.0	24.70856	1.7	ppb
⌈>	Lu-KED2	175	57876.7	0.3			ppb
⌊	Pb-KED2	208	145007.0	1.6	24.99489	1.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:23:30
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.046
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13.3	37.7	-0.01453	47.2	ppb
|	Cu-KED3	65	6.7	22.9	-0.02015	20.1	ppb
|	Zn-KED3	66	5.7	27.0	-0.03408	65.7	ppb
⌊>	Ge-KED3	72	14603.5	0.7			ppb
⌈>	In-KED2	115	15432.7	2.2			ppb
|	Sb-KED2	121	40.7	45.7	-0.01501	302.0	ppb
⌊	Sb-KED2	123	39.5	14.4	0.03020	54.9	ppb
⌈>	Lu-KED2	175	57083.2	3.2			ppb
⌊	Pb-KED2	208	24.7	33.8	0.00027	595.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		108			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 19:26:29
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.047
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45.3	33.7	0.03175	68.3	ppb
|	Cu-KED3	65	21.3	21.1	0.02158	58.8	ppb
|	Zn-KED3	66	12.3	9.4	0.07171	24.1	ppb
⌊>	Ge-KED3	72	14183.7	0.4			ppb
⌈>	In-KED2	115	15440.8	1.1			ppb
|	Sb-KED2	121	45.3	43.5	-0.00303	1610.4	ppb
⌊	Sb-KED2	123	37.5	10.7	0.02371	49.6	ppb
⌈>	Lu-KED2	175	58055.4	0.6			ppb
⌊	Pb-KED2	208	42.7	31.9	0.00326	71.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-004
Sample Date/Time: Wednesday, August 24, 2016 19:29:30
Sample Description: 5
Autosampler Position: 327
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-004.048
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	38324.0	2.2	55.70299	1.7	ppb
|	Cu-KED3	65	19463.9	0.5	55.56223	0.7	ppb
|	Zn-KED3	66	8024.6	0.9	126.33502	0.7	ppb
⌊>	Ge-KED3	72	13933.5	0.5			ppb
⌈>	In-KED2	115	14781.9	2.2			ppb
|	Sb-KED2	121	170.7	0.7	0.33556	2.1	ppb
⌊	Sb-KED2	123	146.1	11.5	0.38802	12.2	ppb
⌈>	Lu-KED2	175	57759.3	3.0			ppb
⌊	Pb-KED2	208	623994.7	0.4	107.85250	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-005
Sample Date/Time: Wednesday, August 24, 2016 19:32:29
Sample Description: 5
Autosampler Position: 328
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-005.049
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51880.7	1.5	75.41537	1.2	ppb
|	Cu-KED3	65	26494.9	1.2	75.63921	0.9	ppb
|	Zn-KED3	66	10611.6	0.9	167.09160	0.9	ppb
⌊>	Ge-KED3	72	13934.5	0.4			ppb
⌈>	In-KED2	115	15004.5	2.2			ppb
|	Sb-KED2	121	232.7	2.2	0.49126	4.3	ppb
⌊	Sb-KED2	123	187.0	1.1	0.51469	3.6	ppb
⌈>	Lu-KED2	175	58713.1	2.4			ppb
⌊	Pb-KED2	208	728798.5	1.7	123.89703	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-006
Sample Date/Time: Wednesday, August 24, 2016 19:35:28
Sample Description: 5
Autosampler Position: 329
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-006.050
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	29405.6	1.2	42.95843	0.9	ppb
|	Cu-KED3	65	14882.1	0.9	42.69577	0.6	ppb
|	Zn-KED3	66	5575.1	2.0	88.19339	1.6	ppb
⌊>	Ge-KED3	72	13860.7	0.4			ppb
⌈>	In-KED2	115	14677.0	3.6			ppb
|	Sb-KED2	121	158.7	6.9	0.30646	7.4	ppb
⌊	Sb-KED2	123	126.1	4.0	0.32579	7.8	ppb
⌈>	Lu-KED2	175	57848.1	5.2			ppb
⌊	Pb-KED2	208	330871.8	1.4	57.19315	6.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-010
Sample Date/Time: Wednesday, August 24, 2016 19:38:27
Sample Description: 5
Autosampler Position: 330
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-010.051
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51983.8	3.1	90.56508	2.2	ppb
|	Cu-KED3	65	26918.0	0.7	92.11651	0.6	ppb
|	Zn-KED3	66	7764.8	1.2	146.52507	0.8	ppb
⌊>	Ge-KED3	72	11626.4	1.2			ppb
⌈>	In-KED2	115	13035.0	0.3			ppb
|	Sb-KED2	121	670.0	5.7	1.90100	6.3	ppb
⌊	Sb-KED2	123	528.7	1.4	1.88879	1.7	ppb
⌈>	Lu-KED2	175	53206.2	1.0			ppb
⌊	Pb-KED2	208	1462819.1	1.7	274.36736	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-011
Sample Date/Time: Wednesday, August 24, 2016 19:41:26
Sample Description: 5
Autosampler Position: 331
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-011.052
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45899.0	0.8	66.48188	2.2	ppb
|	Cu-KED3	65	23565.4	2.1	67.03101	2.7	ppb
|	Zn-KED3	66	8274.4	0.4	129.79045	1.4	ppb
⌊>	Ge-KED3	72	13986.8	1.4			ppb
⌈>	In-KED2	115	14860.9	2.0			ppb
|	Sb-KED2	121	292.7	4.1	0.65563	5.0	ppb
⌊	Sb-KED2	123	242.4	6.2	0.70362	9.4	ppb
⌈>	Lu-KED2	175	58682.7	2.6			ppb
⌊	Pb-KED2	208	965939.5	0.8	164.33001	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-012
Sample Date/Time: Wednesday, August 24, 2016 19:44:25
Sample Description: 5
Autosampler Position: 332
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608207-012.053
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25665.0	2.0	37.12008	0.8	ppb
|	Cu-KED3	65	13310.2	1.4	37.82131	3.4	ppb
|	Zn-KED3	66	8906.8	0.2	139.61537	1.9	ppb
⌊>	Ge-KED3	72	13999.2	2.1			ppb
⌈>	In-KED2	115	14424.7	2.7			ppb
|	Sb-KED2	121	186.0	12.2	0.38957	18.6	ppb
⌊	Sb-KED2	123	154.5	7.0	0.42957	11.6	ppb
⌈>	Lu-KED2	175	56911.2	2.5			ppb
⌊	Pb-KED2	208	406149.2	0.3	71.23355	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Rc	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-013
Sample Date/Time: Wednesday, August 24, 2016 19:47:24
Sample Description: 5
Autosampler Position: 333
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-013.054
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	60574.8	0.9	86.47060	0.7	ppb
|	Cu-KED3	65	31329.7	1.3	87.85406	2.8	ppb
|	Zn-KED3	66	9541.5	2.4	147.56608	4.0	ppb
⌊>	Ge-KED3	72	14191.7	1.6			ppb
⌈>	In-KED2	115	14977.8	0.6			ppb
|	Sb-KED2	121	1812.8	3.2	4.63512	2.7	ppb
⌊	Sb-KED2	123	1476.5	1.4	4.72678	1.4	ppb
⌈>	Lu-KED2	175	58036.3	1.4			ppb
⌊	Pb-KED2	208	4205697.3	0.5	723.19926	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-014
Sample Date/Time: Wednesday, August 24, 2016 19:50:23
Sample Description: 5
Autosampler Position: 334
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-014.055
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15787.4	1.0	23.13021	1.2	ppb
|	Cu-KED3	65	8129.6	1.5	23.38826	1.5	ppb
|	Zn-KED3	66	16313.6	0.7	259.22062	1.1	ppb
⌊>	Ge-KED3	72	13812.3	0.4			ppb
⌈>	In-KED2	115	14486.5	1.6			ppb
|	Sb-KED2	121	180.7	6.8	0.37154	6.8	ppb
⌊	Sb-KED2	123	144.1	14.0	0.39149	17.4	ppb
⌈>	Lu-KED2	175	59269.4	1.4			ppb
⌊	Pb-KED2	208	296209.2	1.8	49.87713	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-003
Sample Date/Time: Wednesday, August 24, 2016 19:53:22
Sample Description: 5
Autosampler Position: 335
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-003.056
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27002.8	1.6	38.82126	2.7	ppb
|	Cu-KED3	65	13815.7	0.7	39.00251	1.6	ppb
|	Zn-KED3	66	16568.9	2.6	258.23377	4.0	ppb
⌊>	Ge-KED3	72	14087.3	1.7			ppb
⌈>	In-KED2	115	14691.7	1.9			ppb
|	Sb-KED2	121	162.0	6.9	0.31531	10.8	ppb
⌊	Sb-KED2	123	125.1	0.4	0.32150	2.1	ppb
⌈>	Lu-KED2	175	60334.2	2.1			ppb
⌊	Pb-KED2	208	359687.9	1.4	59.50909	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:56:24
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.057
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18444.6	2.0	25.32049	0.8	ppb
|	Cu-KED3	65	9444.5	2.5	25.45800	1.2	ppb
|	Zn-KED3	66	1657.8	0.5	24.57394	0.9	ppb
⌊>	Ge-KED3	72	14741.9	1.4			ppb
⌈>	In-KED2	115	15037.7	4.3			ppb
|	Sb-KED2	121	9602.6	1.4	24.99732	5.0	ppb
⌊	Sb-KED2	123	7652.5	2.6	24.80874	2.0	ppb
⌈>	Lu-KED2	175	56734.5	3.4			ppb
⌊	Pb-KED2	208	144247.1	0.3	25.38393	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		106			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:59:24
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.058
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18.7	22.3	-0.00714	76.4	ppb
|	Cu-KED3	65	5.0	20.0	-0.02469	10.5	ppb
|	Zn-KED3	66	6.7	37.7	-0.01925	191.5	ppb
⌊>	Ge-KED3	72	14602.8	1.7			ppb
⌈>	In-KED2	115	15143.7	2.6			ppb
|	Sb-KED2	121	36.0	33.3	-0.02408	139.6	ppb
⌊	Sb-KED2	123	36.5	18.0	0.02270	80.4	ppb
⌈>	Lu-KED2	175	57168.2	0.4			ppb
⌊	Pb-KED2	208	19.3	33.3	-0.00070	159.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		108			
⌈>	In-KED2	115		107			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 20:02:24
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.059
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	176.7	13.6	0.21397	11.2	ppb
|	Cu-KED3	65	87.0	11.1	0.20200	17.4	ppb
|	Zn-KED3	66	83.0	4.8	1.14093	0.9	ppb
⌊>	Ge-KED3	72	14459.3	4.0			ppb
⌈>	In-KED2	115	15391.6	3.0			ppb
|	Sb-KED2	121	79.3	11.4	0.08450	27.1	ppb
⌊	Sb-KED2	123	60.7	17.3	0.09793	32.2	ppb
⌈>	Lu-KED2	175	58441.1	3.7			ppb
⌊	Pb-KED2	208	620.0	8.6	0.10211	12.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	107				
|	Cu-KED3	65	101				
|	Zn-KED3	66	114				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	85				
⌊	Sb-KED2	123	98				
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-004
Sample Date/Time: Wednesday, August 24, 2016 20:05:25
Sample Description: 5
Autosampler Position: 336
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-004.060
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22037.7	1.3	31.62240	1.7	ppb
|	Cu-KED3	65	11225.4	0.1	31.63558	2.3	ppb
|	Zn-KED3	66	12915.8	1.2	200.96518	3.6	ppb
⌊>	Ge-KED3	72	14111.3	2.4			ppb
⌈>	In-KED2	115	14529.7	2.0			ppb
|	Sb-KED2	121	144.0	12.3	0.27132	17.9	ppb
⌊	Sb-KED2	123	112.0	7.5	0.28222	11.8	ppb
⌈>	Lu-KED2	175	60734.6	3.7			ppb
⌊	Pb-KED2	208	271221.4	1.2	44.60910	4.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		113			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-005
Sample Date/Time: Wednesday, August 24, 2016 20:08:24
Sample Description: 5
Autosampler Position: 337
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-005.061
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28120.3	1.7	41.47726	1.9	ppb
|	Cu-KED3	65	14617.1	1.7	42.33635	0.6	ppb
|	Zn-KED3	66	14698.2	2.7	234.92288	1.6	ppb
⌊>	Ge-KED3	72	13729.3	1.3			ppb
⌈>	In-KED2	115	14535.9	0.2			ppb
|	Sb-KED2	121	146.0	19.2	0.27649	27.4	ppb
⌊	Sb-KED2	123	118.7	2.4	0.30442	2.9	ppb
⌈>	Lu-KED2	175	60470.0	0.5			ppb
⌊	Pb-KED2	208	367510.0	0.8	60.64011	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-006
Sample Date/Time: Wednesday, August 24, 2016 20:11:23
Sample Description: 5
Autosampler Position: 338
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-006.062
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28889.2	1.3	41.98583	2.0	ppb
|	Cu-KED3	65	14810.0	0.6	42.26546	0.1	ppb
|	Zn-KED3	66	12523.2	0.8	197.21687	0.3	ppb
⌊>	Ge-KED3	72	13934.1	0.7			ppb
⌈>	In-KED2	115	14433.8	1.1			ppb
|	Sb-KED2	121	174.0	13.9	0.35503	17.3	ppb
⌊	Sb-KED2	123	130.1	11.3	0.34582	13.8	ppb
⌈>	Lu-KED2	175	60226.1	2.1			ppb
⌊	Pb-KED2	208	402039.9	2.0	66.63682	3.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-010
Sample Date/Time: Wednesday, August 24, 2016 20:14:22
Sample Description: 5
Autosampler Position: 339
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-010.063
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	37874.8	1.8	56.07131	3.3	ppb
|	Cu-KED3	65	19434.5	2.1	56.50701	3.7	ppb
|	Zn-KED3	66	9580.9	2.9	153.67312	4.5	ppb
⌊>	Ge-KED3	72	13684.9	1.5			ppb
⌈>	In-KED2	115	14485.3	2.2			ppb
|	Sb-KED2	121	359.3	1.2	0.85663	2.9	ppb
⌊	Sb-KED2	123	284.0	2.4	0.86453	4.2	ppb
⌈>	Lu-KED2	175	59261.7	2.5			ppb
⌊	Pb-KED2	208	724585.6	0.8	122.03562	2.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-011
Sample Date/Time: Wednesday, August 24, 2016 20:17:21
Sample Description: 5
Autosampler Position: 340
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-011.064
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	42891.6	0.7	62.19830	3.8	ppb
|	Cu-KED3	65	21731.5	1.8	61.89854	4.7	ppb
|	Zn-KED3	66	8009.6	0.4	125.78249	3.4	ppb
⌊>	Ge-KED3	72	13978.5	3.2			ppb
⌈>	In-KED2	115	14754.2	1.3			ppb
|	Sb-KED2	121	1362.7	5.7	3.51173	7.2	ppb
⌊	Sb-KED2	123	1109.0	4.3	3.58069	3.2	ppb
⌈>	Lu-KED2	175	59109.1	2.6			ppb
⌊	Pb-KED2	208	3743737.7	0.8	632.30711	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-012
Sample Date/Time: Wednesday, August 24, 2016 20:20:20
Sample Description: 5
Autosampler Position: 341
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-012.065
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	39029.2	0.6	56.57766	2.1	ppb
|	Cu-KED3	65	20049.4	0.5	57.08231	2.5	ppb
|	Zn-KED3	66	11922.0	1.0	187.22073	1.1	ppb
⌊>	Ge-KED3	72	13974.8	1.9			ppb
⌈>	In-KED2	115	14848.3	0.5			ppb
|	Sb-KED2	121	327.3	10.9	0.74788	12.7	ppb
⌊	Sb-KED2	123	290.6	2.7	0.86231	2.7	ppb
⌈>	Lu-KED2	175	59678.8	1.8			ppb
⌊	Pb-KED2	208	1609253.3	2.6	269.15347	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-013
Sample Date/Time: Wednesday, August 24, 2016 20:23:19
Sample Description: 5
Autosampler Position: 342
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-013.066
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41082.4	3.1	60.54967	3.8	ppb
|	Cu-KED3	65	21470.5	2.0	62.14446	2.8	ppb
|	Zn-KED3	66	11134.3	1.7	177.78064	2.7	ppb
⌊>	Ge-KED3	72	13746.6	2.2			ppb
⌈>	In-KED2	115	14639.6	1.3			ppb
|	Sb-KED2	121	886.7	7.0	2.26195	8.2	ppb
⌊	Sb-KED2	123	719.3	3.9	2.30886	4.8	ppb
⌈>	Lu-KED2	175	59834.5	3.5			ppb
⌊	Pb-KED2	208	1886579.8	0.5	314.88971	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-014
Sample Date/Time: Wednesday, August 24, 2016 20:26:18
Sample Description: 5
Autosampler Position: 343
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-014.067
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	23983.5	1.4	35.52457	2.0	ppb
|	Cu-KED3	65	12246.2	0.8	35.62116	1.5	ppb
|	Zn-KED3	66	8429.5	1.2	135.27910	1.0	ppb
⌊>	Ge-KED3	72	13669.9	0.8			ppb
⌈>	In-KED2	115	14418.2	3.0			ppb
|	Sb-KED2	121	259.3	4.2	0.58943	8.6	ppb
⌊	Sb-KED2	123	203.0	3.7	0.59381	4.1	ppb
⌈>	Lu-KED2	175	57127.4	2.5			ppb
⌊	Pb-KED2	208	1032441.0	1.5	180.36005	1.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-03
Sample Date/Time: Wednesday, August 24, 2016 20:29:17
Sample Description: 5
Autosampler Position: 344
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\KQ1609920-03.068
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21.3	42.3	0.00115	1349.4	ppb
|	Cu-KED3	65	9.7	26.0	-0.00831	84.9	ppb
|	Zn-KED3	66	23.0	19.0	0.27549	23.9	ppb
⌊>	Ge-KED3	72	12772.4	3.8			ppb
⌈>	In-KED2	115	13975.6	0.5			ppb
|	Sb-KED2	121	16.7	27.7	-0.07116	18.4	ppb
⌊	Sb-KED2	123	13.6	27.3	-0.04731	27.7	ppb
⌈>	Lu-KED2	175	52955.0	1.8			ppb
⌊	Pb-KED2	208	91.3	7.0	0.01315	10.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-002
Sample Date/Time: Wednesday, August 24, 2016 20:32:16
Sample Description: 5
Autosampler Position: 345
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-002.069
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	10917.5	1.1	15.78195	1.9	ppb
	Cu-KED3	65	5704.5	3.0	16.18904	2.6	ppb
	Zn-KED3	66	6203.7	1.0	97.24137	0.8	ppb
>	Ge-KED3	72	13990.8	0.8			ppb
>	In-KED2	115	14444.1	1.7			ppb
	Sb-KED2	121	95.3	6.4	0.14125	12.0	ppb
	Sb-KED2	123	95.2	3.6	0.22719	3.1	ppb
>	Lu-KED2	175	62522.2	1.0			ppb
	Pb-KED2	208	159145.2	2.0	25.39924	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		104			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		116			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 20:35:18
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\CCV.070
User Name: JDB
Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
Cu-KED3	63	17582.1	0.7	25.40409	1.3	ppb
Cu-KED3	65	8912.4	1.0	25.28500	0.4	ppb
Zn-KED3	66	1577.4	4.0	24.60349	3.5	ppb
Ge-KED3	72	14007.9	0.6			ppb
In-KED2	115	14863.5	3.4			ppb
Sb-KED2	121	9443.1	2.1	24.85598	4.3	ppb
Sb-KED2	123	7549.5	1.5	24.75922	2.0	ppb
Lu-KED2	175	58054.4	1.9			ppb
Pb-KED2	208	143593.6	0.9	24.68300	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	102				
	Cu-KED3	65	101				
	Zn-KED3	66	98				
>	Ge-KED3	72		104			
>	In-KED2	115		105			
	Sb-KED2	121	99				
	Sb-KED2	123	99				
>	Lu-KED2	175		108			
	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 20:38:17
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\CCB.071
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13.3	48.2	-0.01323	71.0	ppb
|	Cu-KED3	65	7.0	37.8	-0.01781	43.6	ppb
|	Zn-KED3	66	3.3	34.6	-0.06534	28.9	ppb
⌊>	Ge-KED3	72	13613.5	1.2			ppb
⌈>	In-KED2	115	14564.5	1.9			ppb
|	Sb-KED2	121	35.3	18.2	-0.02280	73.9	ppb
⌊	Sb-KED2	123	28.5	8.6	0.00053	1426.5	ppb
⌈>	Lu-KED2	175	55499.6	1.3			ppb
⌊	Pb-KED2	208	24.0	54.6	0.00025	953.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-003
Sample Date/Time: Wednesday, August 24, 2016 20:41:19
Sample Description: 5
Autosampler Position: 346
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-003.072
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10952.9	0.6	16.16564	1.1	ppb
|	Cu-KED3	65	5696.8	0.9	16.51187	2.4	ppb
|	Zn-KED3	66	5834.9	1.6	93.37659	1.4	ppb
⌊>	Ge-KED3	72	13703.9	1.6			ppb
⌈>	In-KED2	115	14220.8	1.2			ppb
|	Sb-KED2	121	96.0	18.2	0.14675	30.8	ppb
⌊	Sb-KED2	123	70.1	7.2	0.14593	10.1	ppb
⌈>	Lu-KED2	175	60836.0	2.8			ppb
⌊	Pb-KED2	208	140964.1	2.1	23.11988	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		113			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-004
Sample Date/Time: Wednesday, August 24, 2016 20:44:18
Sample Description: 5
Autosampler Position: 347
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-004.073
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14996.5	1.0	22.43444	2.6	ppb
|	Cu-KED3	65	7536.7	2.2	22.13830	3.2	ppb
|	Zn-KED3	66	6798.0	2.7	110.18758	1.2	ppb
⌊>	Ge-KED3	72	13531.1	2.2			ppb
⌈>	In-KED2	115	14495.5	2.1			ppb
|	Sb-KED2	121	126.0	2.7	0.22360	7.3	ppb
⌊	Sb-KED2	123	110.5	4.5	0.27786	3.3	ppb
⌈>	Lu-KED2	175	62222.0	3.9			ppb
⌊	Pb-KED2	208	186870.5	1.0	30.00126	4.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		115			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-005
Sample Date/Time: Wednesday, August 24, 2016 20:47:17
Sample Description: 5
Autosampler Position: 348
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-005.074
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17634.9	1.1	25.88823	2.4	ppb
|	Cu-KED3	65	8815.7	2.5	25.41102	3.1	ppb
|	Zn-KED3	66	7318.2	2.0	116.41571	2.2	ppb
⌊>	Ge-KED3	72	13789.7	1.3			ppb
⌈>	In-KED2	115	14539.9	1.5			ppb
|	Sb-KED2	121	167.3	10.8	0.33403	14.6	ppb
⌊	Sb-KED2	123	150.5	5.1	0.41140	6.9	ppb
⌈>	Lu-KED2	175	61464.0	1.9			ppb
⌊	Pb-KED2	208	276688.9	0.9	44.92145	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		114			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-008
Sample Date/Time: Wednesday, August 24, 2016 20:50:16
Sample Description: 5
Autosampler Position: 349
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-008.075
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15706.0	1.4	27.28306	4.4	ppb
|	Cu-KED3	65	8052.9	2.2	27.47376	5.1	ppb
|	Zn-KED3	66	5998.6	1.1	112.96043	5.4	ppb
⌊>	Ge-KED3	72	11666.1	4.4			ppb
⌈>	In-KED2	115	13013.5	0.6			ppb
|	Sb-KED2	121	157.3	11.5	0.35683	15.3	ppb
⌊	Sb-KED2	123	123.1	3.6	0.36770	3.8	ppb
⌈>	Lu-KED2	175	53534.8	1.8			ppb
⌊	Pb-KED2	208	210663.3	0.9	39.27325	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Re	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-009
Sample Date/Time: Wednesday, August 24, 2016 20:53:15
Sample Description: 5
Autosampler Position: 350
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-009.076
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10018.8	1.9	18.01340	3.7	ppb
|	Cu-KED3	65	5159.6	2.6	18.21780	4.6	ppb
|	Zn-KED3	66	4066.6	1.1	79.22042	1.3	ppb
⌊>	Ge-KED3	72	11256.1	2.2			ppb
⌈>	In-KED2	115	12727.1	1.4			ppb
|	Sb-KED2	121	98.7	15.3	0.18694	27.4	ppb
⌊	Sb-KED2	123	78.9	14.7	0.20842	22.7	ppb
⌈>	Lu-KED2	175	52064.7	1.4			ppb
⌊	Pb-KED2	208	100342.4	1.2	19.22987	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-010
Sample Date/Time: Wednesday, August 24, 2016 20:56:14
Sample Description: 5
Autosampler Position: 351
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-010.077
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13390.9	2.0	24.15003	1.9	ppb
|	Cu-KED3	65	6766.6	1.4	23.96787	2.8	ppb
|	Zn-KED3	66	4751.5	1.3	92.85246	0.9	ppb
⌊>	Ge-KED3	72	11222.1	1.6			ppb
⌈>	In-KED2	115	12795.6	2.7			ppb
|	Sb-KED2	121	92.0	17.8	0.16364	25.9	ppb
⌊	Sb-KED2	123	84.2	10.8	0.22689	15.0	ppb
⌈>	Lu-KED2	175	52303.3	1.7			ppb
⌊	Pb-KED2	208	126288.5	1.5	24.08918	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011
Sample Date/Time: Wednesday, August 24, 2016 20:59:13
Sample Description: 5
Autosampler Position: 352
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011.078
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20235.7	1.6	34.88099	3.2	ppb
|	Cu-KED3	65	10278.0	0.2	34.78832	2.3	ppb
|	Zn-KED3	66	5706.1	2.7	106.50007	0.7	ppb
⌊>	Ge-KED3	72	11750.2	2.1			ppb
⌈>	In-KED2	115	12910.3	3.9			ppb
|	Sb-KED2	121	143.3	8.5	0.31940	16.7	ppb
⌊	Sb-KED2	123	94.0	6.6	0.26097	5.4	ppb
⌈>	Lu-KED2	175	52506.3	2.1			ppb
⌊	Pb-KED2	208	273776.4	1.9	52.04334	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011L
Sample Date/Time: Wednesday, August 24, 2016 21:02:12
Sample Description: 25
Autosampler Position: 353
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011L.079
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	4625.4	3.3	7.25352	4.9	ppb
|	Cu-KED3	65	2352.5	0.7	7.23782	1.6	ppb
|	Zn-KED3	66	1319.4	2.4	22.39973	4.2	ppb
⌊>	Ge-KED3	72	12871.5	2.1			ppb
⌈>	In-KED2	115	14017.8	4.9			ppb
|	Sb-KED2	121	44.7	10.3	0.00764	238.1	ppb
⌊	Sb-KED2	123	40.8	13.1	0.04709	31.1	ppb
⌈>	Lu-KED2	175	55323.3	1.0			ppb
⌊	Pb-KED2	208	60253.4	1.9	10.86424	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011A
Sample Date/Time: Wednesday, August 24, 2016 21:05:11
Sample Description: 5 +50ppb
Autosampler Position: 354
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011A.080
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	47812.6	2.2	83.09534	0.7	ppb
	Cu-KED3	65	24272.3	2.2	82.84558	0.2	ppb
	Zn-KED3	66	8325.8	0.4	156.76991	2.2	ppb
>	Ge-KED3	72	11656.1	2.4			ppb
>	In-KED2	115	12839.9	1.8			ppb
	Sb-KED2	121	17056.2	2.1	52.06843	2.9	ppb
	Sb-KED2	123	13593.7	1.0	51.69293	0.9	ppb
>	Lu-KED2	175	52626.8	0.8			ppb
	Pb-KED2	208	520602.0	1.2	98.70253	0.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		86			
>	In-KED2	115		90			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		98			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011S
Sample Date/Time: Wednesday, August 24, 2016 21:08:09
Sample Description: 5
Autosampler Position: 355
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011S.081
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	74038.0	0.9	129.74716	1.6	ppb
|	Cu-KED3	65	37603.8	1.6	129.45241	3.4	ppb
|	Zn-KED3	66	15784.4	1.9	299.73234	3.5	ppb
⌊>	Ge-KED3	72	11563.0	1.9			ppb
⌈>	In-KED2	115	13059.1	0.7			ppb
|	Sb-KED2	121	25413.3	2.1	76.31279	1.8	ppb
⌊	Sb-KED2	123	20288.1	1.7	75.88828	1.0	ppb
⌈>	Lu-KED2	175	53621.8	1.4			ppb
⌊	Pb-KED2	208	1248958.3	1.2	232.42677	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:11:10
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.082
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16359.4	4.6	25.13434	5.6	ppb
|	Cu-KED3	65	8301.1	3.2	25.03626	3.5	ppb
|	Zn-KED3	66	1491.7	3.4	24.74384	4.4	ppb
⌊>	Ge-KED3	72	13178.1	1.1			ppb
⌈>	In-KED2	115	14280.0	2.1			ppb
|	Sb-KED2	121	9219.0	2.8	25.23587	0.7	ppb
⌊	Sb-KED2	123	7486.1	2.4	25.54514	0.3	ppb
⌈>	Lu-KED2	175	54213.1	3.1			ppb
⌊	Pb-KED2	208	138582.6	0.1	25.51885	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	100				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		101			
|	Sb-KED2	121	101				
⌊	Sb-KED2	123	102				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:14:10
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.083
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8.0	25.0	-0.02045	15.9	ppb
|	Cu-KED3	65	3.3	34.6	-0.02810	12.1	ppb
|	Zn-KED3	66	5.3	10.8	-0.02884	27.5	ppb
⌊>	Ge-KED3	72	12948.9	2.3			ppb
⌈>	In-KED2	115	13874.7	4.0			ppb
|	Sb-KED2	121	33.3	15.1	-0.02320	77.2	ppb
⌊	Sb-KED2	123	27.5	32.7	0.00231	1403.0	ppb
⌈>	Lu-KED2	175	53474.0	4.7			ppb
⌊	Pb-KED2	208	28.0	31.1	0.00117	144.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		96			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 21:17:09
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.084
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	146.0	4.1	0.19755	6.2	ppb
|	Cu-KED3	65	84.3	8.6	0.22348	12.3	ppb
|	Zn-KED3	66	63.3	7.1	0.96577	11.3	ppb
⌊>	Ge-KED3	72	12842.8	3.1			ppb
⌈>	In-KED2	115	13858.2	3.3			ppb
|	Sb-KED2	121	68.7	21.1	0.07616	49.9	ppb
⌊	Sb-KED2	123	53.1	19.0	0.09212	36.9	ppb
⌈>	Lu-KED2	175	54260.6	3.0			ppb
⌊	Pb-KED2	208	586.7	6.4	0.10394	8.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	112				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121	76				
⌊	Sb-KED2	123	92				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	104				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011SD
Sample Date/Time: Wednesday, August 24, 2016 21:20:10
Sample Description: 5
Autosampler Position: 356
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011SD.085
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	73305.7	3.0	126.03621	6.6	ppb
	Cu-KED3	65	37095.1	2.7	125.25607	6.4	ppb
	Zn-KED3	66	15623.2	2.7	290.98186	6.3	ppb
>	Ge-KED3	72	11802.9	3.8			ppb
>	In-KED2	115	12916.9	2.1			ppb
	Sb-KED2	121	25087.3	1.9	76.17710	2.0	ppb
	Sb-KED2	123	19932.9	1.4	75.39295	1.1	ppb
>	Lu-KED2	175	53550.9	3.7			ppb
	Pb-KED2	208	1232067.0	1.4	229.78719	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		87			
>	In-KED2	115		91			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		99			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-04
Sample Date/Time: Wednesday, August 24, 2016 21:23:09
Sample Description: 5
Autosampler Position: 357
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\KQ1609920-04.086
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	64658.7	2.3	103.03853	2.3	ppb
|	Cu-KED3	65	33284.7	1.5	104.17989	2.1	ppb
|	Zn-KED3	66	12337.7	3.1	212.97432	3.0	ppb
⌊>	Ge-KED3	72	12713.3	1.3			ppb
⌈>	In-KED2	115	13789.7	4.3			ppb
|	Sb-KED2	121	73006.8	1.8	208.13180	5.4	ppb
⌊	Sb-KED2	123	58774.5	1.4	208.54090	2.8	ppb
⌈>	Lu-KED2	175	53071.9	4.4			ppb
⌊	Pb-KED2	208	1096580.6	1.0	206.47658	5.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 21:26:10
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.087
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	35.3	34.1	0.02048	86.5	ppb
|	Cu-KED3	65	15.3	26.4	0.00727	159.5	ppb
|	Zn-KED3	66	11.0	31.5	0.06093	89.6	ppb
⌊>	Ge-KED3	72	13368.3	1.7			ppb
⌈>	In-KED2	115	14264.6	0.8			ppb
|	Sb-KED2	121	48.7	35.0	0.01609	293.9	ppb
⌊	Sb-KED2	123	33.6	3.7	0.02016	22.5	ppb
⌈>	Lu-KED2	175	55404.6	1.0			ppb
⌊	Pb-KED2	208	47.3	20.0	0.00446	39.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-012
Sample Date/Time: Wednesday, August 24, 2016 21:29:11
Sample Description: 5
Autosampler Position: 358
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-012.088
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2.7	114.6	-0.02713	23.7	ppb
|	Cu-KED3	65	3.3	34.6	0.03368	234.3	ppb
|	Zn-KED3	66	2.0	86.6	0.38981	182.1	ppb
⌊>	Ge-KED3	72	9538.7	140.5			ppb
⌈>	In-KED2	115	11429.8	82.1			ppb
|	Sb-KED2	121	5.3	86.6	-0.10403	12.9	ppb
⌊	Sb-KED2	123	1.9	6.7	-0.07571	29.7	ppb
⌈>	Lu-KED2	175	44820.0	90.8			ppb
⌊	Pb-KED2	208	23.3	9.9	0.00971	166.8	ppb

QC Calculated Values

	IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈		Cu-KED3	63					
|		Cu-KED3	65					
|		Zn-KED3	66					
⌊>		Ge-KED3	72		71			
⌈>		In-KED2	115		80			
|		Sb-KED2	121					
⌊		Sb-KED2	123					
⌈>		Lu-KED2	175		83			
⌊		Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

No Optics
JB 8/25/16

LABWORKS - Summary Report

Sample ID: KQ1609300-03
Sample Date/Time: Wednesday, August 24, 2016 21:32:10
Sample Description: 5
Autosampler Position: 359
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\KQ1609300-03.089
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.0	57.7	-0.01371	82.2	ppb
|	Cu-KED3	65	6.0	16.7	-0.01941	15.8	ppb
|	Zn-KED3	66	18.0	20.0	0.19370	33.2	ppb
⌊>	Ge-KED3	72	12641.3	0.6			ppb
⌈>	In-KED2	115	13959.7	4.4			ppb
|	Sb-KED2	121	14.0	65.5	-0.07793	35.1	ppb
⌊	Sb-KED2	123	9.1	27.5	-0.06308	15.0	ppb
⌈>	Lu-KED2	175	52173.8	0.9			ppb
⌊	Pb-KED2	208	88.7	15.0	0.01290	20.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-004
Sample Date/Time: Wednesday, August 24, 2016 21:35:09
Sample Description: 5
Autosampler Position: 360
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-004.090
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	24401.5	1.3	36.64391	3.7	ppb
|	Cu-KED3	65	12123.5	1.6	35.74703	3.3	ppb
|	Zn-KED3	66	5918.9	2.8	96.26694	4.2	ppb
⌊>	Ge-KED3	72	13490.4	2.4			ppb
⌈>	In-KED2	115	14130.5	4.8			ppb
|	Sb-KED2	121	126.0	15.1	0.23123	16.8	ppb
⌊	Sb-KED2	123	107.4	10.6	0.27640	11.2	ppb
⌈>	Lu-KED2	175	57524.3	2.9			ppb
⌊	Pb-KED2	208	274638.6	1.1	47.66919	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-005
Sample Date/Time: Wednesday, August 24, 2016 21:38:10
Sample Description: 5
Autosampler Position: 101
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-005.091
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	2.7	43.3	0.08999	138.8	ppb
	Cu-KED3	65	1.0	100.0	0.01567	400.5	ppb
	Zn-KED3	66	0.7	86.6	0.23452	154.1	ppb
>	Ge-KED3	72	657.0	54.4			ppb
>	In-KED2	115	17818.6	107.9			ppb
	Sb-KED2	121	2.7	173.2	-0.11529	4.1	ppb
	Sb-KED2	123	2.5	61.3	-0.03417	267.9	ppb
>	Lu-KED2	175	69678.4	109.3			ppb
	Pb-KED2	208	21.3	48.1	0.01343	185.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		5			
>	In-KED2	115		125			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		129			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ge-KED3 72 Int Std for samp	Ge-KED3	72	IS out of control
In-KED2 115 Int Std for samp	In-KED2	115	IS out of control
Lu-KED2 175 Int Std for sam	Lu-KED2	175	IS out of control

No Uptake
JB 8/25/16

LABWORKS - Summary Report

Sample ID: K1608209-006
Sample Date/Time: Wednesday, August 24, 2016 21:41:08
Sample Description: 5
Autosampler Position: 102
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\K1608209-006.092
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	40022.0	0.2	59.87426	3.1	ppb
|	Cu-KED3	65	20678.6	0.3	60.75094	2.7	ppb
|	Zn-KED3	66	8065.3	3.2	130.61607	1.8	ppb
⌊>	Ge-KED3	72	13546.4	2.9			ppb
⌈>	In-KED2	115	14444.0	1.7			ppb
|	Sb-KED2	121	186.0	7.5	0.38745	7.7	ppb
⌊	Sb-KED2	123	145.8	6.6	0.39852	7.1	ppb
⌈>	Lu-KED2	175	57849.9	0.9			ppb
⌊	Pb-KED2	208	463770.4	1.4	79.98763	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-007
Sample Date/Time: Wednesday, August 24, 2016 21:44:08
Sample Description: 5
Autosampler Position: 103
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-007.093
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21559.6	1.2	33.38692	4.8	ppb
|	Cu-KED3	65	10889.8	0.6	33.11217	4.2	ppb
|	Zn-KED3	66	5859.9	1.1	98.26881	3.6	ppb
⌊>	Ge-KED3	72	13088.0	3.6			ppb
⌈>	In-KED2	115	14291.9	0.8			ppb
|	Sb-KED2	121	184.7	7.2	0.38969	10.4	ppb
⌊	Sb-KED2	123	137.6	3.7	0.37591	3.6	ppb
⌈>	Lu-KED2	175	57523.9	1.1			ppb
⌊	Pb-KED2	208	382742.3	1.1	66.39706	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010
Sample Date/Time: Wednesday, August 24, 2016 21:47:07
Sample Description: 5
Autosampler Position: 104
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010.094
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	34224.3	1.0	51.34678	3.3	ppb
|	Cu-KED3	65	17471.0	1.4	51.47995	3.7	ppb
|	Zn-KED3	66	9266.0	1.2	150.60112	3.4	ppb
⌊>	Ge-KED3	72	13505.7	2.4			ppb
⌈>	In-KED2	115	14373.1	2.6			ppb
|	Sb-KED2	121	614.0	0.3	1.56057	2.7	ppb
⌊	Sb-KED2	123	467.3	1.1	1.49624	4.0	ppb
⌈>	Lu-KED2	175	57873.1	3.2			ppb
⌊	Pb-KED2	208	894314.8	0.6	154.30637	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:50:07
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.095
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	4.0	50.0	2.17826	129.6	ppb
	Cu-KED3	65	1.7	69.3	2.76009	162.1	ppb
	Zn-KED3	66	1.3	43.3	6.27034	118.3	ppb
>	Ge-KED3	72	313.3	141.3			ppb
>	In-KED2	115	11516.3	157.1			ppb
	Sb-KED2	121	6.7	75.5	0.22788	241.9	ppb
	Sb-KED2	123	1.2	111.5	0.00580	3052.3	ppb
>	Lu-KED2	175	43454.3	159.4			ppb
	Pb-KED2	208	178.0	69.1	1.09193	166.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	9				
	Cu-KED3	65	11				
	Zn-KED3	66	25				
>	Ge-KED3	72		2			
>	In-KED2	115		81			
	Sb-KED2	121	1				
	Sb-KED2	123	0				
>	Lu-KED2	175		81			
	Pb-KED2	208	4				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Cu-KED3	63	Out of Control
QC Std 2	Cu-KED3	65	Out of Control
QC Std 2	Zn-KED3	66	Out of Control
Ge-KED3 72 Int Std for QC S	Ge-KED3	72	IS out of control
QC Std 2	Sb-KED2	121	Out of Control
QC Std 2	Sb-KED2	123	Out of Control
QC Std 2	Pb-KED2	208	Out of Control

JB 8/25/16

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:52:26
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.096
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17434.6	1.2	25.69015	1.7	ppb
|	Cu-KED3	65	8929.5	2.3	25.84217	3.5	ppb
|	Zn-KED3	66	1585.4	2.6	25.23393	4.3	ppb
⌊>	Ge-KED3	72	13738.6	2.5			ppb
⌈>	In-KED2	115	14619.4	1.5			ppb
|	Sb-KED2	121	9296.4	1.3	24.86494	2.9	ppb
⌊	Sb-KED2	123	7586.5	0.4	25.29192	1.9	ppb
⌈>	Lu-KED2	175	55333.6	1.6			ppb
⌊	Pb-KED2	208	140636.2	1.5	25.36455	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	103				
|	Cu-KED3	65	103				
|	Zn-KED3	66	101				
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	101				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:55:25
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.097
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.7	59.8	-0.01461	75.9	ppb
|	Cu-KED3	65	8.0	45.1	-0.01544	69.3	ppb
|	Zn-KED3	66	4.0	66.1	-0.05657	72.8	ppb
⌊>	Ge-KED3	72	13991.5	1.7			ppb
⌈>	In-KED2	115	14684.0	3.8			ppb
|	Sb-KED2	121	32.0	32.5	-0.03162	100.5	ppb
⌊	Sb-KED2	123	26.9	13.5	-0.00516	263.6	ppb
⌈>	Lu-KED2	175	54281.9	1.5			ppb
⌊	Pb-KED2	208	20.0	72.1	-0.00037	723.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010L
Sample Date/Time: Wednesday, August 24, 2016 21:58:26
Sample Description: 25
Autosampler Position: 105
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010L.098
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	7431.9	1.6	10.71723	1.2	ppb
|	Cu-KED3	65	3800.5	1.2	10.76040	2.1	ppb
|	Zn-KED3	66	1977.1	2.1	30.87051	2.4	ppb
⌊>	Ge-KED3	72	14009.9	1.3			ppb
⌈>	In-KED2	115	14686.4	4.3			ppb
|	Sb-KED2	121	140.7	9.1	0.25887	15.9	ppb
⌊	Sb-KED2	123	110.1	10.2	0.27125	8.9	ppb
⌈>	Lu-KED2	175	57331.8	1.2			ppb
⌊	Pb-KED2	208	185067.4	0.5	32.20948	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010A
Sample Date/Time: Wednesday, August 24, 2016 22:01:25
Sample Description: 5 +50ppb
Autosampler Position: 106
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010A.099
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66729.5	2.2	101.04332	3.3	ppb
|	Cu-KED3	65	34415.7	1.0	102.33909	2.0	ppb
|	Zn-KED3	66	12348.7	0.1	202.51591	1.3	ppb
⌊>	Ge-KED3	72	13381.9	1.1			ppb
⌈>	In-KED2	115	14604.4	2.0			ppb
|	Sb-KED2	121	19087.4	2.1	51.24225	4.1	ppb
⌊	Sb-KED2	123	15166.3	1.2	50.70398	0.8	ppb
⌈>	Lu-KED2	175	58205.0	0.9			ppb
⌊	Pb-KED2	208	1172297.0	1.0	200.97738	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010S
Sample Date/Time: Wednesday, August 24, 2016 22:04:24
Sample Description: 5
Autosampler Position: 107
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010S.100
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	94074.7	0.7	142.71648	5.2	ppb
|	Cu-KED3	65	47708.5	0.2	142.12412	4.6	ppb
|	Zn-KED3	66	21210.7	1.5	348.73457	6.3	ppb
⌊>	Ge-KED3	72	13376.3	4.7			ppb
⌈>	In-KED2	115	14155.9	1.8			ppb
|	Sb-KED2	121	31282.9	1.5	86.69917	2.5	ppb
⌊	Sb-KED2	123	24888.6	1.3	85.91204	1.6	ppb
⌈>	Lu-KED2	175	58140.4	2.2			ppb
⌊	Pb-KED2	208	2325902.8	1.1	399.32489	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010SD
Sample Date/Time: Wednesday, August 24, 2016 22:07:23
Sample Description: 5
Autosampler Position: 108
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010SD.101
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	101265.1	1.9	153.30457	1.8	ppb
|	Cu-KED3	65	51568.9	1.2	153.32723	0.7	ppb
|	Zn-KED3	66	22098.7	0.7	362.45404	0.9	ppb
⌊>	Ge-KED3	72	13382.9	0.5			ppb
⌈>	In-KED2	115	14326.2	2.0			ppb
|	Sb-KED2	121	31200.0	2.2	85.42489	1.8	ppb
⌊	Sb-KED2	123	24372.5	1.7	83.12212	1.2	ppb
⌈>	Lu-KED2	175	58897.9	2.9			ppb
⌊	Pb-KED2	208	2507746.4	1.3	425.13980	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609300-04
Sample Date/Time: Wednesday, August 24, 2016 22:10:22
Sample Description: 5
Autosampler Position: 109
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609300-04.102
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66065.1	0.7	97.09979	1.8	ppb
|	Cu-KED3	65	34004.4	0.2	98.16021	2.0	ppb
|	Zn-KED3	66	12327.0	0.7	196.26377	2.2	ppb
⌊>	Ge-KED3	72	13786.0	1.8			ppb
⌈>	In-KED2	115	14599.9	1.9			ppb
|	Sb-KED2	121	73240.0	2.7	196.97831	3.8	ppb
⌊	Sb-KED2	123	58642.8	1.8	196.36797	0.2	ppb
⌈>	Lu-KED2	175	57041.3	1.7			ppb
⌊	Pb-KED2	208	1071343.6	0.5	187.43690	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 22:13:24
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.103
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	42.0	8.2	0.02633	14.9	ppb
|	Cu-KED3	65	17.3	12.0	0.00982	58.4	ppb
|	Zn-KED3	66	13.0	20.4	0.08007	52.0	ppb
⌊>	Ge-KED3	72	14335.9	1.6			ppb
⌈>	In-KED2	115	14624.3	2.0			ppb
|	Sb-KED2	121	45.3	13.5	0.00380	444.0	ppb
⌊	Sb-KED2	123	39.5	12.8	0.03688	43.0	ppb
⌈>	Lu-KED2	175	55989.2	1.0			ppb
⌊	Pb-KED2	208	60.0	23.3	0.00664	38.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		106			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		104			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-011
Sample Date/Time: Wednesday, August 24, 2016 22:16:25
Sample Description: 5
Autosampler Position: 110
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-011.104
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26369.0	2.7	39.38632	2.8	ppb
|	Cu-KED3	65	13380.6	1.2	39.24630	0.5	ppb
|	Zn-KED3	66	8243.4	2.4	133.38592	1.7	ppb
⌊>	Ge-KED3	72	13556.4	0.7			ppb
⌈>	In-KED2	115	13275.7	5.6			ppb
|	Sb-KED2	121	987.4	5.0	2.80828	6.9	ppb
⌊	Sb-KED2	123	787.4	1.4	2.81075	4.5	ppb
⌈>	Lu-KED2	175	54200.3	7.1			ppb
⌊	Pb-KED2	208	2369560.4	1.0	437.73514	7.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		93			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-012
Sample Date/Time: Wednesday, August 24, 2016 22:19:24
Sample Description: 5
Autosampler Position: 111
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-012.105
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	19949.3	1.1	29.82367	2.1	ppb
|	Cu-KED3	65	10223.7	0.8	30.01191	1.3	ppb
|	Zn-KED3	66	9508.8	1.1	154.08014	2.3	ppb
⌊>	Ge-KED3	72	13543.1	1.7			ppb
⌈>	In-KED2	115	14321.0	3.9			ppb
|	Sb-KED2	121	254.0	0.8	0.57928	4.5	ppb
⌊	Sb-KED2	123	203.0	4.3	0.59956	8.8	ppb
⌈>	Lu-KED2	175	58192.6	1.8			ppb
⌊	Pb-KED2	208	511287.3	0.3	87.68303	1.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-013
Sample Date/Time: Wednesday, August 24, 2016 22:22:23
Sample Description: 5
Autosampler Position: 112
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-013.106
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25719.8	0.7	38.97129	1.0	ppb
|	Cu-KED3	65	13219.4	2.0	39.33485	1.9	ppb
|	Zn-KED3	66	7966.9	1.3	130.78042	0.7	ppb
⌊>	Ge-KED3	72	13363.2	0.6			ppb
⌈>	In-KED2	115	14385.3	2.6			ppb
|	Sb-KED2	121	234.7	4.7	0.52349	8.8	ppb
⌊	Sb-KED2	123	206.8	4.7	0.60844	5.7	ppb
⌈>	Lu-KED2	175	56610.7	2.7			ppb
⌊	Pb-KED2	208	605984.9	0.9	106.87018	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-014
Sample Date/Time: Wednesday, August 24, 2016 22:25:22
Sample Description: 5
Autosampler Position: 113
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-014.107
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43728.8	0.6	64.23268	1.0	ppb
|	Cu-KED3	65	21905.5	2.5	63.18455	1.9	ppb
|	Zn-KED3	66	10208.3	2.2	162.42701	2.1	ppb
⌊>	Ge-KED3	72	13790.0	1.2			ppb
⌈>	In-KED2	115	14499.4	2.2			ppb
|	Sb-KED2	121	1024.7	2.1	2.65946	4.5	ppb
⌊	Sb-KED2	123	775.6	2.5	2.52278	4.5	ppb
⌈>	Lu-KED2	175	58350.7	3.6			ppb
⌊	Pb-KED2	208	2605137.0	2.1	445.90559	4.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 22:28:23
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.108
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17853.8	2.9	25.01894	2.3	ppb
|	Cu-KED3	65	9449.1	4.7	26.00028	4.0	ppb
|	Zn-KED3	66	1644.8	2.8	24.88640	2.1	ppb
⌊>	Ge-KED3	72	14441.3	1.0			ppb
⌈>	In-KED2	115	15224.3	0.6			ppb
|	Sb-KED2	121	9724.0	1.5	24.97010	2.0	ppb
⌊	Sb-KED2	123	7762.8	2.1	24.84463	1.9	ppb
⌈>	Lu-KED2	175	56381.8	2.5			ppb
⌊	Pb-KED2	208	144512.0	1.1	25.57704	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	104				
|	Zn-KED3	66	100				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		107			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 22:31:22
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\CCB.109
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11.3	62.0	-0.01692	58.3	ppb
|	Cu-KED3	65	5.3	21.7	-0.02338	12.8	ppb
|	Zn-KED3	66	5.7	44.4	-0.03194	118.8	ppb
⌊>	Ge-KED3	72	14200.1	2.0			ppb
⌈>	In-KED2	115	15084.0	0.8			ppb
|	Sb-KED2	121	43.3	18.7	-0.00507	435.3	ppb
⌊	Sb-KED2	123	29.7	10.1	0.00141	636.8	ppb
⌈>	Lu-KED2	175	56491.5	0.8			ppb
⌊	Pb-KED2	208	32.0	21.7	0.00158	75.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 22:34:22
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.110
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	156.7	12.8	0.19053	14.8	ppb
|	Cu-KED3	65	80.0	10.2	0.18585	11.8	ppb
|	Zn-KED3	66	70.7	2.9	0.97341	3.4	ppb
⌊>	Ge-KED3	72	14201.7	0.5			ppb
⌈>	In-KED2	115	15178.7	1.8			ppb
|	Sb-KED2	121	70.0	21.6	0.06360	66.5	ppb
⌊	Sb-KED2	123	54.5	13.9	0.08102	33.0	ppb
⌈>	Lu-KED2	175	56225.1	0.9			ppb
⌊	Pb-KED2	208	621.3	4.4	0.10618	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	95				
|	Cu-KED3	65	93				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		107			
|	Sb-KED2	121	64				
⌊	Sb-KED2	123	81				
⌈>	Lu-KED2	175		104			
⌊	Pb-KED2	208	106				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

Service Request #	K1608209		
Calibration	082516AMS04		
QC in calibration	082516AMS04		
QC Service Request #	K1608209		
STARLIMS run #	511623		
CAL STD	MS20-83-K	ICSA STD	MS20-83-H
ICV STD	MS20-72-E	ICSAB STD	MS20-83-I
LLICV STD	MS20-72-F		
Internal STD	MS20-58-A		

6020 DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD limit?	X		
12. Spikes within DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?		X	
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?	X		
21. Cd Correction Applied?		X	
22. Was run prematurely stopped, If so why?		X	

Comments: LRSTD : 1000ppb
#5 Rerun

Primary Review by JDB Date 8/25/16
Secondary Review by [signature] Date 8/25/16

Data Review Form

Service Request #: **K1608209**
Instrument ID#: **K-ICP-MS-04**
DataFile Name: **R:\ICP\WIP\DATA\K-ICP-MS-04 (NexION)\082516a.txt**
RUNNO: **511623**

There are no issues to report.

Primary Approver: JDB 8/25/16
Secondary Approver: 8/25/16

Dataset Report

User Name: ALKLS.ALKLSXP373
Computer Name: ALKLSXP373
Dataset File Path: C:\NexIONData\DataSet\082516A\
Report Date/Time: Thursday, August 25, 2016 13:43:35

The Dataset

Sample ID	Date and Time	Read Type	Description	Batch ID	Samp. File Name
RINSE	12:44:08 Thu 25-Aug-16	Sample			C:\NexIONData\DataSet\082516A\RINSE.001
Blank	12:47:03 Thu 25-Aug-16	Blank			C:\NexIONData\DataSet\082516A\Blank.002
Standard 1	12:49:57 Thu 25-Aug-16	Standard #1			C:\NexIONData\DataSet\082516A\Standard 1
ICV	12:52:51 Thu 25-Aug-16	QC Std #1			C:\NexIONData\DataSet\082516A\ICV.004
CCV	12:55:46 Thu 25-Aug-16	QC Std #2			C:\NexIONData\DataSet\082516A\CCV.005
ICB	12:58:40 Thu 25-Aug-16	QC Std #3			C:\NexIONData\DataSet\082516A\ICB.006
CCB	13:01:35 Thu 25-Aug-16	QC Std #4			C:\NexIONData\DataSet\082516A\CCB.007
LLICVS	13:04:30 Thu 25-Aug-16	QC Std #5			C:\NexIONData\DataSet\082516A\LLICVS.00
ICSA	13:07:24 Thu 25-Aug-16	QC Std #7			C:\NexIONData\DataSet\082516A\ICSA.009
ICSAB	13:10:18 Thu 25-Aug-16	QC Std #8			C:\NexIONData\DataSet\082516A\ICSAB.010
1000ppb LR	13:13:15 Thu 25-Aug-16	Sample			C:\NexIONData\DataSet\082516A\1000ppb LI
RINSE	13:16:12 Thu 25-Aug-16	Sample			C:\NexIONData\DataSet\082516A\RINSE.012
K1608209-005	13:19:08 Thu 25-Aug-16	Sample	5		C:\NexIONData\DataSet\082516A\K1608209-
K1608344-012	13:22:02 Thu 25-Aug-16	Sample	5		C:\NexIONData\DataSet\082516A\K1608344-
K1608325-011	13:24:56 Thu 25-Aug-16	Sample	500		C:\NexIONData\DataSet\082516A\K1608325-
CCV	13:27:52 Thu 25-Aug-16	QC Std #2			C:\NexIONData\DataSet\082516A\CCV.016
CCB	13:30:46 Thu 25-Aug-16	QC Std #4			C:\NexIONData\DataSet\082516A\CCB.017
LLCCVS	13:33:41 Thu 25-Aug-16	QC Std #6			C:\NexIONData\DataSet\082516A\LLCCVS.0
LLCCVS	13:41:59 Thu 25-Aug-16	Sample			C:\NexIONData\DataSet\082516A\LLCCVS.0

SmartTune Wizard - Details

ptimization Details

martTune file: C:\NexIONData\Wizard\SmartTune\CAS SmartTune Full FAST.swz

ptimization Status

tart Time: 8/25/2016 10:58:19 AM

lass Calibration and Resolution
Optimization Settings:
Method: C:\NexIONData\Method\CAS Tuning.mth.
MassCal File: C:\NexIONData\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.1 for Mass Cal. and 0.1 for Resolution
Peak height (%) for Res. Opt.: 5

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.677)
Target/Obtained mass (9.0122/9.025), Target/Obtained resolution (0.7/0.689)
Target/Obtained mass (23.985/23.925), Target/Obtained resolution (0.7/0.707)
Target/Obtained mass (58.9332/58.925), Target/Obtained resolution (0.7/0.691)
Target/Obtained mass (114.904/114.875), Target/Obtained resolution (0.7/0.685)
Target/Obtained mass (139.905/139.875), Target/Obtained resolution (0.7/0.701)
Target/Obtained mass (207.977/207.975), Target/Obtained resolution (0.7/0.698)
Target/Obtained mass (208.98/208.975), Target/Obtained resolution (0.7/0.698)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.701)
Passed] Optimum value(s): N/A

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Thursday, August 25, 2016 11:03:31
Sample Description:
Method File: C:\NexION Data\Method\CAS Daily Performance.mth
Dataset File: C:\NexION Data\Dataset\Default\Daily Performance Check.3544
MassCal File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Li	7.0	27296.9	27296.861	477.588	1.7	Standard
	Be	9.0	9170.0	9170.009	152.620	1.7	Standard
	Mg	24.0	25953.4	25953.429	555.106	2.1	Standard
	Co	58.9	31274.6	31274.605	553.279	1.8	Standard
	In	114.9	61780.9	61780.927	929.471	1.5	Standard
	Pb	208.0	50145.9	50145.864	513.436	1.0	Standard
	Bi	209.0	42124.3	42124.286	436.070	1.0	Standard
	U	238.1	42056.6	42056.631	748.561	1.8	Standard
⌈	CeO	155.9	713.9	0.014	0.001	4.9	Standard
| >	Ce	139.9	49392.8	49392.845	385.582	0.8	Standard
⌊	Ce++	70.0	981.1	0.020	0.001	4.7	Standard
	Bkgd	220.0	0.1	0.133	0.298	223.6	Standard

Replicates

Repeat 1

Analyte	Mass	Meas. Intensity
Li	7	26915.999
Be	9	9115.574
Mg	24	26890.618
Co	59	31453.254
In	115	63234.977
Pb	208	50246.775
Bi	209	41704.118
U	238	42582.704
CeO	156	685.350
Ce	140	49927.762
Ce++	70	945.365
Bkgd	220	0.000

Repeat 2

Analyte	Mass	Meas. Intensity
Li	7	26702.265
Be	9	9106.902
Mg	24	25536.136
Co	59	30343.525
In	115	60872.750
Pb	208	49398.825
Bi	209	41810.428
U	238	40748.700
CeO	156	685.350
Ce	140	48993.201
Ce++	70	954.032
Bkgd	220	0.667

Repeat 3

Analyte	Mass	Meas. Intensity
Li	7	27620.676
Be	9	9348.391
Mg	24	26017.003
Co	59	31235.444
In	115	61771.931

Pb	208	49979.804
Bi	209	42602.764
U	238	42134.712
CeO	156	698.684
Ce	140	49064.111
Ce++	70	1050.039
Bkgd	220	0.000

Repeat 4

Analyte	Mass	Meas. Intensity
Li	7	27842.439
Be	9	9301.694
Mg	24	25715.791
Co	59	31596.904
In	115	61944.007
Pb	208	50298.171
Bi	209	42586.716
U	238	42398.825
CeO	156	730.685
Ce	140	49384.545
Ce++	70	968.700
Bkgd	220	0.000

Repeat 5

Analyte	Mass	Meas. Intensity
Li	7	27402.924
Be	9	8977.487
Mg	24	25607.597
Co	59	31743.896
In	115	61080.969
Pb	208	50805.744
Bi	209	41917.407
U	238	42418.216
CeO	156	769.354
Ce	140	49594.604
Ce++	70	987.367
Bkgd	220	0.000

Current Conditions File Data

Current Value	Description
0.86	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
16.00	Plasma Gas Flow
-9.50	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-14.50	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.86	DRC Mode NEB
-6.50	DRC Mode QRO
-1.50	DRC Mode CRO
-10.00	DRC Mode Cell Entrance/Exit Voltage
3.50	Cell Gas A
0.00	Cell Gas B
280.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-40.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

LABWORKS - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, August 25, 2016 12:47:03
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\Blank.002
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	8.0	25.0			ppb
	Cu-KED3	65	3.7	31.5			ppb
	Zn-KED3	66	3.0	66.7			ppb
>	Ge-KED3	72	14187.7	1.0			ppb
>	In-KED2	115	13963.1	0.7			ppb
	Sb-KED2	121	25.3	4.6			ppb
	Sb-KED2	123	26.6	11.0			ppb
>	Lu-KED2	175	50909.6	1.3			ppb
	Pb-KED2	208	17.3	17.6			ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72					
>	In-KED2	115					
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175					
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, August 25, 2016 12:49:57
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\Standard 1.003
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16767.8	3.0	25.00000	4.7	ppb
|	Cu-KED3	65	8571.2	1.8	25.00000	3.5	ppb
|	Zn-KED3	66	1613.4	2.1	25.00000	3.8	ppb
⌊>	Ge-KED3	72	14656.8	1.7			ppb
⌈>	In-KED2	115	13640.6	3.2			ppb
|	Sb-KED2	121	9050.2	2.7	25.00000	5.7	ppb
⌊	Sb-KED2	123	7245.9	1.3	25.00000	3.5	ppb
⌈>	Lu-KED2	175	50878.6	4.8			ppb
⌊	Pb-KED2	208	128981.1	0.8	25.00000	5.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICV
Sample Date/Time: Thursday, August 25, 2016 12:52:51
Sample Description:
Autosampler Position: 3
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICV.004
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8409.1	2.3	12.69050	4.0	ppb
|	Cu-KED3	65	4539.4	2.1	13.40385	3.6	ppb
|	Zn-KED3	66	1647.8	4.1	25.86254	5.5	ppb
⌊>	Ge-KED3	72	14472.3	1.7			ppb
⌈>	In-KED2	115	14020.1	2.1			ppb
|	Sb-KED2	121	9804.7	2.9	26.34065	5.0	ppb
⌊	Sb-KED2	123	7803.8	1.1	26.18793	1.9	ppb
⌈>	Lu-KED2	175	50694.9	3.2			ppb
⌊	Pb-KED2	208	131979.8	1.0	25.64291	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	102				
|	Cu-KED3	65	107				
|	Zn-KED3	66	103				
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		100			
|	Sb-KED2	121	105				
⌊	Sb-KED2	123	105				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	103				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Thursday, August 25, 2016 12:55:46
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082516A\CCV.005
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16238.6	0.9	24.80336	1.0	ppb
|	Cu-KED3	65	8625.3	1.3	25.78088	2.4	ppb
|	Zn-KED3	66	1556.1	4.6	24.70008	4.2	ppb
⌊>	Ge-KED3	72	14300.8	1.9			ppb
⌈>	In-KED2	115	13990.3	1.7			ppb
|	Sb-KED2	121	9086.2	0.4	24.44458	1.4	ppb
⌊	Sb-KED2	123	7171.4	1.8	24.11198	3.2	ppb
⌈>	Lu-KED2	175	51543.8	1.1			ppb
⌊	Pb-KED2	208	129058.6	1.4	24.64944	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	103				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		100			
|	Sb-KED2	121	98				
⌊	Sb-KED2	123	96				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICB
Sample Date/Time: Thursday, August 25, 2016 12:58:40
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICB.006
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14.0	51.5	0.00912	122.4	ppb
|	Cu-KED3	65	6.7	37.7	0.00886	83.7	ppb
|	Zn-KED3	66	5.3	28.6	0.03673	65.8	ppb
⌊>	Ge-KED3	72	14295.1	0.6			ppb
⌈>	In-KED2	115	14218.1	1.5			ppb
|	Sb-KED2	121	56.7	4.1	0.08191	5.7	ppb
⌊	Sb-KED2	123	45.1	16.6	0.06016	44.5	ppb
⌈>	Lu-KED2	175	50760.7	1.8			ppb
⌊	Pb-KED2	208	20.0	26.5	0.00054	200.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Thursday, August 25, 2016 13:01:35
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCB.007
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	14.7	20.8	0.01025	45.8	ppb
	Cu-KED3	65	9.0	19.2	0.01607	33.4	ppb
	Zn-KED3	66	6.3	18.2	0.05343	35.7	ppb
>	Ge-KED3	72	14199.7	0.9			ppb
>	In-KED2	115	14208.0	0.7			ppb
	Sb-KED2	121	37.3	35.7	0.03084	116.2	ppb
	Sb-KED2	123	34.3	8.9	0.02421	42.4	ppb
>	Lu-KED2	175	50712.2	1.1			ppb
	Pb-KED2	208	16.0	25.0	-0.00024	323.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		100			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		100			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLICVS
Sample Date/Time: Thursday, August 25, 2016 13:04:30
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\LLICVS.008
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	140.7	5.0	0.19599	4.0	ppb
	Cu-KED3	65	72.3	20.7	0.19860	22.0	ppb
	Zn-KED3	66	67.7	7.4	0.99605	9.1	ppb
>	Ge-KED3	72	14752.6	2.0			ppb
>	In-KED2	115	13811.2	0.6			ppb
	Sb-KED2	121	73.3	23.5	0.13211	36.6	ppb
	Sb-KED2	123	51.9	10.2	0.08750	21.8	ppb
>	Lu-KED2	175	50871.8	1.4			ppb
	Pb-KED2	208	540.7	7.2	0.10124	6.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	98				
	Cu-KED3	65	99				
	Zn-KED3	66	100				
>	Ge-KED3	72		104			
>	In-KED2	115		99			
	Sb-KED2	121	132				
	Sb-KED2	123	88				
>	Lu-KED2	175		100			
	Pb-KED2	208	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: ICSA
Sample Date/Time: Thursday, August 25, 2016 13:07:24
Sample Description:
Autosampler Position: 5
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICSA.009
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	346.7	7.7	0.61664	7.9	ppb
|	Cu-KED3	65	171.3	18.5	0.59701	18.7	ppb
|	Zn-KED3	66	19.0	5.3	0.31068	5.9	ppb
⌊>	Ge-KED3	72	12044.4	0.2			ppb
⌈>	In-KED2	115	12265.8	2.8			ppb
|	Sb-KED2	121	44.0	20.8	0.06706	42.7	ppb
⌊	Sb-KED2	123	31.4	18.5	0.03139	78.2	ppb
⌈>	Lu-KED2	175	47935.3	1.0			ppb
⌊	Pb-KED2	208	360.0	2.9	0.07059	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICSAB
Sample Date/Time: Thursday, August 25, 2016 13:10:18
Sample Description:
Autosampler Position: 6
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082516A\ICSAB.010
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25497.4	1.8	47.48137	2.9	ppb
|	Cu-KED3	65	13396.3	2.3	48.81361	3.6	ppb
|	Zn-KED3	66	1188.4	1.6	22.98677	0.8	ppb
⌊>	Ge-KED3	72	11734.2	1.5			ppb
⌈>	In-KED2	115	12302.9	1.1			ppb
|	Sb-KED2	121	40.0	34.6	0.05399	76.4	ppb
⌊	Sb-KED2	123	37.7	7.8	0.05474	17.9	ppb
⌈>	Lu-KED2	175	48074.4	2.2			ppb
⌊	Pb-KED2	208	356.0	5.9	0.06954	5.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	95				
|	Cu-KED3	65	98				
|	Zn-KED3	66	92				
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: 1000ppb LR
Sample Date/Time: Thursday, August 25, 2016 13:13:15
Sample Description:
Autosampler Position: 324
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082516A\1000ppb LR.011
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	611090.7	1.9	984.44012	1.2	ppb
|	Cu-KED3	65	318018.7	1.1	1002.44823	1.6	ppb
|	Zn-KED3	66	58465.1	0.9	980.45282	1.9	ppb
⌊>	Ge-KED3	72	13565.8	2.4			ppb
⌈>	In-KED2	115	13699.0	1.2			ppb
|	Sb-KED2	121	360909.7	0.9	994.17693	0.3	ppb
⌊	Sb-KED2	123	287469.4	1.4	990.53489	2.3	ppb
⌈>	Lu-KED2	175	50572.7	1.4			ppb
⌊	Pb-KED2	208	5103658.0	1.7	993.59529	0.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		96			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: RINSE
Sample Date/Time: Thursday, August 25, 2016 13:16:12
Sample Description:
Autosampler Position: 323
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\RINSE.012
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	35.3	17.3	0.04536	19.8	ppb
	Cu-KED3	65	14.3	42.6	0.03512	59.2	ppb
	Zn-KED3	66	6.0	50.0	0.05340	92.5	ppb
>	Ge-KED3	72	13361.2	2.3			ppb
>	In-KED2	115	13619.9	2.4			ppb
	Sb-KED2	121	239.3	8.1	0.59533	10.5	ppb
	Sb-KED2	123	163.2	3.1	0.47632	6.2	ppb
>	Lu-KED2	175	50782.4	1.1			ppb
	Pb-KED2	208	82.0	59.1	0.01250	74.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		94			
>	In-KED2	115		98			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		100			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-005
Sample Date/Time: Thursday, August 25, 2016 13:19:08
Sample Description: 5
Autosampler Position: 301
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\K1608209-005.013
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	23607.5	1.0	38.07715	0.3	ppb
|	Cu-KED3	65	12660.9	1.2	39.95546	0.8	ppb
|	Zn-KED3	66	5695.8	2.0	95.60829	1.9	ppb
⌊>	Ge-KED3	72	13543.4	0.9			ppb
⌈>	In-KED2	115	13468.5	1.3			ppb
|	Sb-KED2	121	215.3	2.1	0.53502	3.5	ppb
⌊	Sb-KED2	123	178.7	15.9	0.53628	18.4	ppb
⌈>	Lu-KED2	175	51983.4	1.8			ppb
⌊	Pb-KED2	208	379511.0	0.6	71.89173	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		96			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		102			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-012
Sample Date/Time: Thursday, August 25, 2016 13:22:02
Sample Description: 5
Autosampler Position: 302
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\K1608344-012.014
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17446.0	1.2	30.98189	1.2	ppb
|	Cu-KED3	65	9307.7	0.8	32.34450	2.0	ppb
|	Zn-KED3	66	5258.3	1.4	97.18247	0.7	ppb
⌊>	Ge-KED3	72	12300.6	1.4			ppb
⌈>	In-KED2	115	12228.9	1.1			ppb
|	Sb-KED2	121	142.0	12.3	0.36953	13.7	ppb
⌊	Sb-KED2	123	113.4	5.7	0.34789	7.0	ppb
⌈>	Lu-KED2	175	48237.3	2.5			ppb
⌊	Pb-KED2	208	225403.7	0.7	46.01814	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		95			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-011
Sample Date/Time: Thursday, August 25, 2016 13:24:56
Sample Description: 500
Autosampler Position: 303
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\K1608325-011.015
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	536.7	1.8	0.85103	2.0	ppb
	Cu-KED3	65	280.3	3.3	0.87130	3.6	ppb
	Zn-KED3	66	87.7	9.2	1.41897	8.5	ppb
>	Ge-KED3	72	13584.5	1.2			ppb
>	In-KED2	115	13421.3	2.2			ppb
	Sb-KED2	121	102.7	22.2	0.21970	27.4	ppb
	Sb-KED2	123	70.8	13.1	0.15875	17.8	ppb
>	Lu-KED2	175	49373.9	2.7			ppb
	Pb-KED2	208	150978.1	1.6	30.12364	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		96			
>	In-KED2	115		96			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		97			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Thursday, August 25, 2016 13:27:52
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCV.016
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	15125.3	2.9	25.20763	3.0	ppb
	Cu-KED3	65	7970.2	1.3	25.98826	1.0	ppb
	Zn-KED3	66	1439.7	5.1	24.93608	4.8	ppb
>	Ge-KED3	72	13105.7	0.3			ppb
>	In-KED2	115	13547.7	0.1			ppb
	Sb-KED2	121	8651.3	0.6	24.03017	0.7	ppb
	Sb-KED2	123	6964.3	2.2	24.17324	2.2	ppb
>	Lu-KED2	175	50461.3	0.3			ppb
	Pb-KED2	208	124362.5	0.1	24.26170	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	101				
	Cu-KED3	65	104				
	Zn-KED3	66	100				
>	Ge-KED3	72			92		
>	In-KED2	115			97		
	Sb-KED2	121		96			
	Sb-KED2	123		97			
>	Lu-KED2	175			99		
	Pb-KED2	208		97			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Thursday, August 25, 2016 13:30:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCB.017
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16.7	30.2	0.01491	55.0	ppb
|	Cu-KED3	65	4.7	12.4	0.00386	45.7	ppb
|	Zn-KED3	66	3.0	0.0	0.00293	10.1	ppb
⌊>	Ge-KED3	72	13372.6	0.6			ppb
⌈>	In-KED2	115	13504.4	0.9			ppb
|	Sb-KED2	121	78.7	14.7	0.15120	20.1	ppb
⌊	Sb-KED2	123	52.1	6.6	0.09230	12.1	ppb
⌈>	Lu-KED2	175	49500.3	1.6			ppb
⌊	Pb-KED2	208	20.7	20.1	0.00077	115.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Thursday, August 25, 2016 13:33:41
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\LLCCVS.018
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	128.7	5.9	0.19220	6.6	ppb
	Cu-KED3	65	66.3	8.3	0.19513	7.9	ppb
	Zn-KED3	66	62.3	19.1	0.98433	21.1	ppb
>	Ge-KED3	72	13749.3	1.0			ppb
>	In-KED2	115	13632.0	2.2			ppb
	Sb-KED2	121	84.7	13.0	0.16631	20.9	ppb
	Sb-KED2	123	69.0	24.2	0.14919	39.0	ppb
>	Lu-KED2	175	50129.1	1.2			ppb
	Pb-KED2	208	557.3	7.7	0.10616	8.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	96				
	Cu-KED3	65	98				
	Zn-KED3	66	98				
>	Ge-KED3	72		97			
>	In-KED2	115		98			
	Sb-KED2	121	166				
	Sb-KED2	123	149				
>	Lu-KED2	175		98			
	Pb-KED2	208	106				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control
QC Std 6	Sb-KED2	123	Out of Control

Good Run
JJS 8/25/16

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Thursday, August 25, 2016 13:41:59
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\LLCCVS.019
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	137.3	17.4	0.20215	18.2	ppb
|	Cu-KED3	65	78.3	8.5	0.22850	9.7	ppb
|	Zn-KED3	66	67.7	12.3	1.05107	11.3	ppb
⌊>	Ge-KED3	72	13987.5	1.5			ppb
⌈>	In-KED2	115	13918.4	1.9			ppb
|	Sb-KED2	121	66.7	1.7	0.11237	5.9	ppb
⌊	Sb-KED2	123	58.2	9.5	0.10722	14.1	ppb
⌈>	Lu-KED2	175	50628.6	2.4			ppb
⌊	Pb-KED2	208	504.0	5.5	0.09468	5.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Preparation Information Benchsheet

Prep Run: 266812
Team: Metals
Analyst: Anna Cheatley

Prep Workflow: MetDigAqMS
Prep Method: EPA CLP-METALS ILM04.0
Rush/NPDES: N/A

Status: Prepped
Current Step: Digestion

Prep Date: 07/21/2016 15:52
Due Date: 08/01/2016
Hold Date: 01/10/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1608449-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1608449-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	88551 172187 172654	Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1608449-03	Duplicate Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	88551 172187 172654	Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608011-007	EB071416	.03	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608207-015	EB071816	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608209-015	EB071916	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608210-015	EB071516	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl

7 Total Samples consisting of 4 Client Samples, 0 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016
k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016

Name	Type	ID	Expires
k-met Sb 5ug/mL Sb	Spike	88551	7/21/2016

Preparation Materials

Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761

Step	Name	ID
Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Corrected Temperature	96	deg C
Digestion	K-BlockDigester-06	Correction Factor	0	deg C
Digestion	K-BlockDigester-06	Observed Temperature 211919567	96	deg C

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Thermometer ID 1108666		NONE
Digestion	K-BlockDigester-06	Thermometer Location	43	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	21-JUL-16 15:52	21-JUL-16 17:52	Anna Cheatley		N	

Comments

HCl lot #53338

Review

Reviewed by: _____ Date: _____

Zn

Preparation Information Benchsheet

Prep Run: 267853
Team: Metals
Analyst: Anna Cheatley

Prep Workflow: MetDigAqMS
Prep Method: EPA CLP-METALS ILM04.0
Rush/NPDES: N/A

Status: Prepped
Current Step: Digestion

Prep Date: 08/04/2016 09:43
Due Date: 08/01/2016
Hold Date: 01/10/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1609201-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-03	Duplicate Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608011-007	EB071416	.03	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608207-015	EB071816	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608209-015	EB071916	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608210-015	EB071516	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608325-014	EB072116	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608344-013	EB072016	.04	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl

9 Total Samples consisting of 6 Client Samples, 0 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016
k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016

Name	Type	ID	Expires
k-met Sb 5ug/mL Sb	Spike	174317	7/12/2017

Preparation Materials

Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761

Step	Name	ID
Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Corrected Temperature	96	deg C
Digestion	K-BlockDigester-06	Correction Factor	0	deg C
Digestion	K-BlockDigester-06	Observed Temperature 211919567	96	deg C

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Thermometer ID 1108666		NONE
Digestion	K-BlockDigester-06	Thermometer Location	53	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	04-AUG-16 09:43	04-AUG-16 11:43	Anna Cheatley		N	

Comments

HCl lot #53338

Review

Reviewed by: _____ Date: 8/5/16

ICP-MS LCSW AND SPIKING SOLUTIONS

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-1

k-met 1/100 QCP-CICV-1

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Al	10000	100
Ag	1250	12.5
Ba	10000	100
Be	250	2.5
Ca	25000	250
Co	2500	25
Cu	1250	12.5
Cr	1000	10
Fe	5000	50
K	25000	250
Mg	25000	250
Mn	2500	25
Na	25000	250
Ni	2500	25
V	2500	25
Zn	2500	25

2.50mL to 500mL Dilution of 1000ppm Sb

k-met 5ug/mL Sb

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Sb	5000	50

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-3

k-met 1/100 QCP-CICV-3

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
As	5000	50
Pb	5000	50
Se	5000	50
Tl	5000	50
Cd	2500	25

2.00mL to 200mL Dilution of 1,000 ppm Mo and 1,000 ppm U

k-met Mo/U 10ppm

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Mo	10000	20
U	10000	20

Service Request # K1608209
Calibration 080316CMS03
QC in calibration 080316CMS03
QC Service Request # K1608011
STARLIMS run # 508286
Cal Std: MS20-74H ICSA Std: MS20-68H
ICV Std: MS20-74I ICSAB Std: MS20-68I
LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD 5.0 limit?	X	X	
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb. LCSW=142% Zn. See redigest.

Primary Review by _____ Date 8/4/14
Secondary Review by _____ Date 8/5/14

Data Review Form

Service Request #:	**K1608209**
Instrument ID#:	**K-ICP-MS-03**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080316CMS03.csv**
RUNNO:	**508286**

There are no issues to report.

Primary Approver: _____ 8/4/16

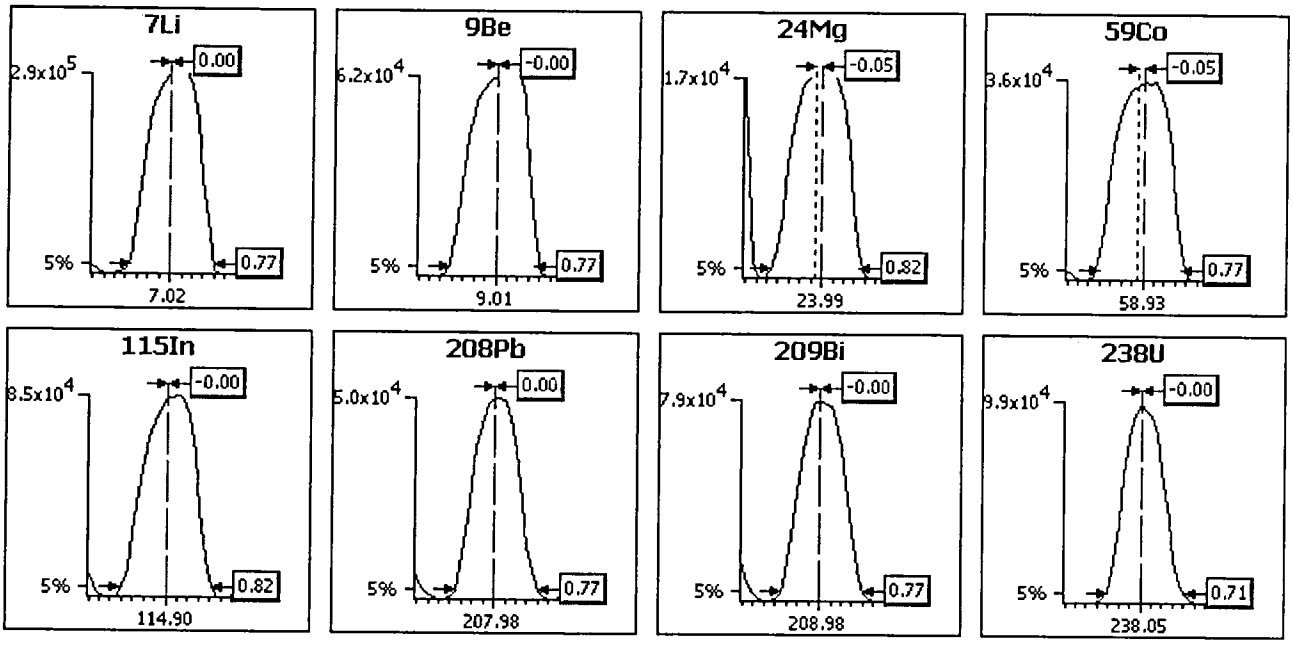
Secondary Approver: _____ 8/5/16

Performance Report

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.77	0.00
9Be	0.90	0.60	0.10	0.77	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.77	-0.05
115In	0.90	0.60	0.10	0.82	-0.00
208Pb	0.90	0.60	0.10	0.77	0.00
209Bi	0.90	0.60	0.10	0.77	-0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	3.8
Focus	23.9
D1	-36.1
Pole Bias	0.4
Hexapole Bias	0.3
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-21.2
Lens 3	-196.1
Forward power	1357
Horizontal	150
Vertical	379
D2	-147
DA	-37.6
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	6:29:00 AM	0.000	284076.95	64021.390	19038.665	37178.368	88721.329	92152.711	1751.419	52817.237
2	6:30:13 AM	0.000	284616.70	64282.221	18790.900	37247.399	88991.702	92036.291	1696.908	53025.444
3	6:31:26 AM	0.000	280053.72	62989.469	18746.809	37270.745	88884.663	92390.355	1683.406	53079.256
4	6:32:38 AM	0.000	282064.47	63422.715	18936.702	37062.395	89291.874	92101.698	1698.909	52955.538
5	6:33:51 AM	0.000	277669.22	62788.334	18622.554	37124.147	89100.005	92354.999	1679.405	53251.258
x		0.000	281696.21	63500.826	18827.126	37176.611	88997.915	92207.211	1702.009	53025.747
σ		0.00	2883.02	643.58	163.07	86.13	215.75	157.08	28.87	159.78
%RSD		0.000	1.023	1.014	0.866	0.232	0.242	0.170	1.696	0.301

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	6:29:00 AM	80875.907	0.000	101610.96
2	6:30:13 AM	81137.977	0.000	101836.97
3	6:31:26 AM	81746.139	0.000	102219.22
4	6:32:38 AM	81748.409	0.000	102459.91
5	6:33:51 AM	81756.733	0.500	102762.54
x		81453.033	0.100	102177.92
σ		417.65	0.22	463.87
%RSD		0.513	223.607	0.454

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	6:29:00 AM	0.019
2	6:30:13 AM	0.018
3	6:31:26 AM	0.018
4	6:32:38 AM	0.018
5	6:33:51 AM	0.018
x		0.0185
σ		0.00
%RSD		1.7799

Result : The performance report passed.

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	ICB1	Unknown	1.000	0	1	1	145
7	CCB1	Unknown	1.000	0	1	1	145
8	LLICVW	Unknown	1.000	0	1	4	145
9	LRSTD	Unknown	1.000	2	1	1	145
10	ICSA	Unknown	1.000	0	1	5	145
11	ICSAB	Unknown	1.000	0	1	6	145
12	KQ1607936-01	Unknown	1.000	1	1	1	145
13	KQ1607936-02	Unknown	1.000	1	1	2	145
14	KQ1607936-03	Unknown	1.000	1	1	3	145
15	K1606832-006	Unknown	1.000	1	1	4	145
16	K1606832-006L	Unknown	1.000	1	1	5	145
17	K1606832-006A	Unknown	1.000	1	1	6	145
18	K1606956-012	Unknown	1.000	1	1	7	145
19	K1607019-010	Unknown	1.000	1	1	8	145
20	K1607034-011	Unknown	1.000	1	1	9	145
21	CCV2	Unknown	1.000	0	1	2	145
22	CCB2	Unknown	1.000	0	1	1	145
23	K1607146-009	Unknown	1.000	1	1	10	145
24	K1607207-006	Unknown	1.000	1	1	11	145
25	K1607266-009	Unknown	1.000	1	1	12	145
26	K1607357-009	Unknown	1.000	1	2	1	145
27	K1607397-009	Unknown	1.000	1	2	2	145
28	K1607580-008	Unknown	1.000	1	2	3	145
29	K1607636-007	Unknown	1.000	1	2	4	145
30	K1607636-008	Unknown	1.000	1	2	5	145
31	K1607675-009	Unknown	1.000	1	2	6	145
32	CCV3	Unknown	1.000	0	1	2	145
33	CCB3	Unknown	1.000	0	1	1	145
34	CCB3	Unknown	1.000	0	1	1	145
35	LLCCVW1	Unknown	1.000	0	1	4	145
36	KQ1608449-01	Unknown	1.000	1	2	7	145
37	KQ1608449-02	Unknown	1.000	1	2	8	145
38	KQ1608449-03	Unknown	1.000	1	2	9	145
39	K1608011-007	Unknown	1.000	1	2	10	145
40	K1608011-007L	Unknown	1.000	1	2	11	145
41	K1608011-007A	Unknown	1.000	1	2	12	145
42	K1608207-015	Unknown	1.000	1	3	1	145
43	K1608209-015	Unknown	1.000	1	3	2	145
44	K1608210-015	Unknown	1.000	1	3	3	145
45	CCV4	Unknown	1.000	0	1	2	145
46	CCB4	Unknown	1.000	0	1	1	145
47	CCB4	Unknown	1.000	0	1	1	145
48	KQ1609039-01	Unknown	1.000	1	3	4	145
49	KQ1609039-02	Unknown	1.000	1	3	5	145
50	KQ1609039-02	Unknown	1.000	1	3	6	145
51	K1608325-014	Unknown	1.000	1	3	7	145
52	K1608325-014L	Unknown	1.000	1	3	8	145
53	K1608325-014A	Unknown	1.000	1	3	9	145
54	K1608344-013	Unknown	1.000	1	3	10	145
55	CCV5	Unknown	1.000	0	1	2	145
56	CCB5	Unknown	1.000	0	1	1	145
57	LLCCVW2	Unknown	1.000	0	1	4	145

Dilution Corrected Concentrations

Cal Blk 8/3/2016 11:58:52 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	101.9%	0.0033	100.9%	0.0110	0.0165	0.0029	-0.0040	0.0068
2	11:59:28	98.6%	-0.0006	100.2%	-0.0021	-0.0116	-0.0015	0.0074	0.0091
3	12:00:05	99.6%	-0.0028	99.0%	-0.0089	-0.0050	-0.0014	-0.0034	-0.0159
x		100.0%	-0.0000	100.0%	0.0000	0.0000	0.0000	-0.0000	0.0000
σ		1.7%	0.0031	1.0%	0.0101	0.0147	0.0025	0.0064	0.0138
%RSD		1.7	0.0000	1.0	0.0000	0.0000	0.0000	0.0000	0.0000

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	-0.0095	0.0198	99.4%	-0.0339	0.0192	0.0854	-0.0948	99.6%
2	11:59:28	0.0018	0.0023	100.2%	0.0235	0.0162	0.0155	0.0940	100.4%
3	12:00:05	0.0077	-0.0221	100.4%	0.0104	-0.0355	-0.1009	0.0008	100.0%
x		0.0000	-0.0000	100.0%	0.0000	0.0000	-0.0000	-0.0000	100.0%
σ		0.0088	0.0210	0.5%	0.0300	0.0308	0.0941	0.0944	0.4%
%RSD		0.0000	0.0000	0.5	0.0000	0.0000	0.0000	0.0000	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	99.0%	-0.0006	-0.0037	98.6%	0.0007	0.0006	0.0001
2	11:59:28	100.3%	-0.0006	0.0055	100.2%	-0.0003	0.0007	0.0000
3	12:00:05	100.7%	0.0012	-0.0018	101.1%	-0.0003	-0.0013	-0.0001
x		100.0%	-0.0000	-0.0000	100.0%	0.0000	-0.0000	0.0000
σ		0.9%	0.0011	0.0049	1.3%	0.0006	0.0011	0.0001
%RSD		0.9	0.0000	0.0000	1.3	0.0000	0.0000	0.0000

Cal. Stn 8/3/2016 12:05:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	99.7%	25.4212	101.4%	24.8380	25.1333	25.4232	25.2951	25.0170
2	12:06:13	94.9%	25.1251	97.9%	25.1084	24.6147	24.6884	25.0301	24.8387
3	12:06:49	96.1%	24.4537	96.2%	25.0537	25.2520	24.8884	24.6747	25.1443
x		96.9%	25.0000	98.5%	25.0000	25.0000	25.0000	25.0000	25.0000
σ		2.5%	0.4957	2.7%	0.1430	0.3389	0.3799	0.3113	0.1535
%RSD		2.5	1.9828	2.7	0.5718	1.3555	1.5195	1.2452	0.6139

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	26.0129	25.0250	99.2%	25.2220	25.3365	25.7518	25.1408	99.6%
2	12:06:13	24.3553	25.0889	101.0%	24.8849	25.3583	24.3936	25.5295	99.9%
3	12:06:49	24.6318	24.8861	100.6%	24.8931	24.3052	24.8546	24.3297	99.8%
x		25.0000	25.0000	100.3%	25.0000	25.0000	25.0000	25.0000	99.8%
σ		0.8880	0.1037	0.9%	0.1923	0.6018	0.6907	0.6121	0.1%
%RSD		3.5520	0.4146	0.9	0.7692	2.4071	2.7626	2.4485	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	100.4%	24.8686	24.7840	100.2%	25.0324	25.1190	25.0564
2	12:06:13	100.4%	25.1052	25.1796	102.3%	25.0025	24.8978	25.0032
3	12:06:49	101.2%	25.0262	25.0364	103.1%	24.9651	24.9832	24.9404
x		100.7%	25.0000	25.0000	101.8%	25.0000	25.0000	25.0000
σ		0.5%	0.1205	0.2003	1.5%	0.0337	0.1115	0.0581
%RSD		0.5	0.4819	0.8011	1.5	0.1350	0.4462	0.2323

ICV1 8/3/2016 12:08:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	100.1%	2.5523	100.4%	25.1690	24.7591	12.3264	12.1984	24.5557
2	12:09:28	93.3%	2.6073	98.3%	25.4122	25.2363	12.6465	12.6558	25.6487
3	12:10:05	95.5%	2.5233	98.0%	24.8719	24.8466	12.3458	12.4137	25.3729
x		96.3%	2.5610	98.9%	25.1510	24.9474	12.4396	12.4226	25.1924
σ		3.4%	0.0427	1.3%	0.2706	0.2541	0.1795	0.2288	0.5684
%RSD		3.6	1.6657	1.3	1.0759	1.0184	1.4429	1.8418	2.2562

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	28.2358	27.5655	100.2%	25.0311	24.9594	25.1245	25.4640	99.2%
2	12:09:28	28.2388	27.5751	99.8%	25.0224	25.9091	25.7493	25.4659	99.6%
3	12:10:05	28.8693	28.2665	98.7%	25.2677	25.6252	25.8031	25.2063	100.3%
x		28.4479	27.8023	99.6%	25.1071	25.4979	25.5590	25.3787	99.7%
σ		0.3649	0.4020	0.8%	0.1392	0.4875	0.3772	0.1493	0.6%
%RSD		1.2826	1.4459	0.8	0.5544	1.9118	1.4760	0.5883	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	99.1%	26.4095	26.3179	100.9%	24.6743	25.3301	25.0655
2	12:09:28	100.3%	26.2787	26.2682	102.8%	24.6864	25.2792	25.0687
3	12:10:05	101.3%	25.9541	25.7546	102.7%	25.0059	25.7189	25.3189
x		100.3%	26.2141	26.1136	102.1%	24.7888	25.4427	25.1510
σ		1.1%	0.2345	0.3118	1.1%	0.1880	0.2405	0.1454
%RSD		1.1	0.8945	1.1942	1.1	0.7586	0.9454	0.5782

CCV1 8/3/2016 12:13:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	103.0%	24.5929	98.8%	25.3563	25.2254	25.0767	25.1933	25.4099
2	12:13:38	103.0%	24.3963	98.7%	25.0314	24.7119	24.7451	24.8955	25.0414
3	12:14:15	102.4%	23.9763	100.4%	25.0682	24.9721	24.6158	24.9420	25.0767
x		102.8%	24.3218	99.3%	25.1520	24.9698	24.8126	25.0103	25.1760
σ		0.4%	0.3150	0.9%	0.1779	0.2567	0.2377	0.1602	0.2033
%RSD		0.4	1.2949	0.9	0.7074	1.0282	0.9581	0.6405	0.8075

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	25.4262	24.8912	99.3%	25.4798	23.6658	25.4510	24.5424	99.8%
2	12:13:38	24.5112	24.8600	100.6%	24.0787	24.6866	25.0870	23.8752	100.9%
3	12:14:15	24.3309	25.4203	98.5%	25.1746	24.8341	24.4187	24.7232	100.4%
x		24.7561	25.0571	99.5%	24.9110	24.3955	24.9856	24.3803	100.4%
σ		0.5873	0.3149	1.1%	0.7368	0.6362	0.5236	0.4467	0.6%
%RSD		2.3722	1.2566	1.1	2.9576	2.6080	2.0955	1.8320	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	100.1%	24.8115	24.6011	100.4%	24.7936	24.7451	24.9171
2	12:13:38	101.0%	25.0560	24.7475	101.5%	24.8937	24.8532	24.9575
3	12:14:15	100.2%	25.1360	25.1246	102.0%	25.0731	24.9676	25.0217
x		100.5%	25.0012	24.8244	101.3%	24.9201	24.8553	24.9654
σ		0.5%	0.1691	0.2701	0.8%	0.1416	0.1112	0.0527
%RSD		0.5	0.6763	1.0879	0.8	0.5683	0.4475	0.2111

ICB1 8/3/2016 12:20:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	107.2%	0.0001	102.1%	0.0024	0.0081	0.0038	0.0063	0.0098
2	12:21:22	107.0%	0.0116	101.2%	0.0120	0.0280	0.0161	0.0073	0.0153
3	12:21:58	110.3%	0.0141	102.1%	0.0067	0.0243	0.0170	0.0137	0.0156
x		108.2%	0.0086	101.8%	0.0070	0.0201	0.0123	0.0091	0.0136
σ		1.8%	0.0075	0.5%	0.0048	0.0106	0.0074	0.0040	0.0033
%RSD		1.7	86.8181	0.5	68.3704	52.7547	59.9918	44.4749	24.2204

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	0.0265	-0.0084	99.0%	-0.0611	0.0981	0.3953	-0.1333	100.0%
2	12:21:22	-0.0401	0.0044	100.5%	-0.0429	0.0278	-0.1792	-0.1701	100.8%
3	12:21:58	-0.0060	0.0078	102.1%	-0.0233	-0.0526	-0.0332	-0.1967	100.5%
x		-0.0065	0.0013	100.6%	-0.0424	0.0244	0.0610	-0.1667	100.4%
σ		0.0333	0.0086	1.6%	0.0189	0.0754	0.2986	0.0318	0.4%
%RSD		508.7854	668.2865	1.6	44.5559	308.7781	489.9042	19.1051	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	99.4%	0.0179	0.0213	97.2%	0.0014	0.0025	0.0007
2	12:21:22	100.0%	0.0339	0.0349	99.2%	0.0116	0.0140	0.0109
3	12:21:58	99.9%	0.0347	0.0363	99.3%	0.0158	0.0137	0.0139
x		99.8%	0.0288	0.0308	98.6%	0.0096	0.0101	0.0085
σ		0.3%	0.0095	0.0083	1.2%	0.0074	0.0066	0.0069
%RSD		0.3	32.7875	26.9649	1.2	76.9747	65.4806	81.1057

ICB1 8/3/2016 12:24:59 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	110.6%	0.0026	99.8%	-0.0074	0.0298	0.0063	0.0056	0.0190
2	12:25:35	108.8%	0.0004	100.5%	0.0063	0.0006	0.0050	0.0081	0.0159
3	12:26:12	102.2%	0.0017	99.0%	-0.0033	0.0089	0.0097	0.0088	0.0048
x		107.2%	0.0016	99.7%	-0.0015	0.0131	0.0070	0.0075	0.0132
σ		4.4%	0.0011	0.8%	0.0070	0.0150	0.0025	0.0017	0.0075
%RSD		4.1	70.5814	0.8	471.6372	114.5867	35.3464	22.8026	56.7756

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	0.0021	0.0154	100.0%	0.0058	0.1201	0.4180	0.1044	100.4%
2	12:25:35	0.0019	0.0063	100.1%	-0.0597	0.0417	-0.1792	-0.1886	101.4%
3	12:26:12	-0.0335	-0.0012	99.9%	0.0009	-0.0223	-0.0222	-0.0466	101.5%
x		-0.0099	0.0068	100.0%	-0.0177	0.0465	0.0722	-0.0436	101.1%
σ		0.0205	0.0083	0.1%	0.0365	0.0713	0.3096	0.1465	0.6%
%RSD		207.6824	121.3553	0.1	206.5850	153.3237	428.9475	336.0915	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	99.6%	0.0047	0.0058	98.3%	0.0052	0.0034	0.0032
2	12:25:35	100.0%	0.0117	0.0142	99.9%	0.0039	0.0050	0.0048
3	12:26:12	100.8%	0.0110	0.0155	100.7%	0.0058	0.0080	0.0055
x		100.2%	0.0091	0.0118	99.7%	0.0050	0.0055	0.0045
σ		0.6%	0.0038	0.0053	1.2%	0.0010	0.0023	0.0012
%RSD		0.6	42.0297	44.6646	1.2	19.5712	42.3099	26.4761

CCB1 8/3/2016 12:28:29 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	111.0%	0.0071	101.7%	-0.0070	0.0514	0.0033	0.0079	0.0212
2	12:29:06	105.3%	0.0042	100.4%	0.0085	-0.0057	0.0022	0.0035	0.0109
3	12:29:42	103.8%	0.0007	99.8%	0.0077	0.0216	0.0067	-0.0003	0.0087
x		106.7%	0.0040	100.6%	0.0031	0.0225	0.0041	0.0037	0.0136
σ		3.8%	0.0032	1.0%	0.0088	0.0285	0.0024	0.0041	0.0067
%RSD		3.6	79.2905	1.0	285.9216	127.1398	58.4338	111.1530	48.9774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	0.0015	0.0123	100.3%	-0.0149	-0.0094	-0.0782	-0.0558	100.0%
2	12:29:06	-0.0042	-0.0016	100.3%	-0.0363	0.1562	0.0573	0.0007	101.8%
3	12:29:42	-0.0519	0.0286	100.7%	0.0115	-0.0623	-0.0714	-0.0370	100.7%
x		-0.0182	0.0131	100.4%	-0.0132	0.0282	-0.0308	-0.0307	100.8%
σ		0.0293	0.0151	0.3%	0.0239	0.1140	0.0763	0.0288	0.9%
%RSD		160.8221	115.6262	0.3	180.8062	404.6443	248.0252	93.8789	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	99.7%	-0.0017	0.0016	98.6%	0.0018	0.0044	0.0024
2	12:29:06	101.1%	0.0070	0.0051	100.3%	0.0010	0.0030	0.0029
3	12:29:42	100.9%	0.0071	0.0073	100.9%	0.0049	0.0060	0.0041
x		100.6%	0.0041	0.0047	99.9%	0.0026	0.0045	0.0031
σ		0.7%	0.0051	0.0029	1.2%	0.0021	0.0015	0.0008
%RSD		0.7	122.8286	61.8019	1.2	80.4608	33.1447	27.1193

LLICVW 8/3/2016 12:32:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	105.5%	0.0214	99.4%	0.1749	0.1826	0.0967	0.0995	0.4898
2	12:32:36	104.4%	0.0205	98.9%	0.1729	0.1699	0.1010	0.1020	0.4672
3	12:33:13	100.1%	0.0262	97.4%	0.1729	0.1709	0.0914	0.1012	0.4605
x		103.3%	0.0227	98.6%	0.1736	0.1745	0.0964	0.1009	0.4725
σ		2.9%	0.0031	1.0%	0.0011	0.0071	0.0048	0.0013	0.0154
%RSD		2.8	13.5714	1.1	0.6617	4.0485	5.0033	1.2780	3.2514

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	0.3191	0.4826	99.6%	0.5424	1.1331	1.1067	1.1845	99.2%
2	12:32:36	0.4231	0.5021	99.2%	0.5253	1.0036	1.1257	0.9504	101.2%
3	12:33:13	0.6294	0.4790	99.1%	0.4133	0.9666	0.7446	0.7906	100.8%
x		0.4572	0.4879	99.3%	0.4937	1.0344	0.9923	0.9752	100.4%
σ		0.1579	0.0124	0.3%	0.0701	0.0874	0.2147	0.1981	1.0%
%RSD		34.5465	2.5491	0.3	14.2022	8.4527	21.6389	20.3127	1.0

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	99.4%	0.0491	0.0517	98.2%	0.0228	0.0191	0.0219
2	12:32:36	100.9%	0.0556	0.0511	100.3%	0.0183	0.0156	0.0188
3	12:33:13	100.2%	0.0450	0.0506	101.1%	0.0194	0.0199	0.0203
x		100.2%	0.0499	0.0511	99.9%	0.0202	0.0182	0.0203
σ		0.8%	0.0053	0.0006	1.5%	0.0024	0.0023	0.0016
%RSD		0.8	10.6827	1.0801	1.5	11.7732	12.6217	7.6566

LRSTD 8/3/2016 12:35:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	101.6%	204.6970	97.7%	196.8791	199.3838	202.7716	202.3057	214.8368
2	12:36:03	99.4%	196.6304	96.7%	201.8646	196.0216	205.1825	202.5141	214.2862
3	12:36:40	94.0%	208.8669	94.0%	199.4093	197.9521	204.4202	202.3690	215.4034
x		98.3%	203.3981	96.1%	199.3843	197.7858	204.1248	202.3963	214.8422
σ		3.9%	6.2208	1.9%	2.4928	1.6872	1.2323	0.1068	0.5586
%RSD		4.0	3.0584	2.0	1.2503	0.8531	0.6037	0.0528	0.2600

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	211.0382	208.7631	98.1%	213.5307	218.0449	219.4838	222.4606	99.3%
2	12:36:03	209.1400	208.0922	98.1%	212.9448	217.7150	224.0242	221.9674	99.7%
3	12:36:40	208.3781	210.3120	98.8%	211.0625	213.6693	220.4988	217.5610	99.2%
x		209.5188	209.0557	98.3%	212.5127	216.4764	221.3356	220.6630	99.4%
σ		1.3699	1.1385	0.4%	1.2896	2.4366	2.3831	2.6977	0.3%
%RSD		0.6538	0.5446	0.4	0.6068	1.1256	1.0767	1.2226	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	105.9%	201.4358	199.6222	100.9%	204.9497	204.0435	207.6721
2	12:36:03	105.4%	203.0798	201.2665	102.6%	204.3710	201.9004	206.6079
3	12:36:40	105.8%	201.5785	200.9491	102.7%	204.9323	204.0668	208.2962
x		105.7%	202.0314	200.6126	102.1%	204.7510	203.3369	207.5254
σ		0.2%	0.9108	0.8723	1.0%	0.3292	1.2441	0.8536
%RSD		0.2	0.4508	0.4348	1.0	0.1608	0.6118	0.4113

ICSA 8/3/2016 12:43:01 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	101.6%	0.0188	95.9%	1.2822	1.5791	3.1617	2.3884	2.0381
2	12:43:38	101.5%	0.0375	94.7%	1.3082	1.6755	3.1430	2.4570	2.0142
3	12:44:15	98.1%	0.0282	95.6%	1.3499	1.6744	3.1174	2.2806	2.1554
x		100.4%	0.0282	95.4%	1.3134	1.6430	3.1407	2.3754	2.0692
σ		2.0%	0.0094	0.7%	0.0341	0.0553	0.0222	0.0889	0.0755
%RSD		2.0	33.3335	0.7	2.5976	3.3676	0.7080	3.7433	3.6502

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	4.3331	1.8773	92.0%	-0.0882	1.5635	-0.2048	-0.5576	88.1%
2	12:43:38	4.3893	1.9567	94.0%	-0.1832	1.5918	-0.2664	-0.9274	90.2%
3	12:44:15	4.7103	1.8253	95.2%	-0.2088	1.7615	0.1393	-0.8771	90.8%
x		4.4776	1.8864	93.7%	-0.1601	1.6389	-0.1106	-0.7873	89.7%
σ		0.2035	0.0661	1.6%	0.0635	0.1071	0.2186	0.2005	1.4%
%RSD		4.5446	3.5066	1.7	39.6931	6.5335	197.5957	25.4691	1.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	90.8%	0.0496	0.0463	91.8%	0.1579	0.1497	0.1512
2	12:43:38	93.1%	0.0637	0.0737	93.8%	0.1782	0.1683	0.1738
3	12:44:15	93.4%	0.0592	0.0580	94.5%	0.1824	0.1719	0.1738
x		92.4%	0.0575	0.0594	93.4%	0.1728	0.1633	0.1663
σ		1.4%	0.0072	0.0137	1.4%	0.0131	0.0119	0.0131
%RSD		1.5	12.5572	23.1478	1.5	7.5856	7.2761	7.8685

ICSAB 8/3/2016 12:46:49 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	107.3%	0.0179	97.6%	50.0934	50.2985	49.8108	48.3987	27.2011
2	12:47:26	103.7%	0.0321	98.0%	49.2970	49.3955	48.2700	47.3286	26.4547
3	12:48:02	97.9%	0.0334	95.5%	49.9994	49.8824	48.2139	47.4552	26.5532
x		103.0%	0.0278	97.0%	49.7966	49.8588	48.7649	47.7275	26.7363
σ		4.7%	0.0086	1.3%	0.4352	0.4520	0.9062	0.5847	0.4055
%RSD		4.6	30.9751	1.4	0.8740	0.9065	1.8583	1.2251	1.5168
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	27.7560	25.1930	95.1%	25.0432	25.8661	23.9499	23.6767	91.8%
2	12:47:26	27.2295	25.7721	96.2%	24.3613	25.2792	23.0851	23.5271	91.3%
3	12:48:02	27.3969	25.4775	95.0%	24.0746	26.2777	24.2956	23.4515	92.2%
x		27.4608	25.4809	95.4%	24.4930	25.8077	23.7769	23.5518	91.8%
σ		0.2690	0.2896	0.7%	0.4975	0.5018	0.6235	0.1146	0.5%
%RSD		0.9794	1.1365	0.7	2.0313	1.9444	2.6225	0.4867	0.5
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	12:46:49	94.4%	0.0336	0.0286	95.5%	0.1365	0.1287	0.1311	
2	12:47:26	96.0%	0.0439	0.0453	97.7%	0.1486	0.1434	0.1419	
3	12:48:02	95.7%	0.0410	0.0388	98.3%	0.1429	0.1363	0.1374	
x		95.4%	0.0395	0.0376	97.1%	0.1427	0.1361	0.1368	
σ		0.8%	0.0053	0.0084	1.5%	0.0060	0.0073	0.0054	
%RSD		0.9	13.4781	22.3689	1.5	4.2366	5.3721	3.9381	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	102.3%	0.0025	98.3%	-0.0029	0.0450	0.0188	0.0157	-0.0137
2	12:51:06	99.2%	0.0130	95.1%	0.0023	0.0585	0.0305	0.0244	0.0029
3	12:51:43	99.7%	0.0078	96.3%	-0.0026	0.0754	0.0254	0.0139	-0.0008
x		100.4%	0.0078	96.6%	-0.0011	0.0596	0.0249	0.0180	-0.0039
σ		1.7%	0.0052	1.6%	0.0029	0.0152	0.0059	0.0056	0.0087
%RSD		1.7	67.5617	1.7	270.5133	25.4882	23.6067	31.2875	226.5048
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	0.0516	-0.0247	98.8%	0.0098	1.8396	-0.2022	0.0993	98.0%
2	12:51:06	0.0055	-0.0100	97.2%	0.0502	1.4686	-0.4213	0.0789	98.7%
3	12:51:43	0.0181	-0.0110	96.6%	0.0295	1.6547	-0.0033	0.0010	97.6%
x		0.0251	-0.0152	97.5%	0.0298	1.6543	-0.2089	0.0597	98.1%
σ		0.0238	0.0082	1.1%	0.0202	0.1855	0.2091	0.0519	0.5%
%RSD		95.0914	53.9854	1.2	67.6269	11.2146	100.0691	86.8512	0.5
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	12:50:30	97.7%	-0.0027	-0.0013	100.1%	0.0081	0.0070	0.0070	
2	12:51:06	98.3%	0.0034	0.0040	101.8%	0.0096	0.0106	0.0086	
3	12:51:43	98.5%	0.0036	0.0040	102.2%	0.0079	0.0093	0.0093	
x		98.1%	0.0015	0.0022	101.4%	0.0085	0.0090	0.0083	
σ		0.4%	0.0036	0.0031	1.1%	0.0010	0.0018	0.0012	
%RSD		0.4	242.7339	136.9929	1.1	11.3145	19.9029	13.8756	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	105.3%	2.4012	97.2%	25.4300	25.7931	12.6477	12.7929	25.5417
2	13:06:40	101.2%	2.4695	96.0%	25.4468	25.3819	12.6981	12.9161	25.6474
3	13:07:17	94.7%	2.6176	95.5%	25.1108	25.1650	12.6703	12.6215	25.3035
x		100.4%	2.4961	96.2%	25.3292	25.4467	12.6720	12.7769	25.4975
σ		5.4%	0.1106	0.9%	0.1893	0.3190	0.0253	0.1479	0.1761
%RSD		5.4	4.4322	0.9	0.7475	1.2536	0.1993	1.1577	0.6907
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	29.5367	27.8183	98.1%	50.3137	51.2640	50.5695	49.4048	98.4%
2	13:06:40	30.0013	28.0722	97.3%	51.4177	50.9710	51.6469	50.3160	99.7%
3	13:07:17	29.0291	28.0459	98.1%	50.5450	51.2706	50.0453	48.4183	98.3%
x		29.5224	27.9788	97.8%	50.7588	51.1685	50.7539	49.3797	98.8%
σ		0.4863	0.1396	0.4%	0.5822	0.1711	0.8166	0.9491	0.8%
%RSD		1.6471	0.4990	0.4	1.1470	0.3344	1.6089	1.9221	0.8
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:06:04	98.1%	50.7364	50.5130	101.5%	50.2519	51.6037	50.9776	
2	13:06:40	99.7%	50.7681	50.1603	102.7%	50.4259	51.9127	51.3935	
3	13:07:17	98.2%	51.6057	51.1017	102.9%	50.6085	52.2601	51.7411	
x		98.7%	51.0367	50.5917	102.4%	50.4288	51.9255	51.3707	
σ		0.9%	0.4930	0.4756	0.7%	0.1783	0.3284	0.3823	
%RSD		0.9	0.9660	0.9401	0.7	0.3535	0.6324	0.7441	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	95.0%	2.5619	95.9%	26.0268	25.4634	12.7333	12.8741	25.7640
2	13:10:38	94.0%	2.5442	96.3%	25.5635	25.3786	12.6549	12.7855	26.2329
3	13:11:15	91.4%	2.5815	94.4%	25.4087	25.1575	12.7694	12.6487	25.6944
x		93.5%	2.5625	95.5%	25.6663	25.3331	12.7192	12.7695	25.8971
σ		1.8%	0.0187	1.0%	0.3216	0.1579	0.0586	0.1135	0.2929
%RSD		2.0	0.7279	1.0	1.2531	0.6234	0.4605	0.8892	1.1310
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	29.3930	28.5213	97.0%	51.2213	52.3733	48.9912	51.8164	98.6%
2	13:10:38	29.7539	28.5697	96.2%	51.2684	52.0815	50.2762	49.8779	98.0%
3	13:11:15	28.8391	28.3598	96.9%	51.7714	51.1347	48.6731	52.3780	98.5%
x		29.3287	28.4836	96.7%	51.4204	51.8632	49.3135	51.3574	98.4%
σ		0.4608	0.1099	0.4%	0.3049	0.6475	0.8487	1.3117	0.3%
%RSD		1.5711	0.3859	0.4	0.5929	1.2485	1.7211	2.5540	0.3
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:10:02	98.3%	51.6857	51.1157	101.1%	50.9121	52.2340	51.8083	
2	13:10:38	99.1%	51.6491	51.2691	103.2%	50.7410	52.2848	51.7386	
3	13:11:15	99.3%	51.9209	51.4271	102.6%	51.2400	52.7772	52.1288	
x		98.9%	51.7519	51.2706	102.3%	50.9644	52.4320	51.8919	
σ		0.5%	0.1475	0.1557	1.1%	0.2536	0.3000	0.2081	
%RSD		0.5	0.2850	0.3037	1.1	0.4975	0.5722	0.4011	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.7%	0.0026	94.9%	0.0341	0.0555	0.0838	0.0925	1.2994
2	13:15:32	95.6%	-0.0008	93.3%	0.0434	0.0808	0.0920	0.0932	1.3435
3	13:16:09	98.6%	0.0012	93.6%	0.0474	0.0723	0.1028	0.0945	1.2021
x		97.0%	0.0010	93.9%	0.0416	0.0695	0.0929	0.0934	1.2817
σ		1.5%	0.0017	0.8%	0.0068	0.0129	0.0096	0.0010	0.0723
%RSD		1.6	174.3820	0.9	16.2806	18.4912	10.2963	1.0567	5.6436

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	1.3125	1.1663	95.8%	0.0330	1.8212	-0.3612	0.0322	96.2%
2	13:15:32	1.3162	1.1964	96.3%	0.0359	1.7280	-0.1651	0.0914	97.1%
3	13:16:09	1.1767	1.2310	94.9%	0.0173	1.9458	-0.2334	-0.0072	96.6%
x		1.2684	1.1979	95.7%	0.0287	1.8317	-0.2533	0.0388	96.6%
σ		0.0795	0.0324	0.7%	0.0100	0.1093	0.0995	0.0496	0.5%
%RSD		6.2666	2.7064	0.8	34.8797	5.9655	39.3030	127.9914	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.2%	0.0152	0.0168	97.8%	0.0311	0.0269	0.0279
2	13:15:32	96.8%	0.0216	0.0182	99.0%	0.0318	0.0332	0.0299
3	13:16:09	95.9%	0.0211	0.0168	99.7%	0.0309	0.0316	0.0324
x		96.3%	0.0193	0.0173	98.9%	0.0312	0.0306	0.0301
σ		0.5%	0.0035	0.0008	1.0%	0.0005	0.0033	0.0023
%RSD		0.5	18.3656	4.6145	1.0	1.5558	10.6389	7.6294

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	105.5%	0.0015	94.6%	-0.0014	0.0012	0.0180	0.0234	0.2083
2	13:19:06	98.6%	0.0007	96.0%	-0.0132	0.0061	0.0165	0.0240	0.2564
3	13:19:43	97.2%	0.0030	96.2%	-0.0033	-0.0153	0.0211	0.0021	0.2383
x		100.4%	0.0017	95.6%	-0.0060	-0.0027	0.0186	0.0165	0.2343
σ		4.4%	0.0012	0.8%	0.0063	0.0112	0.0024	0.0125	0.0243
%RSD		4.4	67.1444	0.9	106.1766	420.4207	12.6811	75.8328	10.3608

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	0.2409	0.2264	96.6%	0.1141	0.2841	-0.2150	0.2385	96.2%
2	13:19:06	0.2969	0.2335	98.0%	0.0442	0.4606	-0.1752	0.1882	96.9%
3	13:19:43	0.1546	0.2749	96.2%	0.0019	0.4979	-0.1567	0.0904	97.8%
x		0.2308	0.2449	96.9%	0.0534	0.4142	-0.1823	0.1724	96.9%
σ		0.0717	0.0262	0.9%	0.0566	0.1142	0.0298	0.0753	0.8%
%RSD		31.0668	10.6856	1.0	106.0825	27.5687	16.3219	43.6889	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	96.5%	-0.0131	-0.0083	96.7%	0.0093	0.0059	0.0078
2	13:19:06	97.8%	-0.0077	-0.0049	99.0%	0.0101	0.0095	0.0081
3	13:19:43	97.7%	-0.0072	-0.0075	99.8%	0.0099	0.0119	0.0096
x		97.4%	-0.0093	-0.0069	98.5%	0.0097	0.0091	0.0085
σ		0.7%	0.0033	0.0018	1.6%	0.0004	0.0030	0.0010
%RSD		0.7	35.2388	25.9221	1.6	4.4386	33.2716	11.2575

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	99.2%	20.4433	96.8%	21.1936	21.0694	21.2988	21.4634	22.3573
2	13:22:40	98.9%	20.2169	92.0%	21.8326	21.3973	21.5108	21.4226	22.3424
3	13:23:17	99.1%	20.1481	95.6%	21.2707	21.1500	21.2476	20.9309	22.5631
x		99.1%	20.2694	94.8%	21.4323	21.2055	21.3524	21.2723	22.4209
σ		0.2%	0.1545	2.5%	0.3488	0.1709	0.1395	0.2964	0.1233
%RSD		0.2	0.7621	2.7	1.6275	0.8059	0.6534	1.3932	0.5501

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	22.5175	22.2216	96.0%	21.1216	22.2181	20.4610	21.6878	96.2%
2	13:22:40	22.3645	22.2692	96.4%	21.0818	22.6540	20.4815	20.6758	96.2%
3	13:23:17	21.6850	21.9754	95.7%	21.2072	21.7388	19.4586	20.9449	96.6%
x		22.1890	22.1554	96.0%	21.1369	22.2036	20.1337	21.1028	96.4%
σ		0.4431	0.1577	0.4%	0.0641	0.4578	0.5847	0.5242	0.2%
%RSD		1.9970	0.7117	0.4	0.3031	2.0617	2.9042	2.4838	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	97.2%	21.4180	21.3357	98.5%	21.2632	21.1367	21.1585
2	13:22:40	96.3%	21.7266	21.6745	100.7%	21.1525	21.1633	21.2366
3	13:23:17	97.2%	21.5013	21.5065	100.0%	21.3760	21.3954	21.4088
x		96.9%	21.5486	21.5056	99.8%	21.2639	21.2318	21.2680
σ		0.5%	0.1596	0.1694	1.1%	0.1117	0.1423	0.1280
%RSD		0.5	0.7408	0.7877	1.1	0.5253	0.6700	0.6020

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	99.5%	0.0096	94.7%	0.1052	0.0923	0.1495	0.1523	1.2404
2	13:26:29	90.0%	0.0186	93.0%	0.1238	0.1109	0.1700	0.1785	1.1736
3	13:27:06	90.9%	0.0092	93.0%	0.0989	0.0953	0.1575	0.1547	1.2130
x		93.5%	0.0124	93.6%	0.1093	0.0995	0.1590	0.1618	1.2090
σ		5.2%	0.0054	1.0%	0.0130	0.0100	0.0103	0.0145	0.0336
%RSD		5.6	43.0305	1.1	11.8497	10.0192	6.5060	8.9429	2.7774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	1.1149	1.2133	95.7%	0.1412	1.6068	-0.3806	0.1715	96.5%
2	13:26:29	1.0217	1.1553	95.4%	0.0321	2.0865	-0.2696	0.1732	96.0%
3	13:27:06	1.1759	1.1377	95.1%	-0.0166	2.0111	-0.3613	-0.1070	96.2%
x		1.1042	1.1688	95.4%	0.0522	1.9015	-0.3372	0.0793	96.2%
σ		0.0776	0.0396	0.3%	0.0808	0.2580	0.0593	0.1613	0.2%
%RSD		7.0296	3.3879	0.3	154.7012	13.5669	17.5914	203.4871	0.2

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	94.8%	0.0103	0.0106	97.7%	0.0700	0.0694	0.0693
2	13:26:29	95.0%	0.0210	0.0178	99.3%	0.0792	0.0804	0.0784
3	13:27:06	95.7%	0.0123	0.0106	99.7%	0.0714	0.0722	0.0719
x		95.2%	0.0145	0.0130	98.9%	0.0735	0.0740	0.0732
σ		0.4%	0.0057	0.0041	1.1%	0.0050	0.0057	0.0047
%RSD		0.5	39.2414	31.8788	1.1	6.7977	7.7116	6.4348

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	96.3%	0.0035	94.2%	0.1593	0.1657	0.1542	0.1753	1.3872
2	13:30:19	96.2%	0.0027	92.3%	0.1589	0.1450	0.1548	0.1583	1.4792
3	13:30:56	91.8%	0.0072	93.3%	0.1815	0.1338	0.1533	0.1538	1.4574
x		94.8%	0.0045	93.2%	0.1666	0.1481	0.1541	0.1625	1.4413
σ		2.6%	0.0024	1.0%	0.0129	0.0162	0.0007	0.0113	0.0481
%RSD		2.7	54.1311	1.0	7.7662	10.9315	0.4604	6.9716	3.3353

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	1.3825	1.3779	95.3%	-0.0471	2.1025	-0.1488	-0.0176	95.7%
2	13:30:19	1.4152	1.3839	96.5%	-0.0230	1.9154	0.0007	0.0314	96.1%
3	13:30:56	1.4258	1.4140	94.6%	-0.0776	2.1817	-0.0423	-0.0873	96.5%
x		1.4078	1.3919	95.5%	-0.0492	2.0665	-0.0635	-0.0245	96.1%
σ		0.0225	0.0193	1.0%	0.0274	0.1367	0.0770	0.0597	0.4%
%RSD		1.6014	1.3890	1.0	55.5913	6.6169	121.2961	243.4976	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	94.8%	0.0015	0.0023	97.6%	0.0298	0.0244	0.0268
2	13:30:19	96.3%	-0.0009	0.0045	99.9%	0.0337	0.0316	0.0295
3	13:30:56	96.1%	0.0032	0.0013	99.7%	0.0342	0.0312	0.0294
x		95.7%	0.0013	0.0027	99.1%	0.0326	0.0291	0.0286
σ		0.8%	0.0021	0.0017	1.2%	0.0024	0.0040	0.0015
%RSD		0.8	163.3964	61.8161	1.3	7.3886	13.8609	5.2801

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	101.7%	0.0030	95.0%	0.0994	0.0948	0.0722	0.0665	0.5486
2	13:33:58	98.2%	0.0008	93.9%	0.0850	0.0696	0.0706	0.0772	0.4684
3	13:34:35	91.5%	0.0049	94.2%	0.0909	0.1020	0.0773	0.0808	0.5383
x		97.1%	0.0029	94.4%	0.0918	0.0888	0.0734	0.0749	0.5184
σ		5.1%	0.0021	0.6%	0.0072	0.0170	0.0035	0.0075	0.0436
%RSD		5.3	72.2323	0.6	7.8586	19.1852	4.7857	9.9715	8.4150

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	0.5158	0.5268	94.8%	-0.2155	2.4683	0.0106	-0.2166	95.4%
2	13:33:58	0.4752	0.4553	94.4%	0.0041	2.0244	-0.1542	-0.0086	96.3%
3	13:34:35	0.5166	0.5355	94.8%	0.0081	1.9358	-0.1252	-0.0674	96.0%
x		0.5025	0.5059	94.7%	-0.0678	2.1429	-0.0896	-0.0975	95.9%
σ		0.0237	0.0440	0.2%	0.1279	0.2853	0.0880	0.1072	0.5%
%RSD		4.7171	8.6997	0.3	188.7278	13.3154	98.1413	109.9461	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	95.4%	-0.0022	-0.0062	97.8%	0.0093	0.0128	0.0102
2	13:33:58	96.4%	-0.0030	-0.0004	99.4%	0.0100	0.0097	0.0099
3	13:34:35	96.3%	-0.0070	-0.0017	100.0%	0.0119	0.0131	0.0113
x		96.1%	-0.0041	-0.0028	99.1%	0.0104	0.0118	0.0104
σ		0.5%	0.0026	0.0030	1.2%	0.0013	0.0019	0.0007
%RSD		0.6	63.1923	108.8738	1.2	12.7849	15.9757	7.0552

CCV2 8/3/2016 1:36:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	94.9%	25.1550	96.4%	25.0082	25.0840	25.3274	24.9542	26.0927
2	13:37:32	96.5%	25.0253	94.9%	25.2027	25.0816	25.1350	25.2209	25.3994
3	13:38:08	92.5%	25.6392	94.4%	25.1441	25.2254	25.2308	25.5684	25.9205
x		94.6%	25.2732	95.2%	25.1183	25.1303	25.2311	25.2478	25.8042
σ		2.0%	0.3235	1.0%	0.0998	0.0824	0.0962	0.3080	0.3609
%RSD		2.1	1.2802	1.1	0.3973	0.3277	0.3812	1.2200	1.3988

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	26.0432	25.3710	96.3%	25.4587	24.8189	25.3277	24.9381	97.9%
2	13:37:32	25.0095	25.0716	97.0%	25.2400	24.7289	24.8517	24.8204	99.1%
3	13:38:08	25.3300	25.7157	96.3%	24.7102	24.8569	25.0834	24.0360	99.1%
x		25.4609	25.3861	96.5%	25.1363	24.8016	25.0876	24.5982	98.7%
σ		0.5291	0.3223	0.4%	0.3849	0.0657	0.2380	0.4904	0.7%
%RSD		2.0782	1.2698	0.4	1.5311	0.2651	0.9488	1.9936	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	97.7%	25.0925	24.8617	100.0%	25.3336	25.0709	25.3316
2	13:37:32	99.2%	25.0185	25.1465	102.0%	25.2907	25.2712	25.3645
3	13:38:08	99.7%	25.0802	25.1635	102.2%	25.4072	25.2456	25.4113
x		98.9%	25.0637	25.0572	101.4%	25.3439	25.1959	25.3692
σ		1.0%	0.0397	0.1696	1.2%	0.0589	0.1090	0.0400
%RSD		1.1	0.1582	0.6768	1.2	0.2324	0.4326	0.1578

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	100.0%	0.0065	99.6%	0.0123	0.0145	0.0076	0.0089	0.0073
2	13:45:19	99.0%	0.0092	99.1%	-0.0092	0.0211	0.0157	0.0092	0.0079
3	13:45:56	98.3%	0.0093	96.6%	0.0025	0.0131	0.0171	0.0187	0.0238
x		99.1%	0.0083	98.4%	0.0019	0.0162	0.0134	0.0123	0.0130
σ		0.8%	0.0016	1.6%	0.0107	0.0043	0.0051	0.0056	0.0094
%RSD		0.9	19.1081	1.6	574.8117	26.2100	38.1735	45.3779	71.9169

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	-0.0133	0.0043	96.9%	-0.0960	0.1204	-0.1028	-0.2724	98.7%
2	13:45:19	0.0217	0.0237	98.5%	0.0864	-0.0562	-0.0657	0.1947	99.3%
3	13:45:56	-0.0259	-0.0173	97.9%	-0.0730	-0.0021	-0.0763	-0.3099	99.0%
x		-0.0059	0.0035	97.7%	-0.0275	0.0207	-0.0816	-0.1292	99.0%
σ		0.0247	0.0205	0.8%	0.0993	0.0905	0.0191	0.2811	0.3%
%RSD		421.2734	578.2496	0.8	360.6172	437.2982	23.4582	217.6102	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	97.7%	0.0147	0.0160	98.0%	0.0098	0.0065	0.0058
2	13:45:19	99.5%	0.0153	0.0220	100.3%	0.0112	0.0108	0.0093
3	13:45:56	99.4%	0.0215	0.0214	101.3%	0.0077	0.0154	0.0091
x		98.9%	0.0172	0.0198	99.8%	0.0096	0.0109	0.0081
σ		1.0%	0.0038	0.0033	1.7%	0.0017	0.0044	0.0020
%RSD		1.0	21.8507	16.7311	1.7	18.1065	40.5944	24.5837

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	103.7%	0.0003	98.8%	0.0889	0.1072	0.2164	0.2181	2.4863
2	13:49:11	101.8%	0.0034	95.3%	0.0803	0.0691	0.2130	0.2280	2.4779
3	13:49:48	97.9%	0.0038	93.9%	0.0778	0.0921	0.2088	0.2014	2.4588
x		101.1%	0.0025	96.0%	0.0823	0.0895	0.2127	0.2159	2.4744
σ		3.0%	0.0019	2.5%	0.0058	0.0192	0.0038	0.0135	0.0141
%RSD		2.9	75.1372	2.6	7.0419	21.4774	1.7907	6.2367	0.5702

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	2.3237	2.3520	95.8%	-0.1079	2.1956	-0.1327	-0.1158	96.7%
2	13:49:11	2.2439	2.3731	95.2%	-0.0226	1.8031	-0.1323	-0.0868	96.8%
3	13:49:48	2.3458	2.3726	96.2%	-0.0453	1.9041	-0.0042	-0.0369	97.0%
x		2.3045	2.3659	95.7%	-0.0586	1.9676	-0.0897	-0.0799	96.9%
σ		0.0536	0.0121	0.5%	0.0442	0.2039	0.0741	0.0399	0.1%
%RSD		2.3260	0.5106	0.5	75.4141	10.3604	82.5619	49.9653	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	96.4%	0.0024	0.0082	97.3%	0.0185	0.0170	0.0167
2	13:49:11	97.5%	0.0145	0.0169	99.9%	0.0159	0.0195	0.0172
3	13:49:48	96.8%	0.0089	0.0126	99.7%	0.0171	0.0149	0.0156
x		96.9%	0.0086	0.0126	99.0%	0.0172	0.0171	0.0165
σ		0.6%	0.0060	0.0044	1.4%	0.0013	0.0023	0.0008
%RSD		0.6	69.9296	34.5970	1.4	7.5594	13.2104	4.8907

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	99.2%	0.0066	95.9%	0.0715	0.0592	0.2383	0.2227	0.7695
2	13:52:53	97.4%	0.0086	93.6%	0.0664	0.0850	0.2498	0.2235	0.8533
3	13:53:30	96.2%	0.0071	91.9%	0.0567	0.0650	0.2336	0.2272	0.8118
x		97.6%	0.0074	93.8%	0.0649	0.0697	0.2406	0.2245	0.8115
σ		1.6%	0.0010	2.0%	0.0075	0.0135	0.0083	0.0024	0.0419
%RSD		1.6	14.1099	2.1	11.5789	19.4325	3.4545	1.0820	5.1579

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	0.8830	0.8188	95.7%	-0.0446	1.7181	-0.3807	-0.1660	95.7%
2	13:52:53	0.8312	0.8032	95.6%	0.0293	1.8337	0.0318	0.0230	97.3%
3	13:53:30	0.7752	0.7330	94.3%	0.0521	1.9053	-0.0592	0.1821	95.9%
x		0.8298	0.7850	95.2%	0.0122	1.8190	-0.1360	0.0130	96.3%
σ		0.0539	0.0457	0.8%	0.0506	0.0944	0.2167	0.1743	0.9%
%RSD		6.4968	5.8228	0.8	412.6956	5.1917	159.3228	1335.8151	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	95.1%	0.0020	-0.0004	96.8%	0.0152	0.0218	0.0167
2	13:52:53	96.4%	0.0029	0.0009	98.4%	0.0194	0.0162	0.0168
3	13:53:30	96.1%	-0.0003	0.0036	98.2%	0.0163	0.0206	0.0164
x		95.9%	0.0015	0.0014	97.8%	0.0170	0.0196	0.0166
σ		0.7%	0.0017	0.0021	0.9%	0.0022	0.0029	0.0002
%RSD		0.7	109.9564	151.1583	0.9	12.8493	14.9866	1.3734

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	105.1%	0.0027	98.4%	0.0568	0.0272	0.0975	0.1110	0.8500
2	13:56:34	100.1%	0.0019	96.1%	0.0697	0.0428	0.0974	0.1062	0.7501
3	13:57:11	98.5%	0.0024	97.2%	0.0751	0.0768	0.1096	0.0910	0.7711
x		101.3%	0.0023	97.2%	0.0672	0.0489	0.1015	0.1028	0.7904
σ		3.4%	0.0004	1.1%	0.0094	0.0254	0.0070	0.0104	0.0526
%RSD		3.4	17.8069	1.2	14.0002	51.8746	6.9108	10.1564	6.6610
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	0.8154	0.7149	94.4%	-0.0029	1.8903	-0.1729	0.0232	95.8%
2	13:56:34	0.6830	0.6675	95.8%	-0.1513	2.0905	-0.2512	-0.3247	96.2%
3	13:57:11	0.7910	0.6553	95.3%	-0.0626	1.9548	-0.0321	-0.0864	95.7%
x		0.7631	0.6792	95.2%	-0.0723	1.9786	-0.1521	-0.1293	95.9%
σ		0.0705	0.0314	0.7%	0.0746	0.1022	0.1110	0.1779	0.3%
%RSD		9.2341	4.6303	0.7	103.2671	5.1649	72.9896	137.5526	0.3
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:55:58	94.7%	0.0008	-0.0034	95.6%	0.0340	0.0340	0.0341	
2	13:56:34	95.7%	0.0003	0.0008	97.5%	0.0356	0.0359	0.0327	
3	13:57:11	95.6%	-0.0043	0.0024	98.0%	0.0295	0.0284	0.0310	
x		95.3%	-0.0011	-0.0001	97.0%	0.0330	0.0328	0.0326	
σ		0.5%	0.0028	0.0030	1.2%	0.0032	0.0039	0.0015	
%RSD		0.6	257.8440	5433.1638	1.3	9.5936	11.7821	4.7405	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	108.2%	0.0098	98.1%	0.0672	0.0691	0.1303	0.1244	1.2645
2	14:00:13	99.6%	0.0044	96.7%	0.0595	0.0767	0.1134	0.1096	1.2753
3	14:00:50	97.9%	0.0068	94.9%	0.0752	0.0875	0.1319	0.1077	1.2561
x		101.9%	0.0070	96.6%	0.0673	0.0777	0.1252	0.1139	1.2653
σ		5.5%	0.0027	1.6%	0.0078	0.0093	0.0102	0.0091	0.0096
%RSD		5.4	38.6144	1.7	11.6520	11.9063	8.1837	8.0315	0.7572
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	1.1837	1.2131	95.6%	-0.0157	1.9058	-0.4390	-0.0971	96.1%
2	14:00:13	1.2721	1.1492	96.2%	0.0581	1.5030	0.0306	-0.1451	96.8%
3	14:00:50	1.1378	1.2129	94.7%	0.0235	1.8931	-0.2047	0.0630	96.8%
x		1.1979	1.1917	95.5%	0.0219	1.7673	-0.2044	-0.0597	96.6%
σ		0.0683	0.0369	0.8%	0.0369	0.2290	0.2348	0.1090	0.4%
%RSD		5.7021	3.0931	0.8	168.1549	12.9579	114.8950	182.3737	0.4
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:59:36	94.6%	-0.0013	-0.0010	96.0%	0.0322	0.0323	0.0330	
2	14:00:13	95.4%	-0.0025	-0.0022	97.7%	0.0330	0.0332	0.0329	
3	14:00:50	96.5%	0.0009	-0.0004	97.6%	0.0337	0.0356	0.0313	
x		95.5%	-0.0010	-0.0012	97.1%	0.0330	0.0337	0.0324	
σ		0.9%	0.0017	0.0009	0.9%	0.0007	0.0017	0.0010	
%RSD		1.0	176.6463	76.7616	0.9	2.2075	5.0381	2.9697	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	104.5%	0.0108	95.1%	0.1194	0.1402	0.2111	0.2064	1.7380
2	14:03:54	98.5%	0.0046	95.8%	0.1303	0.1311	0.2088	0.2136	1.7289
3	14:04:30	100.5%	0.0077	93.4%	0.1323	0.0981	0.2321	0.2024	1.7849
x		101.2%	0.0077	94.8%	0.1273	0.1231	0.2173	0.2075	1.7506
σ		3.1%	0.0031	1.2%	0.0069	0.0221	0.0129	0.0057	0.0301
%RSD		3.0	40.6853	1.3	5.4438	17.9721	5.9172	2.7237	1.7185

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	1.8054	1.6954	95.7%	0.0497	1.8817	-0.1014	0.0409	95.3%
2	14:03:54	1.6991	1.8204	95.6%	0.0979	1.7309	-0.3085	0.2311	96.3%
3	14:04:30	1.8083	1.6960	96.2%	-0.1613	2.3790	-0.1119	-0.1457	95.9%
x		1.7710	1.7373	95.8%	-0.0046	1.9972	-0.1739	0.0421	95.9%
σ		0.0622	0.0720	0.3%	0.1379	0.3392	0.1166	0.1884	0.5%
%RSD		3.5137	4.1421	0.3	3018.6515	16.9816	67.0601	447.9371	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	94.2%	0.0037	-0.0036	96.1%	0.0885	0.0774	0.0858
2	14:03:54	96.2%	0.0025	0.0006	98.3%	0.0851	0.0835	0.0830
3	14:04:30	96.4%	0.0011	-0.0010	98.3%	0.0926	0.0857	0.0863
x		95.6%	0.0024	-0.0013	97.6%	0.0887	0.0822	0.0850
σ		1.2%	0.0013	0.0021	1.3%	0.0038	0.0043	0.0018
%RSD		1.3	52.7622	160.0935	1.3	4.2331	5.1992	2.0749

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	103.7%	0.0020	97.7%	0.0783	0.1060	0.0630	0.0625	1.2312
2	14:07:40	97.5%	0.0004	93.4%	0.0808	0.0539	0.0687	0.0647	1.2511
3	14:08:17	98.9%	0.0003	94.7%	0.0825	0.0568	0.0729	0.0631	1.3434
x		100.0%	0.0009	95.3%	0.0806	0.0722	0.0682	0.0634	1.2752
σ		3.2%	0.0010	2.2%	0.0021	0.0293	0.0050	0.0012	0.0598
%RSD		3.2	109.3727	2.3	2.6230	40.5345	7.2790	1.8416	4.6911

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	1.1812	1.1795	95.9%	0.0003	2.2113	-0.1459	0.1625	95.8%
2	14:07:40	1.3525	1.1847	94.9%	-0.0506	1.9848	-0.2805	-0.0069	96.7%
3	14:08:17	1.1885	1.2042	95.8%	0.0713	1.7641	-0.3432	0.1212	97.1%
x		1.2407	1.1895	95.5%	0.0070	1.9867	-0.2565	0.0923	96.5%
σ		0.0968	0.0130	0.6%	0.0612	0.2236	0.1008	0.0883	0.7%
%RSD		7.8036	1.0915	0.6	874.0161	11.2546	39.2927	95.6913	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	95.4%	-0.0040	-0.0048	95.6%	0.0141	0.0158	0.0136
2	14:07:40	96.4%	-0.0065	-0.0066	99.0%	0.0170	0.0125	0.0142
3	14:08:17	95.7%	-0.0026	-0.0049	98.7%	0.0150	0.0149	0.0140
x		95.8%	-0.0044	-0.0054	97.8%	0.0154	0.0144	0.0139
σ		0.5%	0.0020	0.0010	1.8%	0.0015	0.0017	0.0003
%RSD		0.5	45.7093	19.0705	1.9	9.8077	11.5867	2.1741

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	95.2%	0.0027	96.1%	0.1303	0.1453	0.1095	0.1068	0.4891
2	14:11:13	99.7%	0.0023	93.2%	0.1592	0.1649	0.1256	0.0987	0.4937
3	14:11:49	93.5%	0.0025	93.5%	0.1477	0.1328	0.1085	0.1162	0.5063
x		96.1%	0.0025	94.3%	0.1457	0.1477	0.1145	0.1072	0.4964
σ		3.2%	0.0002	1.6%	0.0145	0.0162	0.0096	0.0088	0.0089
%RSD		3.4	7.8230	1.7	9.9584	10.9394	8.3850	8.1675	1.7960

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	0.5249	0.4575	95.2%	0.0704	1.7255	-0.2164	-0.0672	95.8%
2	14:11:13	0.5409	0.4395	96.3%	0.0956	1.9053	-0.1627	0.1605	96.6%
3	14:11:49	0.5638	0.3880	95.5%	-0.0047	2.0711	-0.1985	-0.0856	96.1%
x		0.5432	0.4283	95.7%	0.0538	1.9007	-0.1926	0.0026	96.2%
σ		0.0195	0.0361	0.5%	0.0521	0.1728	0.0274	0.1371	0.4%
%RSD		3.5978	8.4249	0.6	96.9549	9.0939	14.2074	5290.3657	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	94.8%	-0.0063	-0.0068	97.1%	0.0085	0.0116	0.0097
2	14:11:13	96.4%	-0.0055	-0.0034	100.0%	0.0110	0.0126	0.0110
3	14:11:49	96.4%	-0.0065	-0.0060	100.3%	0.0094	0.0098	0.0090
x		95.9%	-0.0061	-0.0054	99.1%	0.0097	0.0113	0.0099
σ		0.9%	0.0005	0.0018	1.7%	0.0013	0.0014	0.0011
%RSD		0.9	8.7059	32.9320	1.7	13.1644	12.5821	10.7389

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	99.1%	0.0037	94.5%	0.2330	0.2037	0.2100	0.2283	1.0785
2	14:14:53	93.7%	0.0056	93.7%	0.2201	0.2079	0.2288	0.2036	1.1158
3	14:15:30	94.7%	0.0068	91.7%	0.2319	0.2026	0.2311	0.2194	1.1516
x		95.8%	0.0053	93.3%	0.2283	0.2047	0.2233	0.2171	1.1153
σ		2.9%	0.0016	1.4%	0.0072	0.0028	0.0116	0.0125	0.0365
%RSD		3.0	29.6000	1.5	3.1357	1.3836	5.1805	5.7466	3.2764

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	0.9382	1.1112	94.7%	-0.0584	2.0225	-0.0253	-0.1979	95.4%
2	14:14:53	1.0840	1.0958	94.7%	-0.0112	2.0443	-0.1775	-0.2476	96.5%
3	14:15:30	0.9445	1.0518	94.5%	0.0329	1.8158	-0.1423	0.0327	96.7%
x		0.9889	1.0863	94.6%	-0.0122	1.9609	-0.1150	-0.1376	96.2%
σ		0.0824	0.0309	0.1%	0.0457	0.1261	0.0796	0.1495	0.7%
%RSD		8.3337	2.8413	0.1	373.7535	6.4302	69.2326	108.6710	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	95.4%	-0.0084	-0.0065	97.1%	0.0263	0.0225	0.0234
2	14:14:53	96.5%	-0.0055	-0.0037	98.9%	0.0285	0.0299	0.0285
3	14:15:30	96.8%	-0.0081	-0.0041	100.0%	0.0272	0.0207	0.0247
x		96.2%	-0.0073	-0.0048	98.7%	0.0273	0.0244	0.0255
σ		0.7%	0.0016	0.0015	1.5%	0.0011	0.0049	0.0026
%RSD		0.8	21.7863	31.7039	1.5	3.8975	20.0326	10.3483

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	98.5%	0.0037	95.6%	0.0975	0.1161	0.0832	0.0928	0.3106
2	14:18:28	95.9%	0.0014	93.1%	0.0974	0.0783	0.0709	0.0724	0.3306
3	14:19:05	98.3%	0.0012	93.9%	0.1066	0.0695	0.0749	0.0721	0.3600
x		97.6%	0.0021	94.2%	0.1005	0.0880	0.0763	0.0791	0.3337
σ		1.4%	0.0014	1.3%	0.0053	0.0248	0.0063	0.0119	0.0248
%RSD		1.5	67.7052	1.4	5.2257	28.1370	8.2119	15.0095	7.4326

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	0.4035	0.3121	94.6%	0.0393	2.0771	0.0549	0.1540	95.8%
2	14:18:28	0.3922	0.3426	94.8%	0.1663	1.5294	-0.0809	0.0335	96.1%
3	14:19:05	0.3501	0.3209	95.7%	0.0884	1.6205	-0.0148	-0.1474	96.6%
x		0.3819	0.3252	95.0%	0.0980	1.7424	-0.0136	0.0134	96.2%
σ		0.0281	0.0157	0.6%	0.0641	0.2935	0.0679	0.1517	0.4%
%RSD		7.3646	4.8263	0.6	65.3836	16.8444	498.4866	1134.1936	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	94.4%	-0.0057	-0.0077	97.1%	0.0097	0.0092	0.0090
2	14:18:28	96.3%	-0.0067	-0.0112	98.5%	0.0146	0.0134	0.0110
3	14:19:05	96.5%	-0.0070	-0.0080	99.3%	0.0107	0.0125	0.0112
x		95.7%	-0.0065	-0.0090	98.3%	0.0117	0.0117	0.0104
σ		1.1%	0.0007	0.0020	1.1%	0.0026	0.0022	0.0012
%RSD		1.2	10.7266	21.8614	1.1	22.5106	18.6742	11.9651

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	103.4%	24.6848	97.2%	25.8973	25.3909	25.4026	25.9189	25.6806
2	14:22:00	101.0%	24.8784	97.4%	25.4249	25.1996	25.0559	24.9735	25.4780
3	14:22:37	102.0%	24.5257	98.1%	25.2934	24.9972	24.9115	25.4667	25.2623
x		102.1%	24.6963	97.5%	25.5385	25.1959	25.1233	25.4531	25.4736
σ		1.2%	0.1766	0.5%	0.3176	0.1968	0.2524	0.4729	0.2092
%RSD		1.2	0.7152	0.5	1.2435	0.7813	1.0048	1.8578	0.8212

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	24.8011	25.5555	97.1%	25.6419	24.9977	25.1826	25.8178	97.5%
2	14:22:00	25.1232	24.8745	98.6%	25.2047	24.8743	24.5652	25.3155	97.9%
3	14:22:37	24.5761	25.0287	98.5%	25.1401	25.4988	24.7982	25.4012	99.1%
x		24.8335	25.1529	98.1%	25.3289	25.1236	24.8487	25.5115	98.2%
σ		0.2750	0.3571	0.9%	0.2729	0.3307	0.3118	0.2687	0.8%
%RSD		1.1072	1.4198	0.9	1.0776	1.3164	1.2546	1.0534	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	96.9%	24.9602	24.7514	97.8%	25.1074	25.1317	25.1583
2	14:22:00	98.1%	25.0018	24.8196	100.0%	25.1121	24.9996	24.9430
3	14:22:37	98.8%	24.7085	24.7473	99.6%	25.2657	25.0152	25.2027
x		97.9%	24.8902	24.7728	99.1%	25.1617	25.0488	25.1013
σ		1.0%	0.1587	0.0406	1.1%	0.0901	0.0722	0.1389
%RSD		1.0	0.6377	0.1639	1.1	0.3580	0.2882	0.5533

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	106.1%	0.0097	100.6%	0.0182	0.0061	0.0157	0.0200	0.0268
2	14:31:08	101.9%	0.0186	99.4%	0.0005	0.0468	0.0168	0.0166	0.0232
3	14:31:45	103.7%	0.0105	100.4%	0.0076	0.0087	0.0105	0.0097	0.0095
x		103.9%	0.0129	100.1%	0.0088	0.0205	0.0143	0.0154	0.0198
σ		2.1%	0.0049	0.7%	0.0089	0.0228	0.0034	0.0052	0.0091
%RSD		2.0	38.1260	0.7	102.0424	110.8877	23.3548	33.7771	45.8437

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	0.0030	0.0204	98.8%	-0.0503	0.1655	-0.2904	-0.1131	98.3%
2	14:31:08	-0.0156	0.0170	99.8%	0.0251	0.0958	-0.1217	0.1446	99.4%
3	14:31:45	0.0033	0.0026	98.6%	-0.0651	-0.0046	-0.0427	-0.2981	99.9%
x		-0.0031	0.0133	99.0%	-0.0301	0.0856	-0.1516	-0.0889	99.2%
σ		0.0108	0.0095	0.6%	0.0484	0.0855	0.1265	0.2223	0.8%
%RSD		347.0159	71.1854	0.6	160.6724	99.9414	83.4676	250.2364	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	97.8%	0.0092	0.0069	96.3%	0.0130	0.0135	0.0129
2	14:31:08	99.2%	0.0157	0.0168	98.8%	0.0110	0.0151	0.0133
3	14:31:45	98.9%	0.0113	0.0075	99.0%	0.0145	0.0138	0.0134
x		98.6%	0.0121	0.0104	98.0%	0.0128	0.0142	0.0132
σ		0.7%	0.0033	0.0055	1.5%	0.0018	0.0009	0.0003
%RSD		0.8	27.4597	53.1143	1.5	13.8869	6.0311	2.0834

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	102.4%	0.0070	99.8%	0.0039	0.0144	0.0147	0.0137	0.0342
2	14:34:56	103.5%	0.0113	99.4%	-0.0019	0.0361	0.0130	0.0184	0.0258
3	14:35:33	106.5%	0.0081	98.4%	0.0119	0.0162	0.0123	0.0201	0.0002
x		104.2%	0.0088	99.2%	0.0046	0.0222	0.0133	0.0174	0.0201
σ		2.1%	0.0023	0.7%	0.0069	0.0120	0.0012	0.0033	0.0177
%RSD		2.0	25.6081	0.7	150.4790	54.1205	9.0138	19.0341	88.3850

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	0.0095	0.0158	98.4%	-0.0281	-0.0693	-0.0859	-0.1826	99.4%
2	14:34:56	-0.0218	-0.0013	100.1%	-0.0644	0.0806	-0.1019	-0.1896	100.9%
3	14:35:33	-0.0163	0.0337	101.0%	-0.0151	0.0901	-0.2698	0.0108	101.3%
x		-0.0095	0.0160	99.8%	-0.0359	0.0338	-0.1526	-0.1205	100.5%
σ		0.0167	0.0175	1.3%	0.0256	0.0894	0.1019	0.1138	1.0%
%RSD		175.4036	109.2396	1.3	71.3260	264.6664	66.7625	94.4279	1.0

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	99.0%	0.0017	0.0027	97.3%	0.0080	0.0053	0.0061
2	14:34:56	100.4%	0.0048	0.0091	99.2%	0.0076	0.0084	0.0084
3	14:35:33	99.9%	0.0044	0.0019	99.4%	0.0084	0.0081	0.0070
x		99.8%	0.0036	0.0045	98.7%	0.0080	0.0073	0.0072
σ		0.7%	0.0017	0.0039	1.2%	0.0004	0.0017	0.0012
%RSD		0.7	47.1398	86.4013	1.2	5.4158	23.6269	16.4987

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	105.8%	0.0225	100.4%	0.1481	0.1856	0.0977	0.0962	0.5535
2	14:38:35	101.6%	0.0261	99.8%	0.1763	0.1981	0.1051	0.0887	0.5176
3	14:39:11	102.5%	0.0156	98.5%	0.1670	0.1653	0.0999	0.0853	0.4696
x		103.3%	0.0214	99.6%	0.1638	0.1830	0.1009	0.0901	0.5136
σ		2.2%	0.0053	1.0%	0.0144	0.0166	0.0038	0.0056	0.0421
%RSD		2.1	24.9043	1.0	8.7793	9.0511	3.7360	6.1868	8.1904

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	0.3758	0.4672	98.7%	0.4774	1.0626	1.2671	0.9370	100.4%
2	14:38:35	0.4632	0.4731	99.4%	0.5283	0.8462	0.9208	0.8838	101.1%
3	14:39:11	0.5736	0.5037	99.1%	0.5500	1.0556	1.1144	1.2166	101.2%
x		0.4709	0.4813	99.1%	0.5186	0.9882	1.1007	1.0125	100.9%
σ		0.0991	0.0196	0.3%	0.0373	0.1230	0.1735	0.1788	0.4%
%RSD		21.0487	4.0760	0.3	7.1837	12.4433	15.7658	17.6574	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	98.7%	0.0496	0.0418	98.3%	0.0181	0.0173	0.0198
2	14:38:35	101.1%	0.0511	0.0486	99.6%	0.0215	0.0205	0.0197
3	14:39:11	100.9%	0.0480	0.0486	100.3%	0.0242	0.0199	0.0217
x		100.2%	0.0496	0.0463	99.4%	0.0213	0.0192	0.0204
σ		1.4%	0.0015	0.0039	1.1%	0.0031	0.0017	0.0011
%RSD		1.3	3.1022	8.4938	1.1	14.5127	8.9172	5.5793

KQ1608449-01 8/3/2016 2:41:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	103.5%	-0.0025	98.9%	-0.0268	0.0147	0.0041	0.0037	0.0043
2	14:42:12	107.0%	0.0009	98.4%	-0.0224	-0.0291	0.0025	0.0039	0.0756
3	14:42:49	99.2%	0.0028	96.4%	-0.0212	-0.0005	0.0083	0.0096	0.0604
x		103.2%	0.0004	97.9%	-0.0235	-0.0050	0.0050	0.0057	0.0467
σ		3.9%	0.0027	1.3%	0.0030	0.0222	0.0030	0.0033	0.0376
%RSD		3.8	656.2734	1.4	12.6680	446.8010	59.7810	58.3608	80.3875

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	0.1760	0.0226	97.1%	-0.0807	1.9501	0.2267	-0.0669	98.0%
2	14:42:12	0.1290	0.0759	99.3%	0.0119	1.8419	0.0796	0.0498	98.5%
3	14:42:49	0.0715	0.0588	97.9%	-0.0292	1.6712	-0.0548	-0.1614	97.8%
x		0.1255	0.0525	98.1%	-0.0327	1.8211	0.0838	-0.0595	98.1%
σ		0.0523	0.0272	1.1%	0.0464	0.1406	0.1408	0.1058	0.4%
%RSD		41.7013	51.8588	1.1	141.9717	7.7217	167.9589	177.8220	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	96.9%	-0.0055	-0.0050	96.3%	0.0075	0.0086	0.0045
2	14:42:12	98.1%	-0.0075	-0.0062	98.6%	0.0090	0.0065	0.0091
3	14:42:49	97.9%	-0.0049	-0.0033	99.1%	0.0065	0.0128	0.0077
x		97.6%	-0.0060	-0.0048	98.0%	0.0076	0.0093	0.0071
σ		0.6%	0.0013	0.0015	1.5%	0.0013	0.0032	0.0024
%RSD		0.7	22.1856	30.6343	1.5	16.7291	34.6926	33.1868

8/4/16

DNR Zn LCW out of Control

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	104.6%	2.5384	99.9%	25.5074	25.4862	12.9593	12.7608	34.8915
2	14:45:45	102.0%	2.5837	99.0%	25.0479	24.8492	12.6384	12.5448	35.4127
3	14:46:21	101.3%	2.5224	97.8%	25.7277	25.1693	12.9701	13.0005	35.9762
x		102.6%	2.5482	98.9%	25.4277	25.1682	12.8559	12.7687	35.4268
σ		1.7%	0.0318	1.1%	0.3469	0.3185	0.1885	0.2280	0.5425
%RSD		1.7	1.2472	1.1	1.3641	1.2655	1.4659	1.7854	1.5312

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	38.3469	37.0963	99.2%	50.6793	50.2530	50.1731	50.5431	99.9%
2	14:45:45	37.9095	37.4868	100.1%	49.4681	51.3486	49.0890	49.6194	98.9%
3	14:46:21	39.3934	37.7582	98.1%	50.6486	51.0318	50.9848	50.5353	99.6%
x		38.5499	37.4471	99.1%	50.2653	50.8778	50.0823	50.2326	99.5%
σ		0.7625	0.3327	1.0%	0.6906	0.5638	0.9511	0.5310	0.5%
%RSD		1.9780	0.8886	1.0	1.3739	1.1082	1.8991	1.0571	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	97.4%	50.5366	50.1233	98.0%	49.5263	50.4561	50.1429
2	14:45:45	99.2%	49.7170	49.7333	99.5%	49.9081	51.4302	50.9050
3	14:46:21	99.8%	49.8135	49.5506	99.9%	49.9816	51.2589	50.6962
x		98.8%	50.0224	49.8024	99.1%	49.8053	51.0484	50.5814
σ		1.2%	0.4479	0.2925	1.0%	0.2444	0.5200	0.3938
%RSD		1.2	0.8954	0.5874	1.0	0.4908	1.0187	0.7786

KQ1608449-03 8/3/2016 2:50:16 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	106.7%	2.4560	97.8%	25.8863	25.2367	12.6671	12.9210	25.4538
2	14:50:52	97.8%	2.5326	96.8%	25.4817	25.1756	12.6830	12.7855	25.5581
3	14:51:29	98.6%	2.4679	97.3%	25.4445	25.1684	12.6283	12.4873	25.2749
x		101.0%	2.4855	97.3%	25.6042	25.1936	12.6594	12.7313	25.4273
σ		4.9%	0.0412	0.5%	0.2451	0.0375	0.0282	0.2219	0.1410
%RSD		4.8	1.6584	0.5	0.9571	0.1489	0.2224	1.7428	0.5544

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	30.0122	27.7241	98.0%	51.3104	52.0132	50.2698	49.5731	98.4%
2	14:50:52	30.0582	27.9650	97.4%	51.1673	53.1600	50.0804	50.8574	99.2%
3	14:51:29	29.3583	27.8699	98.0%	50.8767	52.7403	51.4413	50.2583	97.9%
x		29.8096	27.8530	97.8%	51.1181	52.6378	50.5972	50.2296	98.5%
σ		0.3915	0.1214	0.3%	0.2210	0.5803	0.7371	0.6426	0.7%
%RSD		1.3134	0.4357	0.3	0.4323	1.1024	1.4569	1.2793	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	96.6%	51.0810	50.5821	97.9%	50.2172	51.8771	51.3157
2	14:50:52	98.1%	50.9856	50.8394	99.2%	50.7402	52.1238	51.8103
3	14:51:29	98.0%	50.8107	50.7637	99.9%	50.8752	52.6546	51.8684
x		97.6%	50.9591	50.7284	99.0%	50.6109	52.2185	51.6648
σ		0.8%	0.1371	0.1322	1.0%	0.3475	0.3973	0.3037
%RSD		0.9	0.2690	0.2606	1.1	0.6866	0.7609	0.5879

K1608011-007 8/3/2016 2:55:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	106.3%	0.0026	97.4%	0.1534	0.1293	0.1154	0.1164	1.2748
2	14:56:17	101.2%	0.0026	98.0%	0.1289	0.1411	0.1238	0.1147	1.2274
3	14:56:53	102.2%	0.0025	96.1%	0.1347	0.1180	0.1106	0.1273	1.2581
x		103.2%	0.0026	97.2%	0.1390	0.1295	0.1166	0.1195	1.2534
σ		2.7%	0.0000	1.0%	0.0128	0.0115	0.0067	0.0069	0.0241
%RSD		2.6	1.4056	1.0	9.2171	8.9164	5.7353	5.7563	1.9188

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	1.1626	1.1121	97.1%	0.0692	1.8763	-0.2635	0.2386	96.6%
2	14:56:17	1.2155	1.2356	96.6%	0.1086	1.9315	0.2903	0.3660	98.1%
3	14:56:53	1.3858	1.1323	97.1%	0.0364	1.8666	-0.4020	0.2357	98.8%
x		1.2546	1.1600	96.9%	0.0714	1.8915	-0.1251	0.2801	97.9%
σ		0.1166	0.0663	0.3%	0.0361	0.0350	0.3663	0.0744	1.1%
%RSD		9.2972	5.7112	0.3	50.6259	1.8512	292.8757	26.5530	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	95.2%	0.0097	0.0102	96.2%	0.0296	0.0314	0.0336
2	14:56:17	97.6%	0.0120	0.0131	98.5%	0.0372	0.0375	0.0365
3	14:56:53	98.4%	0.0160	0.0132	98.0%	0.0453	0.0385	0.0394
x		97.1%	0.0126	0.0122	97.5%	0.0374	0.0358	0.0365
σ		1.7%	0.0032	0.0017	1.2%	0.0079	0.0038	0.0029
%RSD		1.7	25.4551	13.7139	1.2	21.0107	10.7407	7.9786

K1608011-007L 8/3/2016 2:59:17 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	102.6%	0.0017	98.5%	0.0018	0.0182	0.0240	0.0290	0.2348
2	14:59:53	94.6%	0.0019	95.9%	0.0184	0.0481	0.0307	0.0135	0.2514
3	15:00:29	98.5%	-0.0018	96.1%	0.0087	0.0153	0.0208	0.0253	0.2359
x		98.6%	0.0006	96.8%	0.0096	0.0272	0.0251	0.0226	0.2407
σ		4.0%	0.0021	1.5%	0.0084	0.0182	0.0051	0.0081	0.0093
%RSD		4.0	368.5036	1.5	86.9956	66.7941	20.1807	35.7776	3.8612

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	0.2645	0.2526	96.2%	0.0163	0.5377	0.1869	0.1394	98.0%
2	14:59:53	0.2482	0.2585	98.0%	0.0014	0.3789	0.1310	-0.0479	98.6%
3	15:00:29	0.2777	0.2596	96.4%	-0.0290	0.3223	0.0823	-0.2240	98.5%
x		0.2635	0.2569	96.9%	-0.0038	0.4130	0.1334	-0.0442	98.4%
σ		0.0148	0.0038	1.0%	0.0231	0.1117	0.0524	0.1817	0.3%
%RSD		5.6054	1.4659	1.0	613.2491	27.0406	39.2474	411.4784	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	97.5%	-0.0109	-0.0149	97.3%	0.0062	0.0058	0.0063
2	14:59:53	98.2%	-0.0117	-0.0140	98.7%	0.0087	0.0082	0.0065
3	15:00:29	98.3%	-0.0068	-0.0111	100.0%	0.0088	0.0076	0.0074
x		98.0%	-0.0098	-0.0133	98.7%	0.0079	0.0072	0.0067
σ		0.5%	0.0027	0.0020	1.3%	0.0015	0.0012	0.0006
%RSD		0.5	27.2225	14.9429	1.3	18.7627	17.2984	8.6277

K1608011-007A 8/3/2016 3:02:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	104.0%	21.0841	97.0%	21.8657	21.6656	21.8976	22.7613	23.1381
2	15:03:27	99.5%	21.2583	97.4%	21.5899	21.1094	21.3516	21.3418	22.4052
3	15:04:04	97.3%	20.7809	94.0%	21.8576	22.0342	21.8697	22.3049	23.0866
x		100.3%	21.0411	96.1%	21.7711	21.6031	21.7063	22.1360	22.8767
σ		3.4%	0.2416	1.9%	0.1570	0.4656	0.3075	0.7247	0.4091
%RSD		3.4	1.1482	1.9	0.7210	2.1552	1.4167	3.2736	1.7881

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	22.6908	22.8828	96.2%	21.5424	23.2691	21.4486	20.2022	97.8%
2	15:03:27	22.0119	22.3463	97.6%	21.4800	23.4551	20.7177	20.9757	97.2%
3	15:04:04	22.6792	22.5721	95.7%	21.8317	22.1326	20.1640	21.1168	97.7%
x		22.4607	22.6004	96.5%	21.6181	22.9523	20.7768	20.7649	97.6%
σ		0.3887	0.2694	1.0%	0.1877	0.7159	0.6444	0.4924	0.3%
%RSD		1.7305	1.1919	1.0	0.8681	3.1192	3.1013	2.3711	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	98.1%	21.5526	21.4968	97.3%	21.5098	21.2928	21.4356
2	15:03:27	98.7%	21.7927	21.5765	99.6%	21.4689	21.4438	21.5211
3	15:04:04	98.4%	21.7961	21.6420	99.5%	21.5373	21.3620	21.5330
x		98.4%	21.7138	21.5718	98.8%	21.5053	21.3662	21.4966
σ		0.3%	0.1396	0.0727	1.3%	0.0345	0.0756	0.0531
%RSD		0.3	0.6430	0.3371	1.3	0.1602	0.3538	0.2471

K1608207-015 8/3/2016 3:06:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	100.9%	0.0043	95.4%	0.1810	0.1602	0.1479	0.1467	1.2657
2	15:07:28	98.3%	0.0029	96.4%	0.1754	0.1575	0.1425	0.1495	1.3052
3	15:08:04	97.3%	0.0142	96.8%	0.1714	0.1879	0.1461	0.1647	1.2784
x		98.8%	0.0071	96.2%	0.1759	0.1686	0.1455	0.1536	1.2831
σ		1.8%	0.0062	0.7%	0.0048	0.0168	0.0027	0.0097	0.0201
%RSD		1.9	86.4837	0.8	2.7413	9.9881	1.8610	6.3049	1.5703

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	1.2254	1.2172	95.2%	0.0589	1.9261	-0.0769	0.3208	96.5%
2	15:07:28	1.3036	1.1996	96.8%	-0.0027	2.0088	-0.1439	0.1591	98.2%
3	15:08:04	1.2007	1.0761	97.1%	0.0358	1.8064	-0.1342	0.0027	97.5%
x		1.2432	1.1643	96.3%	0.0307	1.9138	-0.1183	0.1609	97.4%
σ		0.0537	0.0769	1.0%	0.0311	0.1017	0.0362	0.1590	0.9%
%RSD		4.3214	6.6053	1.0	101.3181	5.3167	30.6327	98.8747	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	95.8%	-0.0010	0.0001	97.1%	0.0334	0.0345	0.0319
2	15:07:28	97.4%	0.0019	0.0066	98.7%	0.0319	0.0320	0.0347
3	15:08:04	97.5%	0.0160	0.0092	99.4%	0.0482	0.0531	0.0485
x		96.9%	0.0056	0.0053	98.4%	0.0378	0.0399	0.0384
σ		1.0%	0.0091	0.0047	1.2%	0.0090	0.0115	0.0089
%RSD		1.0	161.0468	88.4407	1.2	23.7618	28.9550	23.1407

K1608209-015 8/3/2016 3:10:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	99.9%	0.0002	97.7%	0.0513	0.0455	0.0709	0.0796	0.7691
2	15:11:03	97.9%	0.0068	95.0%	0.0661	0.0528	0.0937	0.0755	0.7749
3	15:11:38	97.8%	0.0025	96.3%	0.0495	0.0414	0.0793	0.0650	0.7587
x		98.5%	0.0032	96.3%	0.0556	0.0466	0.0813	0.0734	0.7642
σ		1.2%	0.0034	1.3%	0.0091	0.0058	0.0116	0.0075	0.0092
%RSD		1.2	106.3219	1.4	16.3658	12.4257	14.2082	10.2612	1.2068

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	0.9145	0.7674	96.0%	0.0143	2.0034	0.0450	0.2189	96.7%
2	15:11:03	0.7813	0.7692	96.1%	0.0345	1.8136	-0.0358	0.2003	96.6%
3	15:11:38	0.6904	0.7818	97.4%	-0.0508	1.8843	-0.1655	-0.1250	96.6%
x		0.7954	0.7728	96.5%	-0.0007	1.9004	-0.0521	0.0981	96.6%
σ		0.1127	0.0079	0.8%	0.0446	0.0959	0.1062	0.1934	0.1%
%RSD		14.1651	1.0160	0.8	6322.1316	5.0455	203.8613	197.1959	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	96.3%	-0.0062	-0.0076	96.6%	0.0169	0.0166	0.0159
2	15:11:03	96.8%	-0.0022	0.0005	98.7%	0.0168	0.0231	0.0192
3	15:11:38	96.8%	-0.0048	-0.0028	98.7%	0.0229	0.0185	0.0185
x		96.6%	-0.0044	-0.0033	98.0%	0.0189	0.0194	0.0179
σ		0.3%	0.0020	0.0041	1.2%	0.0035	0.0033	0.0018
%RSD		0.3	45.6438	124.5802	1.3	18.5656	17.1083	9.8436

K1608210-015 8/3/2016 3:14:03 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	101.7%	0.0034	94.3%	0.1444	0.1385	0.0779	0.0659	0.4126
2	15:14:40	98.7%	0.0003	95.3%	0.1518	0.1189	0.0723	0.0609	0.4139
3	15:15:16	98.2%	0.0008	93.3%	0.1439	0.1163	0.0699	0.0778	0.4227
x		99.6%	0.0015	94.3%	0.1467	0.1246	0.0734	0.0682	0.4264
σ		1.9%	0.0017	1.0%	0.0044	0.0121	0.0041	0.0087	0.0160
%RSD		1.9	113.9226	1.1	3.0200	9.7491	5.5900	12.7489	3.7439

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	0.5037	0.4309	94.9%	0.0078	1.7269	-0.0468	-0.1872	97.1%
2	15:14:40	0.4221	0.4553	96.0%	0.0245	1.9123	-0.1676	0.0430	96.0%
3	15:15:16	0.4868	0.4175	94.7%	0.0093	1.8659	0.2679	0.0534	97.0%
x		0.4709	0.4346	95.2%	0.0139	1.8350	0.0179	-0.0303	96.7%
σ		0.0431	0.0192	0.7%	0.0092	0.0964	0.2248	0.1360	0.6%
%RSD		9.1475	4.4117	0.8	66.7038	5.2554	1259.1868	449.6678	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	96.0%	-0.0072	-0.0089	96.6%	0.0194	0.0205	0.0194
2	15:14:40	96.8%	-0.0055	-0.0064	98.2%	0.0203	0.0217	0.0190
3	15:15:16	96.4%	-0.0068	-0.0070	98.9%	0.0172	0.0220	0.0182
x		96.4%	-0.0065	-0.0074	97.9%	0.0190	0.0214	0.0189
σ		0.4%	0.0009	0.0013	1.2%	0.0016	0.0008	0.0006
%RSD		0.4	13.2764	17.7479	1.2	8.3234	3.5657	3.3810

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	102.6%	24.9203	98.1%	25.6534	25.1509	25.3747	25.8305	25.9470
2	15:18:15	98.0%	24.6290	97.4%	25.4612	25.3587	25.6593	25.7221	25.6369
3	15:18:51	94.4%	25.4136	98.0%	25.1892	25.1400	24.7310	24.8971	25.0410
x		98.3%	24.9876	97.9%	25.4346	25.2165	25.2550	25.4832	25.5416
σ		4.1%	0.3966	0.4%	0.2333	0.1233	0.4756	0.5105	0.4605
%RSD		4.2	1.5873	0.4	0.9171	0.4889	1.8831	2.0033	1.8028

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	25.6209	25.0331	97.6%	25.4513	24.5401	24.6699	24.5473	98.3%
2	15:18:15	25.5059	25.2442	96.9%	24.6204	26.1055	25.0593	24.3395	99.6%
3	15:18:51	25.5154	25.1255	98.8%	24.9823	24.9418	24.9622	25.0573	99.6%
x		25.5474	25.1343	97.7%	25.0180	25.1958	24.8972	24.6480	99.2%
σ		0.0638	0.1058	1.0%	0.4166	0.8130	0.2027	0.3693	0.7%
%RSD		0.2498	0.4210	1.0	1.6651	3.2269	0.8141	1.4984	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	98.7%	24.6793	24.5092	99.0%	25.4580	25.1410	25.2942
2	15:18:15	99.2%	25.2342	24.9597	100.1%	25.3748	25.2297	25.3759
3	15:18:51	100.4%	25.0373	24.9185	101.0%	25.3920	25.4493	25.4656
x		99.4%	24.9836	24.7958	100.0%	25.4083	25.2733	25.3785
σ		0.9%	0.2813	0.2491	1.0%	0.0439	0.1587	0.0857
%RSD		0.9	1.1260	1.0046	1.0	0.1729	0.6280	0.3378

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	108.2%	0.0071	99.9%	0.0079	0.0410	0.0139	0.0080	-0.0094
2	15:27:36	102.9%	0.0159	100.0%	0.0015	0.0350	0.0193	0.0202	0.0293
3	15:28:13	99.3%	0.0133	99.5%	0.0167	0.0286	0.0199	0.0192	0.0118
x		103.5%	0.0121	99.8%	0.0087	0.0348	0.0177	0.0158	0.0106
σ		4.5%	0.0045	0.3%	0.0076	0.0062	0.0033	0.0068	0.0194
%RSD		4.3	37.5054	0.3	87.4039	17.7926	18.8768	42.8159	183.3938

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	0.0343	0.0190	97.9%	0.0184	0.1422	-0.0608	0.1570	99.4%
2	15:27:36	0.0758	0.0054	98.4%	-0.0513	0.1776	0.2733	-0.0750	101.2%
3	15:28:13	0.0264	0.0017	99.5%	-0.0090	0.0563	-0.2014	-0.0748	101.4%
x		0.0455	0.0087	98.6%	-0.0140	0.1254	0.0037	0.0024	100.6%
σ		0.0266	0.0091	0.9%	0.0351	0.0624	0.2438	0.1338	1.1%
%RSD		58.3615	104.6443	0.9	251.7587	49.7524	6596.4383	5548.1478	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	98.1%	0.0144	0.0143	96.5%	0.0107	0.0059	0.0078
2	15:27:36	99.9%	0.0209	0.0168	98.9%	0.0188	0.0184	0.0176
3	15:28:13	100.3%	0.0153	0.0189	99.4%	0.0120	0.0186	0.0143
x		99.4%	0.0169	0.0167	98.3%	0.0138	0.0143	0.0132
σ		1.2%	0.0035	0.0023	1.6%	0.0044	0.0073	0.0049
%RSD		1.2	20.8043	13.7617	1.6	31.5971	50.7832	37.3659

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	108.7%	0.0062	101.8%	-0.0018	0.0258	0.0109	0.0142	0.0230
2	15:31:19	104.4%	0.0116	100.9%	0.0060	-0.0072	0.0088	0.0117	0.0279
3	15:31:55	106.1%	0.0085	99.1%	0.0018	0.0171	0.0096	0.0093	0.0070
x		106.4%	0.0088	100.6%	0.0020	0.0119	0.0097	0.0118	0.0193
σ		2.1%	0.0027	1.3%	0.0039	0.0171	0.0010	0.0025	0.0109
%RSD		2.0	30.4824	1.3	193.1700	143.8878	10.7334	21.0180	56.5385

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	-0.0341	0.0007	100.4%	0.0466	0.0673	-0.0750	0.2006	100.2%
2	15:31:19	0.0014	0.0083	100.5%	-0.0643	0.1050	-0.1601	-0.1603	100.8%
3	15:31:55	-0.0162	0.0263	100.6%	0.0363	0.1040	0.0262	0.1709	101.2%
x		-0.0163	0.0118	100.5%	0.0062	0.0921	-0.0696	0.0704	100.7%
σ		0.0178	0.0132	0.1%	0.0613	0.0215	0.0932	0.2003	0.5%
%RSD		108.9689	111.8443	0.1	989.8106	23.3586	133.9037	284.5408	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	99.2%	0.0078	0.0030	97.2%	0.0090	0.0074	0.0076
2	15:31:19	99.9%	0.0071	-0.0004	99.3%	0.0100	0.0069	0.0079
3	15:31:55	100.1%	0.0048	0.0063	99.6%	0.0073	0.0109	0.0072
x		99.7%	0.0066	0.0030	98.7%	0.0088	0.0084	0.0076
σ		0.5%	0.0016	0.0033	1.3%	0.0014	0.0022	0.0004
%RSD		0.5	23.7421	111.7805	1.3	15.6539	26.0911	4.6858

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	103.0%	-0.0000	98.5%	-0.0214	0.0028	0.0304	0.0402	1.6206
2	15:34:52	100.4%	0.0014	98.4%	-0.0143	-0.0077	0.0401	0.0297	1.5946
3	15:35:28	98.2%	0.0012	96.4%	-0.0139	-0.0282	0.0363	0.0664	1.5833
x		100.5%	0.0009	97.8%	-0.0166	-0.0110	0.0356	0.0454	1.5995
σ		2.4%	0.0008	1.2%	0.0042	0.0157	0.0049	0.0189	0.0191
%RSD		2.4	89.5441	1.2	25.3399	142.5530	13.7154	41.5484	1.1969

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	1.5201	1.4835	97.6%	0.0298	1.7316	0.0148	0.1282	97.4%
2	15:34:52	1.7741	1.5529	97.7%	0.0474	1.5537	-0.5381	-0.0070	98.5%
3	15:35:28	1.6583	1.5407	97.3%	0.0058	1.8377	0.0001	0.0800	98.6%
x		1.6508	1.5257	97.5%	0.0276	1.7077	-0.1744	0.0670	98.2%
σ		0.1272	0.0370	0.2%	0.0208	0.1435	0.3151	0.0685	0.7%
%RSD		7.7034	2.4270	0.2	75.3796	8.4019	180.6745	102.2155	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	96.7%	0.0006	-0.0010	96.6%	0.0045	0.0041	0.0037
2	15:34:52	97.8%	0.0024	0.0036	98.4%	0.0045	0.0031	0.0039
3	15:35:28	98.5%	-0.0035	0.0015	99.2%	0.0056	0.0061	0.0048
x		97.7%	-0.0002	0.0013	98.0%	0.0048	0.0045	0.0041
σ		0.9%	0.0030	0.0023	1.3%	0.0006	0.0015	0.0006
%RSD		1.0	1708.4396	172.3995	1.4	12.8052	34.3843	14.4127

8/4/16

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	106.2%	2.4815	99.0%	24.8782	24.9328	12.3757	12.6020	25.2201
2	15:38:24	102.7%	2.4700	98.0%	25.1597	24.6731	12.4229	12.5285	24.9248
3	15:39:01	100.4%	2.5132	95.8%	24.9560	25.0916	12.3734	12.5413	24.8817
x		103.1%	2.4883	97.6%	24.9979	24.8992	12.3907	12.5573	25.0089
σ		2.9%	0.0224	1.7%	0.1454	0.2113	0.0279	0.0393	0.1842
%RSD		2.8	0.8986	1.7	0.5816	0.8485	0.2255	0.3127	0.7366

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	28.5358	27.7279	96.9%	50.0927	51.7695	49.7783	49.6564	98.6%
2	15:38:24	28.6691	27.0726	99.0%	50.2693	50.7710	49.6180	49.7230	99.4%
3	15:39:01	28.4961	27.1119	98.3%	49.8056	49.9465	48.5312	48.2904	99.4%
x		28.5670	27.3042	98.0%	50.0559	50.8290	49.3092	49.2233	99.1%
σ		0.0906	0.3675	1.1%	0.2341	0.9129	0.6785	0.8086	0.5%
%RSD		0.3172	1.3459	1.1	0.4676	1.7960	1.3760	1.6427	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	97.8%	50.6951	50.3160	97.8%	49.3112	50.7057	49.9530
2	15:38:24	99.6%	49.9623	49.9085	99.5%	49.1451	51.1618	50.2489
3	15:39:01	99.0%	50.5094	50.1641	99.8%	49.1562	50.7982	50.0637
x		98.8%	50.3889	50.1295	99.0%	49.2042	50.8886	50.0885
σ		0.9%	0.3810	0.2059	1.1%	0.0929	0.2411	0.1495
%RSD		0.9	0.7560	0.4108	1.1	0.1888	0.4738	0.2985

KQ1609039-02 8/3/2016 3:43:28 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	103.7%	2.5332	99.5%	25.0041	24.8065	12.4984	12.5503	24.7139
2	15:44:04	105.5%	2.4331	98.9%	25.3712	24.8044	12.5344	12.5670	24.9566
3	15:44:41	99.0%	2.5841	98.2%	24.2516	25.0867	12.6905	12.8397	24.8597
x		102.7%	2.5168	98.9%	24.8756	24.8992	12.5744	12.6523	24.8434
σ		3.4%	0.0769	0.7%	0.5708	0.1624	0.1021	0.1625	0.1221
%RSD		3.3	3.0538	0.7	2.2944	0.6523	0.8122	1.2842	0.4917

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	28.9598	27.6713	97.8%	49.6937	50.7125	47.7390	49.6992	98.0%
2	15:44:04	29.4333	27.8009	97.6%	50.2713	50.4056	49.0552	49.6964	98.3%
3	15:44:41	28.5876	27.1096	97.8%	49.6636	49.6851	49.1311	49.2629	99.6%
x		28.9936	27.5273	97.8%	49.8762	50.2677	48.6418	49.5528	98.6%
σ		0.4239	0.3675	0.1%	0.3425	0.5274	0.7828	0.2511	0.9%
%RSD		1.4621	1.3350	0.1	0.6867	1.0491	1.6092	0.5067	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	97.2%	50.3360	49.8830	95.7%	48.6040	50.0634	49.4156
2	15:44:04	97.8%	50.5638	49.9847	98.1%	48.3624	49.6911	49.2465
3	15:44:41	99.0%	50.1785	49.3890	98.5%	48.6843	50.3444	49.6146
x		98.0%	50.3594	49.7522	97.4%	48.5502	50.0330	49.4256
σ		0.9%	0.1937	0.3187	1.5%	0.1675	0.3277	0.1843
%RSD		0.9	0.3847	0.6405	1.6	0.3451	0.6549	0.3728

K1608325-014 8/3/2016 3:49:43 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	100.2%	0.0031	96.4%	0.0898	0.0723	0.1194	0.1227	0.5078
2	15:50:20	101.3%	0.0001	95.7%	0.0546	0.0812	0.1367	0.1254	0.4501
3	15:50:57	102.7%	-0.0008	95.7%	0.0608	0.0575	0.1281	0.1369	0.4489
x		101.4%	0.0008	95.9%	0.0684	0.0704	0.1281	0.1283	0.4689
σ		1.3%	0.0021	0.4%	0.0188	0.0120	0.0087	0.0076	0.0337
%RSD		1.2	253.6509	0.4	27.4689	17.0282	6.7621	5.8887	7.1884

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	0.5364	0.4670	96.5%	0.0726	1.6492	-0.4006	0.1902	96.2%
2	15:50:20	0.4899	0.4238	97.2%	-0.0654	1.8829	-0.1967	-0.1544	97.6%
3	15:50:57	0.4212	0.4675	97.5%	-0.0231	1.7430	-0.2282	-0.1248	98.4%
x		0.4825	0.4528	97.0%	-0.0053	1.7584	-0.2752	-0.0297	97.4%
σ		0.0579	0.0251	0.5%	0.0707	0.1176	0.1098	0.1910	1.1%
%RSD		12.0035	5.5394	0.5	1336.5650	6.6874	39.8850	643.5585	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	95.9%	0.0172	0.0078	94.6%	0.0168	0.0171	0.0164
2	15:50:20	96.6%	0.0215	0.0167	97.2%	0.0247	0.0282	0.0257
3	15:50:57	96.5%	0.0169	0.0125	97.5%	0.0274	0.0211	0.0229
x		96.3%	0.0185	0.0123	96.4%	0.0230	0.0221	0.0217
σ		0.4%	0.0025	0.0045	1.6%	0.0055	0.0056	0.0048
%RSD		0.4	13.6978	36.3160	1.6	23.8465	25.4513	21.9716

K1608325-014L 8/3/2016 3:53:22 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	100.6%	0.0010	98.5%	-0.0184	-0.0095	0.0236	0.0311	0.0865
2	15:53:58	101.0%	-0.0011	98.1%	-0.0127	0.0074	0.0214	0.0122	0.0793
3	15:54:35	101.7%	-0.0004	99.1%	-0.0108	0.0144	0.0249	0.0091	0.0682
x		101.1%	-0.0002	98.6%	-0.0140	0.0041	0.0233	0.0175	0.0780
σ		0.6%	0.0011	0.5%	0.0040	0.0123	0.0017	0.0119	0.0092
%RSD		0.6	621.5486	0.5	28.4476	298.2166	7.5038	68.0863	11.8513

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	0.0574	0.0932	94.6%	0.0491	0.3340	-0.0369	0.1420	97.4%
2	15:53:58	0.0230	0.0632	97.4%	0.1128	0.3019	0.3517	0.3516	99.8%
3	15:54:35	0.0815	0.0817	98.8%	-0.0179	0.3469	-0.0938	-0.1719	99.4%
x		0.0540	0.0794	96.9%	0.0480	0.3276	0.0736	0.1072	98.8%
σ		0.0294	0.0151	2.1%	0.0654	0.0232	0.2424	0.2635	1.3%
%RSD		54.4248	19.0549	2.2	136.2832	7.0768	329.1971	245.7661	1.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	96.7%	-0.0080	-0.0089	96.1%	0.0036	0.0062	0.0042
2	15:53:58	98.7%	-0.0060	-0.0063	98.5%	0.0070	0.0072	0.0060
3	15:54:35	99.0%	-0.0026	-0.0082	98.6%	0.0058	0.0085	0.0068
x		98.1%	-0.0056	-0.0078	97.8%	0.0055	0.0073	0.0057
σ		1.3%	0.0027	0.0014	1.4%	0.0017	0.0011	0.0013
%RSD		1.3	49.4488	17.6897	1.5	31.6713	15.6197	23.6181

K1608325-014A 8/3/2016 3:56:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	107.3%	20.8468	97.7%	21.7826	22.2098	22.1827	22.2289	21.7910
2	15:57:31	102.7%	21.8622	97.3%	21.7803	21.7440	21.8801	22.1210	22.3506
3	15:58:08	104.6%	21.4130	97.3%	22.0259	22.0099	22.4107	21.9345	22.3823
x		104.9%	21.3740	97.5%	21.8629	21.9879	22.1578	22.0948	22.1680
σ		2.3%	0.5088	0.2%	0.1412	0.2336	0.2661	0.1489	0.3275
%RSD		2.2	2.3806	0.2	0.6457	1.0626	1.2011	0.6740	1.4772

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	21.4202	21.8789	98.1%	21.6554	23.0374	21.1609	21.5495	97.7%
2	15:57:31	22.4016	22.0767	98.4%	22.0880	22.2971	21.3282	21.6736	97.2%
3	15:58:08	22.3866	21.9625	98.2%	21.9778	22.2335	21.4875	21.6853	98.3%
x		22.0695	21.9727	98.2%	21.9070	22.5227	21.3255	21.6361	97.8%
σ		0.5623	0.0993	0.1%	0.2248	0.4469	0.1633	0.0752	0.6%
%RSD		2.5481	0.4519	0.1	1.0263	1.9843	0.7659	0.3478	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	97.2%	21.8650	21.6409	96.4%	21.6222	21.5079	21.6232
2	15:57:31	98.6%	22.0165	21.6764	98.2%	21.7017	21.5448	21.6748
3	15:58:08	99.3%	21.7283	21.7217	99.1%	21.6012	21.6257	21.6991
x		98.4%	21.8700	21.6797	97.9%	21.6417	21.5595	21.6657
σ		1.1%	0.1442	0.0405	1.4%	0.0530	0.0602	0.0388
%RSD		1.1	0.6592	0.1867	1.4	0.2451	0.2794	0.1791

K1608344-013 8/3/2016 4:00:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	108.5%	-0.0007	99.0%	0.0387	0.0378	0.1323	0.1544	1.0409
2	16:01:28	103.7%	0.0122	95.9%	0.0410	0.0463	0.1470	0.1291	1.0761
3	16:02:04	101.3%	0.0113	98.1%	0.0398	0.0622	0.1485	0.1551	1.0481
x		104.5%	0.0076	97.7%	0.0398	0.0488	0.1426	0.1462	1.0550
σ		3.7%	0.0072	1.6%	0.0012	0.0124	0.0090	0.0148	0.0186
%RSD		3.5	95.1604	1.6	2.9163	25.4485	6.2800	10.1232	1.7604

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	1.1043	0.9774	97.7%	0.0758	1.7817	-0.4598	0.0700	97.7%
2	16:01:28	0.8953	0.9381	95.7%	-0.0495	2.1015	-0.0503	0.0216	97.2%
3	16:02:04	1.0311	0.9898	97.9%	-0.0586	1.9633	0.0138	-0.0574	97.6%
x		1.0103	0.9684	97.1%	-0.0107	1.9488	-0.1655	0.0114	97.5%
σ		0.1061	0.0270	1.2%	0.0751	0.1604	0.2570	0.0643	0.2%
%RSD		10.4978	2.7850	1.2	698.8406	8.2292	155.3050	564.9467	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	96.3%	0.0045	0.0040	95.9%	0.0309	0.0347	0.0290
2	16:01:28	96.9%	0.0079	0.0041	97.5%	0.0348	0.0361	0.0358
3	16:02:04	98.2%	0.0066	0.0142	98.4%	0.0363	0.0383	0.0387
x		97.1%	0.0063	0.0074	97.3%	0.0340	0.0364	0.0345
σ		1.0%	0.0017	0.0059	1.2%	0.0028	0.0018	0.0050
%RSD		1.0	26.8441	78.5456	1.3	8.2579	5.0458	14.5020

CCV5 8/3/2016 4:04:33 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	105.8%	24.7363	98.2%	25.7545	25.5584	25.1315	25.2519	25.7840
2	16:05:10	102.3%	24.6868	99.0%	25.4905	25.1486	24.7635	25.2669	25.5505
3	16:05:46	100.3%	24.6146	99.6%	25.2665	24.8390	24.8028	25.0468	25.1354
x		102.8%	24.6792	98.9%	25.5038	25.1820	24.8993	25.1885	25.4900
σ		2.8%	0.0612	0.7%	0.2443	0.3609	0.2021	0.1230	0.3285
%RSD		2.7	0.2479	0.7	0.9578	1.4330	0.8115	0.4883	1.2888

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	26.1223	25.3570	97.8%	25.1775	25.0620	25.8392	24.6146	98.6%
2	16:05:10	25.5515	25.3126	99.9%	25.3752	24.5947	24.9429	25.3141	99.0%
3	16:05:46	24.7302	24.7583	99.7%	24.9276	24.8762	25.1789	25.6995	99.5%
x		25.4680	25.1427	99.1%	25.1601	24.8443	25.3204	25.2094	99.0%
σ		0.6998	0.3336	1.2%	0.2243	0.2353	0.4646	0.5500	0.4%
%RSD		2.7478	1.3267	1.2	0.8915	0.9471	1.8347	2.1816	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	97.5%	24.8641	24.8259	98.2%	25.0333	24.8530	25.0661
2	16:05:10	99.8%	24.8740	24.6630	100.0%	25.1072	25.0653	25.1607
3	16:05:46	100.0%	24.8833	24.7352	100.2%	25.1722	25.2481	25.1943
x		99.1%	24.8738	24.7414	99.5%	25.1043	25.0555	25.1404
σ		1.4%	0.0096	0.0816	1.1%	0.0695	0.1977	0.0665
%RSD		1.4	0.0386	0.3300	1.1	0.2768	0.7892	0.2646

CCB5 8/3/2016 4:13:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	110.7%	0.0026	101.7%	-0.0038	0.0442	0.0095	0.0100	0.0267
2	16:14:10	105.0%	0.0031	101.3%	0.0035	0.0326	0.0055	0.0025	0.0219
3	16:14:47	102.8%	0.0024	101.5%	0.0003	0.0239	0.0168	0.0140	0.0041
x		106.1%	0.0027	101.5%	-0.0000	0.0335	0.0106	0.0088	0.0176
σ		4.1%	0.0003	0.2%	0.0037	0.0102	0.0057	0.0058	0.0119
%RSD		3.8	12.0980	0.2	26642.8290	30.3808	54.0039	65.7423	67.6377

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	-0.0158	0.0219	99.6%	-0.0428	0.1741	-0.1056	-0.0371	99.3%
2	16:14:10	0.0390	0.0192	98.7%	0.0639	-0.0051	0.3906	0.1930	100.1%
3	16:14:47	-0.0229	0.0164	101.3%	0.0114	0.1907	-0.1284	0.1882	101.5%
x		0.0001	0.0192	99.9%	0.0108	0.1199	0.0522	0.1147	100.3%
σ		0.0339	0.0028	1.3%	0.0533	0.1086	0.2933	0.1315	1.1%
%RSD		28273.6860	14.4764	1.3	492.8990	90.5581	561.7553	114.6503	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	98.7%	0.0088	0.0135	95.3%	0.0078	0.0097	0.0061
2	16:14:10	99.5%	0.0115	0.0113	97.6%	0.0055	0.0058	0.0055
3	16:14:47	99.9%	0.0133	0.0128	97.7%	0.0071	0.0094	0.0069
x		99.3%	0.0112	0.0125	96.9%	0.0068	0.0083	0.0062
σ		0.6%	0.0023	0.0011	1.3%	0.0012	0.0022	0.0007
%RSD		0.6	20.4867	9.1484	1.4	17.5686	26.3555	11.5269

LLCCVW2 8/3/2016 4:17:12 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	111.8%	0.0229	102.0%	0.1743	0.1905	0.1063	0.1049	0.4778
2	16:17:49	104.0%	0.0222	100.0%	0.1824	0.2020	0.1002	0.0967	0.4777
3	16:18:26	106.4%	0.0231	101.5%	0.1656	0.1986	0.1063	0.1163	0.4734
x		107.4%	0.0227	101.1%	0.1741	0.1970	0.1043	0.1060	0.4763
σ		4.0%	0.0005	1.0%	0.0084	0.0059	0.0035	0.0098	0.0025
%RSD		3.7	2.1680	1.0	4.8449	3.0015	3.3565	9.2836	0.5279

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	0.4323	0.4966	100.5%	0.4621	1.1062	0.9738	0.8781	100.4%
2	16:17:49	0.4907	0.4686	101.0%	0.5552	1.0625	0.7480	1.1965	100.3%
3	16:18:26	0.3776	0.4669	102.4%	0.4937	1.0171	1.0332	0.9922	101.9%
x		0.4335	0.4774	101.3%	0.5037	1.0619	0.9183	1.0223	100.9%
σ		0.0565	0.0167	1.0%	0.0473	0.0446	0.1505	0.1614	0.9%
%RSD		13.0374	3.4921	1.0	9.3968	4.1963	16.3868	15.7840	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	99.4%	0.0477	0.0534	96.8%	0.0223	0.0267	0.0221
2	16:17:49	100.9%	0.0599	0.0576	99.1%	0.0259	0.0250	0.0260
3	16:18:26	100.5%	0.0517	0.0613	99.4%	0.0209	0.0259	0.0229
x		100.3%	0.0531	0.0574	98.4%	0.0231	0.0259	0.0237
σ		0.8%	0.0062	0.0039	1.4%	0.0026	0.0009	0.0020
%RSD		0.8	11.6343	6.8667	1.4	11.1832	3.3896	8.5979

Service Request # K1608209 (Redigest Zn)_____
Calibration _____080516AMS03_____
QC in calibration__080516AMS03_____
QC Service Request # K1608011_____
STARLIMS run # 508566_____
Cal Std: MS20-75F ICSA Std: MS20-68H
ICV Std: MS20-75G ICSAB Std: MS20-68I
LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD 5.0 limit?	X		
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb.

Primary Review by _____ Date 9/5/16
Secondary Review by _____ Date 9/5/16

R:\icp\misc\data review forms\6020 DoD Review Checklist

Data Review Form

Service Request #:	**K1608209**
Instrument ID#:	**K-ICP-MS-03**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080516AMS03.csv**
RUNNO:	**508566**

There are no issues to report.

Primary Approver: _____ 8/5/16

Secondary Approver: _____ 8/5/16

Sample List

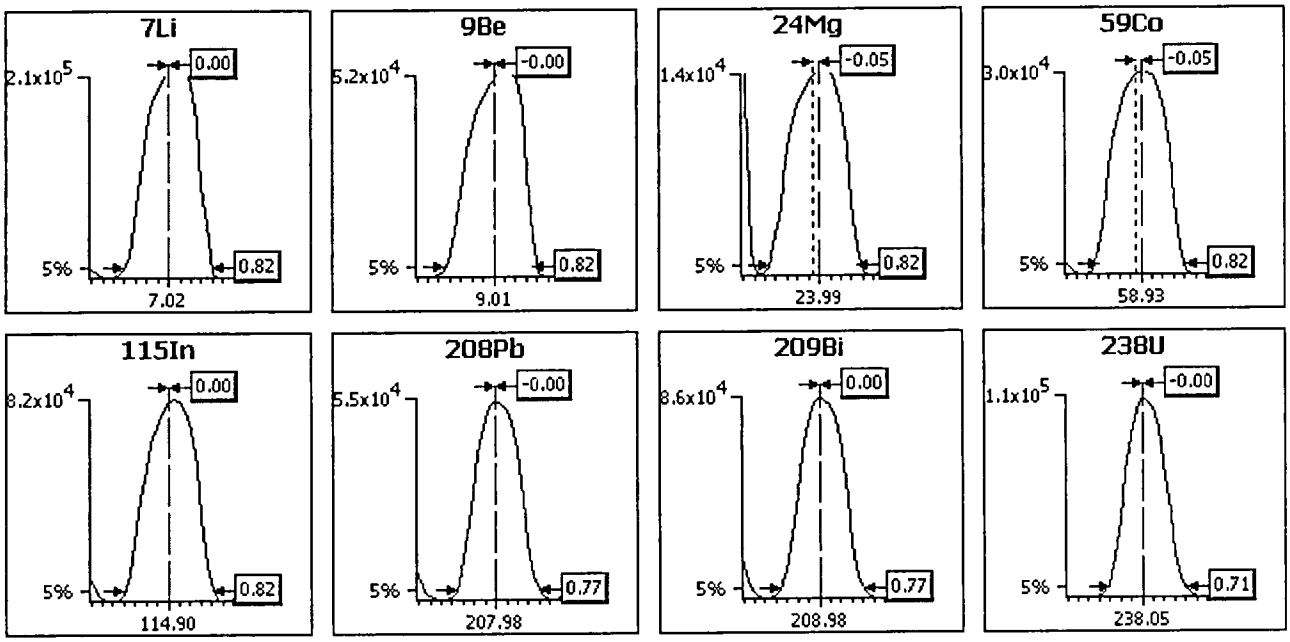
No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal. Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	CCB1	Unknown	1.000	0	1	1	145
7	LLICVW	Unknown	1.000	0	1	4	145
8	LRSTD	Unknown	1.000	1	1	1	145
9	ICSA	Unknown	1.000	0	1	5	145
10	ICSAB	Unknown	1.000	0	1	6	145
11	KQ1609201-01	Unknown	1.000	1	1	2	145
12	KQ1609201-02	Unknown	1.000	1	1	3	145
13	KQ1609201-03	Unknown	1.000	1	1	4	145
14	K1608011-007	Unknown	1.000	1	1	5	145
15	K1608011-007L	Unknown	1.000	1	1	6	145
16	K1608011-007A	Unknown	1.000	1	1	7	145
17	CCV2	Unknown	1.000	0	1	2	145
18	CCB2	Unknown	1.000	0	1	1	145
19	K1608207-015	Unknown	1.000	1	1	8	145
20	K1608209-015	Unknown	1.000	1	1	9	145
21	K1608210-015	Unknown	1.000	1	1	10	145
22	K1608325-014	Unknown	1.000	1	1	11	145
23	K1608344-013	Unknown	1.000	1	1	12	145
24	CCV3	Unknown	1.000	0	1	2	145
25	CCB3	Unknown	1.000	0	1	1	145
26	LLCCVW	Unknown	1.000	0	1	4	145

Performance Report

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.82	0.00
9Be	0.90	0.60	0.10	0.82	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.82	-0.05
115In	0.90	0.60	0.10	0.82	0.00
208Pb	0.90	0.60	0.10	0.77	-0.00
209Bi	0.90	0.60	0.10	0.77	0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	4.7
Focus	23.3
D1	-36.1
Pole Bias	0.3
Hexapole Bias	0.5
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-18.8
Lens 3	-200.0
Forward power	1357
Horizontal	150
Vertical	376
D2	-155
DA	-32.2
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	5:30:15 AM	0.250	219395.58	53374.477	14441.211	31635.198	85381.324	92278.225	1774.173	56833.348
2	5:31:28 AM	0.000	216799.65	52320.376	14251.662	31323.371	86029.139	93384.435	1717.412	57698.774
3	5:32:41 AM	0.000	212527.02	51402.663	14162.774	30968.157	85969.579	93441.517	1725.164	58051.257
4	5:33:53 AM	0.000	213919.62	51531.137	14088.158	31135.226	85938.285	93292.751	1749.168	58103.338
5	5:35:06 AM	0.000	216540.33	51523.343	13862.561	30871.830	85756.582	93084.886	1729.665	58561.766
x		0.050	215836.44	52030.400	14161.273	31186.756	85814.982	93096.363	1739.116	57849.697
σ		0.11	2679.42	835.32	212.79	303.88	262.89	477.01	22.83	645.71
%RSD		223.607	1.241	1.605	1.503	0.974	0.306	0.512	1.313	1.116

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	5:30:15 AM	88868.506	0.000	111865.05
2	5:31:28 AM	89567.314	0.000	113541.39
3	5:32:41 AM	90686.578	0.000	114116.27
4	5:33:53 AM	90799.699	0.000	114493.72
5	5:35:06 AM	90896.408	0.000	115034.49
x		90163.701	0.000	113810.18
σ		901.11	0.00	1216.10
%RSD		0.999	0.000	1.069

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	5:30:15 AM	0.019
2	5:31:28 AM	0.018
3	5:32:41 AM	0.018
4	5:33:53 AM	0.019
5	5:35:06 AM	0.019
x		0.0187
σ		0.00
%RSD		1.7832

Result : The performance report passed.

Dilution Corrected Concentrations

Cal. Blk 8/5/2016 5:39:58 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:39:58	-0.0118	0.0254	-0.0079	101.3%
2	05:40:09	0.0042	-0.0069	0.0063	100.9%
3	05:40:20	0.0075	-0.0185	0.0016	97.8%
x		-0.0000	-0.0000	0.0000	100.0%
σ		0.0103	0.0227	0.0073	1.9%
%RSD		0.0000	0.0000	0.0000	1.9

Cal. Stn 8/5/2016 5:42:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:42:12	25.0514	25.1194	24.6140	101.9%
2	05:42:22	25.2973	24.9918	25.3554	101.4%
3	05:42:33	24.6514	24.8888	25.0306	101.5%
x		25.0000	25.0000	25.0000	101.6%
σ		0.3260	0.1155	0.3717	0.3%
%RSD		1.3040	0.4619	1.4866	0.2

ICV1 8/5/2016 5:44:25 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:44:25	25.6702	29.6890	28.0159	100.5%
2	05:44:36	25.8448	29.9538	28.2114	100.4%
3	05:44:46	24.8765	28.5581	27.7659	101.1%
x		25.4638	29.4003	27.9977	100.7%
σ		0.5161	0.7412	0.2233	0.4%
%RSD		2.0267	2.5212	0.7976	0.4

CCV1 8/5/2016 5:46:39 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:46:39	25.3786	25.3760	25.4165	101.3%
2	05:46:50	25.0295	25.0916	24.9740	100.3%
3	05:47:00	25.2207	25.0019	24.5342	101.7%
x		25.2096	25.1565	24.9749	101.1%
σ		0.1748	0.1953	0.4411	0.7%
%RSD		0.6934	0.7763	1.7663	0.7

ICB1 8/5/2016 5:48:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:48:52	0.0726	0.0641	0.0891	101.6%
2	05:49:03	0.0731	0.1062	0.0653	99.7%
3	05:49:14	0.0719	0.0523	0.0796	100.5%
x		0.0725	0.0742	0.0780	100.6%
σ		0.0006	0.0283	0.0120	1.0%
%RSD		0.8264	38.1977	15.3424	1.0

CCB1 8/5/2016 5:57:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:57:26	-0.0388	-0.0200	-0.0370	101.0%
2	05:57:36	-0.0361	-0.0190	-0.0263	98.8%
3	05:57:47	-0.0478	0.0079	-0.0433	98.5%
x		-0.0409	-0.0104	-0.0355	99.4%
σ		0.0061	0.0158	0.0086	1.3%
%RSD		14.9863	152.7485	24.2370	1.3

LLICVW 8/5/2016 5:59:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:59:40	0.4505	0.4323	0.4425	99.2%
2	05:59:50	0.4367	0.4668	0.4864	97.7%
3	06:00:01	0.4301	0.3869	0.5136	97.5%
x		0.4391	0.4287	0.4808	98.2%
σ		0.0104	0.0401	0.0359	0.9%
%RSD		2.3645	9.3553	7.4625	0.9

LRSTD 8/5/2016 6:01:54 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:01:54	206.0177	206.6226	202.9570	98.5%
2	06:02:05	204.4385	201.2339	200.8658	99.6%
3	06:02:16	202.8644	204.3904	203.1290	99.2%
x		204.4402	204.0823	202.3173	99.1%
σ		1.5766	2.7075	1.2599	0.5%
%RSD		0.7712	1.3267	0.6228	0.5

ICSA 8/5/2016 6:05:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:05:52	2.0193	5.1031	1.7801	93.1%
2	06:06:03	2.0224	5.0883	1.7642	93.3%
3	06:06:14	2.0764	4.7413	1.8605	93.3%
x		2.0394	4.9776	1.8016	93.2%
σ		0.0321	0.2048	0.0516	0.2%
%RSD		1.5751	4.1136	2.8656	0.2

ICSAB 8/5/2016 6:08:08 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:08:08	26.6336	28.2492	24.3451	91.8%
2	06:08:19	26.4267	28.1931	24.7238	93.0%
3	06:08:29	26.2232	28.9694	24.6132	93.1%
x		26.4278	28.4705	24.5607	92.6%
σ		0.2052	0.4329	0.1947	0.7%
%RSD		0.7765	1.5205	0.7928	0.8

KQ1609201-01 8/5/2016 6:10:22 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:10:22	-0.0214	-0.0032	-0.0109	94.9%
2	06:10:32	-0.0145	0.0598	-0.0137	94.6%
3	06:10:43	-0.0069	0.0617	-0.0219	93.1%
x		-0.0143	0.0394	-0.0155	94.2%
σ		0.0073	0.0369	0.0057	1.0%
%RSD		50.9433	93.6065	36.6097	1.0

KQ1609201-02 8/5/2016 6:12:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:12:34	24.0525	27.2375	26.8497	95.6%
2	06:12:45	23.8612	28.1148	26.3448	94.9%
3	06:12:55	23.7234	27.8112	26.8798	94.1%
x		23.8790	27.7212	26.6914	94.9%
σ		0.1653	0.4456	0.3006	0.7%
%RSD		0.6923	1.6073	1.1260	0.8

KQ1609201-03 8/5/2016 6:14:46 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:14:46	24.0373	28.3844	27.0564	95.8%
2	06:14:57	24.2141	27.4928	26.8380	96.2%
3	06:15:08	24.8982	28.6710	26.4043	94.0%
x		24.3832	28.1827	26.7663	95.4%
σ		0.4547	0.6145	0.3319	1.2%
%RSD		1.8647	2.1803	1.2401	1.2

K1608011-007 8/5/2016 6:16:59 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:16:59	0.2927	0.3545	0.2731	95.7%
2	06:17:10	0.3067	0.3661	0.2769	94.6%
3	06:17:21	0.2960	0.3294	0.3064	95.1%
x		0.2985	0.3500	0.2855	95.1%
σ		0.0074	0.0188	0.0182	0.5%
%RSD		2.4652	5.3692	6.3785	0.6

K1608011-007L 8/5/2016 6:19:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:19:12	0.3974	0.3297	0.3730	96.7%
2	06:19:23	0.4467	0.4764	0.4205	94.8%
3	06:19:34	0.4724	0.4728	0.4131	94.2%
x		0.4388	0.4263	0.4022	95.2%
σ		0.0381	0.0837	0.0255	1.3%
%RSD		8.6846	19.6320	6.3415	1.3

K1608011-007A 8/5/2016 6:21:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:21:26	22.7930	23.0239	22.6704	95.8%
2	06:21:37	22.3784	22.8072	22.2122	94.6%
3	06:21:48	22.2870	22.4722	21.8112	95.7%
x		22.4861	22.7678	22.2313	95.4%
σ		0.2696	0.2780	0.4299	0.7%
%RSD		1.1991	1.2208	1.9339	0.7

CCV2 8/5/2016 6:23:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:23:40	24.5378	25.0376	24.9515	96.2%
2	06:23:51	24.7700	25.0390	24.9692	95.0%
3	06:24:02	25.0346	25.3246	24.7635	95.1%
x		24.7808	25.1337	24.8947	95.4%
σ		0.2486	0.1653	0.1140	0.6%
%RSD		1.0032	0.6576	0.4580	0.7

CCB2 8/5/2016 6:25:53 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:25:53	-0.0169	0.0107	-0.0213	94.9%
2	06:26:04	-0.0268	-0.0249	-0.0298	97.1%
3	06:26:15	-0.0110	-0.0167	0.0014	94.3%
x		-0.0182	-0.0103	-0.0166	95.4%
σ		0.0080	0.0187	0.0161	1.5%
%RSD		43.7226	180.9580	97.4558	1.5

K1608207-015 8/5/2016 6:28:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:28:06	0.3308	0.3330	0.2859	94.2%
2	06:28:17	0.2970	0.3973	0.3275	93.9%
3	06:28:28	0.3259	0.3241	0.3013	93.0%
x		0.3179	0.3514	0.3049	93.7%
σ		0.0182	0.0399	0.0210	0.7%
%RSD		5.7386	11.3615	6.8975	0.7

K1608209-015 8/5/2016 6:30:20 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:30:20	0.4010	0.4068	0.4051	93.4%
2	06:30:31	0.3375	0.3609	0.3307	94.2%
3	06:30:42	0.3547	0.4690	0.3844	93.6%
x		0.3644	0.4122	0.3734	93.8%
σ		0.0328	0.0543	0.0384	0.4%
%RSD		9.0135	13.1705	10.2791	0.4

K1608210-015 8/5/2016 6:32:36 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:32:36	0.2816	0.2995	0.2888	93.8%
2	06:32:47	0.2743	0.3900	0.2807	94.0%
3	06:32:57	0.2887	0.3743	0.2547	92.8%
x		0.2815	0.3546	0.2748	93.6%
σ		0.0072	0.0484	0.0178	0.6%
%RSD		2.5706	13.6407	6.4898	0.7

K1608325-014 8/5/2016 6:34:51 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:34:51	0.4234	0.5461	0.4245	92.6%
2	06:35:02	0.3883	0.4967	0.3946	93.7%
3	06:35:13	0.4344	0.4484	0.3683	92.3%
x		0.4153	0.4971	0.3958	92.9%
σ		0.0241	0.0488	0.0281	0.8%
%RSD		5.8036	9.8213	7.1022	0.8

K1608344-013 8/5/2016 6:37:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:37:06	0.5489	0.4987	0.4725	94.6%
2	06:37:17	0.5154	0.5805	0.5625	93.8%
3	06:37:28	0.5511	0.5989	0.5334	93.2%
x		0.5385	0.5594	0.5228	93.9%
σ		0.0200	0.0533	0.0459	0.7%
%RSD		3.7174	9.5304	8.7855	0.7

CCV3 8/5/2016 6:39:21 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:39:21	25.2609	25.7288	24.8825	94.6%
2	06:39:32	24.4702	24.7630	24.3337	95.1%
3	06:39:43	24.5560	24.4272	23.9673	96.2%
x		24.7624	24.9730	24.3945	95.3%
σ		0.4339	0.6757	0.4606	0.8%
%RSD		1.7522	2.7057	1.8882	0.9

CCB3 8/5/2016 6:41:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:41:34	-0.0182	-0.0102	-0.0126	95.1%
2	06:41:45	-0.0234	0.0042	-0.0016	94.4%
3	06:41:56	-0.0090	-0.0239	-0.0079	94.8%
x		-0.0169	-0.0100	-0.0074	94.7%
σ		0.0073	0.0141	0.0055	0.4%
%RSD		43.0510	140.4253	74.6547	0.4

LLCCVW 8/5/2016 6:43:50 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:43:50	0.4768	0.3745	0.4139	95.8%
2	06:44:00	0.4794	0.4953	0.4537	96.3%
3	06:44:12	0.4501	0.4373	0.4428	95.6%
x		0.4687	0.4357	0.4368	95.9%
σ		0.0162	0.0604	0.0206	0.4%
%RSD		3.4595	13.8632	4.7129	0.4

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 26, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on September 12, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37049:

SDG #	Fraction:
K1608207 K160820, K1608210, K1608325, K1608344	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #37049 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	(4) Metals (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	K1608207	09/12/16	09/26/16	1	4																														
A	K1608207	09/12/16	09/26/16	0	5																														
B	K1608209	09/12/16	09/26/16	1	9																														
C	K1608210	09/12/16	09/26/16	1	9																														
D	K1608325	09/12/16	09/26/16	1	13																														
E	K1608344	09/12/16	09/26/16	1	9																														
Total	J/PG			5	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\37049ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDGs: K1608207, K1608209, K1608210, K1608325, K1608344

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 23, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the July 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilution, laboratory control sample (LCS), field duplicate samples, split samples, and internal standards. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, split samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the method were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the method blanks reviewed by ADR with the exception of copper, lead, and zinc. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608207/ 6020A	ICB/CCB	Antimony Lead	0.020 ug/L 0.008 ug/L	All water samples in SDG K1608207
K1608207/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816
K1608209/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FTBL-SS-B34-0-6-071916
K1608209/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608209
K1608210/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608210

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608325/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B03-0-6-072116 FD072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116
K1608325/ 6020A	ICB/CCB	Antimony Lead	0.013 ug/L 0.008 ug/L	All water samples in SDG K1608325
K1608344/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FD072016
K1608344/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	EB072016

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1608207/ 6020A	EB071816	Lead	0.038 ug/L	0.038U ug/L
K1608209/ 6020A	EB071916	Lead	0.018 ug/L	0.018U ug/L
K1608210/ 6020A	EB071516	Lead	0.019 ug/L	0.019U ug/L
K1608325/ 6020A	FD072116	Antimony	0.093 mg/Kg	0.093U mg/Kg
K1608325/ 6020A	EB072116	Antimony Lead	0.012 ug/L 0.022 ug/L	0.012U ug/L 0.022U ug/L
K1608344/ 6020A	FD072016	Antimony	0.152 mg/Kg	0.152U mg/Kg
K1608344/ 6020A	EB072016	Antimony Lead	0.007 ug/L 0.034 ug/L	0.007U ug/L 0.034U ug/L

VI. Field Blanks

Ten equipment blanks were collected and analyzed for metals. One equipment blank had detections for copper, lead, and zinc. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of four MS/MSD pairs for antimony and lead. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R or serial dilution %R were within QC limits. The details are provided in Enclosures I and II.

X. Duplicate Sample Analysis/Triplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) and triplicate (TRP) analyses specified for the samples in these SDGs, and therefore duplicate and triplicate analyses were not performed for these SDGs.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XIII. Field Duplicates

Five field duplicate pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of antimony, copper, and lead in three duplicate pairs. The associated sample results were qualified as detected estimated (J). The field duplicate result comparisons are provided in Enclosure I.

Four split sample pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of lead in one split sample pair. The associated sample results were qualified as detected estimated (J). No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The split sample comparisons are provided in Enclosures I and II.

XIV. Internal Standards

All internal standard areas percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to field duplicate RPD and results reported below the LOQ, data were qualified as estimated in eight samples.

Due to split sample RPD, data were qualified as estimated in two samples.

Due to method blank contamination, data were qualified as not detected in four samples.

Due to calibration blank contamination, data were qualified as not detected in seven samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2016	FD071516	K1608210-012	FD	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B27-0-6-071516	K1608210-003	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B28-0-6-071516	K1608210-004	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B29-0-6-071516	K1608210-005	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B30-0-6-071516	K1608210-006	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B39-0-6-071516	K1608210-010	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B40-0-6-071516	K1608210-011	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B41-0-6-071516	K1608210-014	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B42-0-6-071516	K1608210-013	N	EPA 3050B	6020A	III
15-Jul-2016	EB071516	K1608210-015	EB	CLFAA	6020A	III
15-Jul-2016	EB071516RE	K1608210-015RE	EB	CLFAA	6020A	III
18-Jul-2016	FD071816	K1608207-014	FD	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B60-0-6-071816	K1608207-006	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B59-0-6-071816	K1608207-005	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B58-0-6-071816	K1608207-004	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816	K1608207-003	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	MS	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MSD	K1608207-003SD	MSD	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B52-0-6-071816	K1608207-011	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B51-0-6-071816	K1608207-010	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B53-0-6-071816	K1608207-012	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B54-0-6-071816	K1608207-013	N	EPA 3050B	6020A	III
18-Jul-2016	EB071816	K1608207-015	EB	CLFAA	6020A	III
18-Jul-2016	EB071816RE	K1608207-015RE	EB	CLFAA	6020A	III
19-Jul-2016	FD071916	K1608209-014	FD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B33-0-6-071916	K1608209-004	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Jul-2016	FTBL-SS-B34-0-6-071916	K1608209-005	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B35-0-6-071916	K1608209-006	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B36-0-6-071916	K1608209-007	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916	K1608209-010	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	MS	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MSD	K1608209-010SD	MSD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B46-0-6-071916	K1608209-011	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B47-0-6-071916	K1608209-012	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B48-0-6-071916	K1608209-013	N	EPA 3050B	6020A	III
19-Jul-2016	EB071916	K1608209-015	EB	CLFAA	6020A	III
19-Jul-2016	EB071916RE	K1608209-015RE	EB	CLFAA	6020A	III
20-Jul-2016	FD072016	K1608344-012	FD	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B21-0-6-072016	K1608344-002	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B22-0-6-072016	K1608344-003	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B23-0-6-072016	K1608344-004	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B24-0-6-072016	K1608344-005	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B15-0-6-072016	K1608344-008	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B16-0-6-072016	K1608344-009	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B17-0-6-072016	K1608344-010	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016	K1608344-011	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	MS	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MSD	K1608344-011SD	MSD	EPA 3050B	6020A	III
20-Jul-2016	EB072016	K1608344-013	EB	CLFAA	6020A	III
20-Jul-2016	EB072016RE	K1608344-013RE	EB	CLFAA	6020A	III
21-Jul-2016	FD072116	K1608325-010	FD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B09-0-6-072116	K1608325-003	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-Jul-2016	FTBL-SS-B11-0-6-072116	K1608325-005	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B10-0-6-072116	K1608325-004	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B12-0-6-072116	K1608325-006	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B07-0-12-072116	K1608325-001	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B08-0-12-072116	K1608325-002	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116	K1608325-009	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	MS	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MSD	K1608325-009SD	MSD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116	K1608325-011	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116RE	K1608325-011RE	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B05-0-6-072116	K1608325-012	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B06-0-6-072116	K1608325-013	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B01-0-12-072116	K1608325-007	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B02-0-12-072116	K1608325-008	N	EPA 3050B	6020A	III
21-Jul-2016	EB072116	K1608325-014	EB	CLFAA	6020A	III
21-Jul-2016	EB072116RE	K1608325-014RE	EB	CLFAA	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608207

Method Category: METALS

Method: 6020A **Matrix:** Soil

Sample ID: FD071816 **Collected:** 7/18/2016 12:00:00 AM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.166	J	0.021	LOD	0.043	LOQ	mg/Kg	J	Fd
COPPER	9.95	=	0.043	LOD	0.085	LOQ	mg/Kg	J	Fd
LEAD	21.2	J	0.011	LOD	0.043	LOQ	mg/Kg	J	Fd

Sample ID: FTBL-SS-B54-0-6-071816 **Collected:** 7/18/2016 12:20:00 PM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	2.16	J	0.023	LOD	0.046	LOQ	mg/Kg	J	Fd
COPPER	40.1	=	0.046	LOD	0.091	LOQ	mg/Kg	J	Fd
LEAD	330	J	0.011	LOD	0.046	LOQ	mg/Kg	J	Fd

Method Category: METALS

Method: 6020A **Matrix:** Water

Sample ID: EB071816 **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Initial/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.038	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Sample ID: EB071816RE **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Reanalysis-1/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608209

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608209

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/19/2016 12:00:00

Sample ID: FD071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.957	J	0.019	LOD	0.038	LOQ	mg/Kg	J	Fd
LEAD	169	J	0.009	LOD	0.038	LOQ	mg/Kg	J	Fd

7/19/2016 11:25:00

Sample ID: FTBL-SS-B45-0-6-071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.543	J	0.018	LOD	0.036	LOQ	mg/Kg	J	Fd
LEAD	56.0	J	0.009	LOD	0.036	LOQ	mg/Kg	J	Fd, ProfJudg

Method Category: METALS

Method: 6020A **Matrix:** Water

7/19/2016 1:50:00

Sample ID: EB071916 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.018	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/19/2016 1:50:00

Sample ID: EB071916RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608210

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/15/2016 12:00:00

Sample ID: FD071516 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.353	J	0.020	LOD	0.041	LOQ	mg/Kg	J	Fd

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608210

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/15/2016 12:20:00

Sample ID: FTBL-SS-B42-0-6-071516 *Collected:* PM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.894	J	0.019	LOD	0.039	LOQ	mg/Kg	J	Fd

Method Category: METALS

Method: 6020A **Matrix:** Water

7/15/2016 3:15:00

Sample ID: EB071516 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.019	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/15/2016 3:15:00

Sample ID: EB071516RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608325

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/21/2016 12:00:00

Sample ID: FD072116 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.093	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.012	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608325

Method Category: METALS

Method: 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.13	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.022	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

7/21/2016 1:50:00

Sample ID: EB072116RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608344

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/20/2016 12:00:00

Sample ID: FD072016 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.152	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A **Matrix:** Water

7/20/2016 1:50:00

Sample ID: EB072016 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.007	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
COPPER	0.15	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.034	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Fd	Field Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

K1608207

Method Blank Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071816 FTBL-SS-B51-0-6-071816 FTBL-SS-B52-0-6-071816 FTBL-SS-B53-0-6-071816 FTBL-SS-B54-0-6-071816 FTBL-SS-B57-0-6-071816 FTBL-SS-B58-0-6-071816 FTBL-SS-B59-0-6-071816 FTBL-SS-B60-0-6-071816

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071816

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B57-0-6-071816MS (Dry) FTBL-SS-B57-0-6-071816MSD (Dry) (FTBL-SS-B57-0-6-071816)	ANTIMONY LEAD	38 -	38 83	72.00-124.00 84.00-118.00	- -	ANTIMONY LEAD	No Qual, Sb, Post Spike = 102% Pb, Serial Dilution OK

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B54-0-6-071816 (Dry)	FD071816 (Dry)			
ZINC	67.3	110	48	50.00	No Qualifiers Applied
ANTIMONY	2.16	0.166	171	50.00	J(all detects)
COPPER	40.1	9.95	120	50.00	
LEAD	330	21.2	176	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071816RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049A4a
SDG #: K1608207
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR~~IV~~
SD

Date: 9/15/18
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. MSD = %Rec OK; PB OK; Prec OK, SER OK = NA
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	SER=(-)
X.	Laboratory control samples	N	Not reviewed for ADR validation.
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	FTBL-SS-B52-0-6-071816	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	EB071816	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 31049A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: JB
2nd reviewer: JM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DUP-11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)
Soil preparation factor applied: 100X
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.020	0.1										
Pb			0.008	0.04	0.038									

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Quality Control
Outlier Reports

K1608209

Method Blank Outlier Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609300-03	8/24/2016 9:32:00 PM	LEAD	0.006 mg/Kg	FD071916 FTBL-SS-B33-0-6-071916 FTBL-SS-B34-0-6-071916 FTBL-SS-B35-0-6-071916 FTBL-SS-B36-0-6-071916 FTBL-SS-B45-0-6-071916 FTBL-SS-B46-0-6-071916 FTBL-SS-B47-0-6-071916 FTBL-SS-B48-0-6-071916

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071916

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071916(Initial/TOT)	LEAD	0.018 ug/L	0.018U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	LEAD	123	134	84.00-118.00	-	LEAD	No Qual, Serial Dilution OK
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	ANTIMONY	42	41	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 98%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B45-0-6-071916 (Dry)	FD071916 (Dry)			
COPPER	18.7	24.0	25	50.00	No Qualifiers Applied
ZINC	54.7	61.6	12	50.00	
ANTIMONY	0.543	0.957	55	50.00	J(all detects)
LEAD	56.0	169	100	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608209 **Laboratory:** ALS_K

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name:** Arcadis_FtBliss_ALS_160627

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071916	COPPER	J	0.07	0.10	LOQ	ug/L	J (all detects)
	LEAD	J	0.018	0.020	LOQ	ug/L	
EB071916RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049B4a
SDG #: K1608209
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/8/16
Page: 1 of 1
Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD: Sb out; Ba ok; SER ok = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (5)
X.	Laboratory control samples	N	
XI.	~~Field~~ Split Duplicates	SW	SD = (5, FTBL-SS-B45-0-6-071916-QA) (SDG: FA355653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B33-0-6-071916	K1608209-004	Soil	07/19/16
2	FTBL-SS-B34-0-6-071916	K1608209-005	Soil	07/19/16
3	FTBL-SS-B35-0-6-071916	K1608209-006	Soil	07/19/16
4	FTBL-SS-B36-0-6-071916	K1608209-007	Soil	07/19/16
5	FTBL-SS-B45-0-6-071916	K1608209-010	Soil	07/19/16
6	FTBL-SS-B46-0-6-071916	K1608209-011	Soil	07/19/16
7	FTBL-SS-B47-0-6-071916	K1608209-012	Soil	07/19/16
8	FTBL-SS-B48-0-6-071916	K1608209-013	Soil	07/19/16
9	FD071916	K1608209-014	Soil	07/19/16
10	EB071916	K1608209-015	Water	07/19/16
11	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	Soil	07/19/16
12	FTBL-SS-B45-0-6-071916MSD	K1608209-010MSD	Soil	07/19/16
13				
14				
15				

LDC #: 37044A8A

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: CD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, (Co) (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC:11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Comments: Mercury by CVAA if performed

LDC #: 37049B4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 2

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.092	0.23										

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.018									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049B4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Page: 1 of
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	5	FTBL-SS-B45-0-6-071916-QA (SDG: FA35653)		
Antimony	0.543	2.1	118	NQ
Copper	18.7	17.3	8	
Lead	56.0	215	117	Jdet/A (det)
Zinc	54.7	48.1	13	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049B4a.wpd

Quality Control
Outlier Reports

K1608210

Method Blank Outlier Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071516 FTBL-SS-B27-0-6-071516 FTBL-SS-B28-0-6-071516 FTBL-SS-B29-0-6-071516 FTBL-SS-B30-0-6-071516 FTBL-SS-B39-0-6-071516 FTBL-SS-B40-0-6-071516 FTBL-SS-B41-0-6-071516 FTBL-SS-B42-0-6-071516

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071516

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071516(Initial/TOT)	LEAD	0.019 ug/L	0.019U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071516	COPPER LEAD	J J	0.07 0.019	0.10 0.020	LOQ LOQ	ug/L ug/L	J (all detects)
EB071516RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B42-0-6-071516 (Dry)	FD071516 (Dry)			
COPPER	24.1	23.3	3	50.00	No Qualifiers Applied
LEAD	122	110	10	50.00	
ZINC	68.8	76.6	11	50.00	
ANTIMONY	0.894	0.353	87	50.00	J(all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049C4a
SDG #: K1608210
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (B, FTBL-SS-B27-0-6-071516-DA) (SDG: FA35653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B27-0-6-071516	K1608210-003	Soil	07/15/16
2	FTBL-SS-B28-0-6-071516	K1608210-004	Soil	07/15/16
3	FTBL-SS-B29-0-6-071516	K1608210-005	Soil	07/15/16
4	FTBL-SS-B30-0-6-071516	K1608210-006	Soil	07/15/16
5	FTBL-SS-B39-0-6-071516	K1608210-010	Soil	07/15/16
6	FTBL-SS-B40-0-6-071516	K1608210-011	Soil	07/15/16
7	FD071516	K1608210-012	Soil	07/15/16
8	FTBL-SS-B42-0-6-071516	K1608210-013	Soil	07/15/16
9	FTBL-SS-B41-0-6-071516	K1608210-014	Soil	07/15/16
10	EB071516	K1608210-015	Water	07/15/16
11	FTBL-SS-B27-0-6-071516MS	K1608210-003MS	Soil	07/15/16
12	FTBL-SS-B27-0-6-071516MSD	K1608210-003MSD	Soil	07/15/16
13				
14				
15				

LDC #: 37046C4A

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049C4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.019									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049C4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: 3D
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y/N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B42-0-6-071516-QA (SDG: FA35653)		
Antimony	0.894	0.83U	7	
Copper	24.1	24.4	1	
Lead	122	102	18	
Zinc	68.8	61.8	11	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049C4a.wpd

Quality Control
Outlier Reports

K1608325

Method Blank Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609275-03	8/24/2016 5:38:00 PM	COPPER LEAD ZINC	0.035 mg/Kg 0.038 mg/Kg 0.36 mg/Kg	FD072116 FTBL-SS-B01-0-12-072116 FTBL-SS-B02-0-12-072116 FTBL-SS-B03-0-6-072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B04-0-6-072116RE FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116 FTBL-SS-B07-0-12-072116 FTBL-SS-B08-0-12-072116 FTBL-SS-B09-0-6-072116 FTBL-SS-B10-0-6-072116 FTBL-SS-B11-0-6-072116 FTBL-SS-B12-0-6-072116

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072116

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072116(Initial/TOT)	COPPER	0.13 ug/L	0.13U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B03-0-6-072116MS (Dry) FTBL-SS-B03-0-6-072116MSD (Dry) (FTBL-SS-B03-0-6-072116)	ANTIMONY	50	50	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 101%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072116	ANTIMONY	J	0.012	0.050	LOQ	ug/L	J (all detects)
EB072116RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B03-0-6-072116 (Dry)	FD072116 (Dry)			
ANTIMONY	0.136	0.093	38	50.00	No Qualifiers Applied
COPPER	9.48	7.54	23	50.00	
LEAD	23.6	15.0	45	50.00	
ZINC	45.5	47.2	4	50.00	

LDC #: 37049D4a
SDG #: K1608325
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16

Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D = SB out; PS in = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (9)
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (9, FTBL-SS-B03-0-6-072116-2A)
XII.	Internal Standard (ICP-MS)	A	(SD6: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B07-0-12-072116	K1608325-001	Soil	07/21/16
2	FTBL-SS-B08-0-12-072116	K1608325-002	Soil	07/21/16
3	FTBL-SS-B09-0-6-072116	K1608325-003	Soil	07/21/16
4	FTBL-SS-B10-0-6-072116	K1608325-004	Soil	07/21/16
5	FTBL-SS-B11-0-6-072116	K1608325-005	Soil	07/21/16
6	FTBL-SS-B12-0-6-072116	K1608325-006	Soil	07/21/16
7	FTBL-SS-B01-0-12-072116	K1608325-007	Soil	07/21/16
8	FTBL-SS-B02-0-12-072116	K1608325-008	Soil	07/21/16
9	FTBL-SS-B03-0-6-072116	K1608325-009	Soil	07/21/16
10	FD072116	K1608325-010	Soil	07/21/16
11	FTBL-SS-B04-0-6-072116	K1608325-011	Soil	07/21/16
12	FTBL-SS-B05-0-6-072116	K1608325-012	Soil	07/21/16
13	FTBL-SS-B06-0-6-072116	K1608325-013	Soil	07/21/16
14	EB072116	K1608325-014	Water	07/21/16
15	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	Soil	07/21/16

LDC #: 37049D4a

SDG #: K1608325

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/16

Reviewer: JD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

	Client ID	Lab ID	Matrix	Date
16	FTBL-SS-B03-0-6-072116MSD	K1608325-009MSD	Soil	07/21/16
17				
18				
19				
20				
21				

Notes:

LDC #: 31045D4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-13	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
14	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
QC-15-10	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ____

Comments: Mercury by CVAA if performed

LDC #: 37049D4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9-13

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.048	0.12	0.093									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	14									
Sb			0.013	0.065	0.012									
Pb			0.008	0.04	0.022									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049D4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: SB
2nd Reviewer: [signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	9	FTBL-SS-B03-0-6-072116-QA (SDG: FA35653)		
Antimony	0.136	2.8U	181	NQ
Copper	9.48	9.8	3	
Lead	23.6	25.7	9	
Zinc	45.5	52.3	14	

NQ = No qual because one or both samples < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049D4a.wpd

Quality Control
Outlier Reports

K1608344

Method Blank Outlier Report

Lab Reporting Batch ID: K1608344 Laboratory: ALS_K

EDD Filename: K1608344_SEDD2A_rev eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609920-03	8/24/2016 8:29:00 PM	LEAD ZINC	0.007 mg/Kg 0.14 mg/Kg	FD072016 FTBL-SS-B15-0-6-072016 FTBL-SS-B16-0-6-072016 FTBL-SS-B17-0-6-072016 FTBL-SS-B18-0-6-072016 FTBL-SS-B21-0-6-072016 FTBL-SS-B22-0-6-072016 FTBL-SS-B23-0-6-072016 FTBL-SS-B24-0-6-072016

Method: 6020A
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072016(Initial/TOT)	COPPER	0.15 ug/L	0.15U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B18-0-6-072016MS (Dry) FTBL-SS-B18-0-6-072016MSD (Dry) (FTBL-SS-B18-0-6-072016)	ANTIMONY	38	38	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 103%

Reporting Limit Outliers

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072016	ANTIMONY	J	0.007	0.050	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B18-0-6-072016 (Dry)	FD072016 (Dry)			
ANTIMONY	0.126	0.152	19	50.00	No Qualifiers Applied
COPPER	16.8	14.2	17	50.00	
LEAD	25.2	20.2	22	50.00	
ZINC	51.6	42.6	19	50.00	

LDC #: 37049E4a (9 of 30)

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/17

SDG #: K1608344

Page: 1 of 1

Laboratory: ALS Environmental

Reviewer: SD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = Sb out = PS ok = NC
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(8)
X.	Laboratory control samples	N	
XI.	~~Field Duplicates~~ Split	N	SD=(8, FTBL-SS-B18-0-6-072016-DA)
XII.	Internal Standard (ICP-MS)	A	(SDG: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B21-0-6-072016	K1608344-002	Soil	07/20/16
2	FTBL-SS-B22-0-6-072016	K1608344-003	Soil	07/20/16
3	FTBL-SS-B23-0-6-072016	K1608344-004	Soil	07/20/16
4	FTBL-SS-B24-0-6-072016	K1608344-005	Soil	07/20/16
5	FTBL-SS-B15-0-6-072016	K1608344-008	Soil	07/20/16
6	FTBL-SS-B16-0-6-072016	K1608344-009	Soil	07/20/16
7	FTBL-SS-B17-0-6-072016	K1608344-010	Soil	07/20/16
8	FTBL-SS-B18-0-6-072016	K1608344-011	Soil	07/20/16
9	FD072016	K1608344-012	Soil	07/20/16
10	EB072016	K1608344-013	Water	07/20/16
11	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	Soil	07/20/16
12	FTBL-SS-B18-0-6-072016MSD	K1608344-011MSD	Soil	07/20/16
13				
14				
15				

LDC #: 37042EU4 (9 of 50)

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DC, 11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37042E4a (30)

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	9									
Sb			0.092	0.23	0.152									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 10

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06	0.007									
Pb			0.008	0.04	0.034									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049E4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: SD
2nd Reviewer: CL

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B18-0-6-072016-QA (SDG: FA35653)		
Antimony	0.126	0.74U	142	NQ
Copper	16.8	14.6	14	
Lead	25.2	22.4	12	
Zinc	51.6	39.3	27	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049E4a.wpd

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 21, 2016

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1608207

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-SS-B57-0-6-071816	K1608207-003	Soil	07/18/16
FTBL-SS-B58-0-6-071816	K1608207-004	Soil	07/18/16
FTBL-SS-B59-0-6-071816	K1608207-005	Soil	07/18/16
FTBL-SS-B60-0-6-071816	K1608207-006	Soil	07/18/16
FTBL-SS-B51-0-6-071816	K1608207-010	Soil	07/18/16
FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Copper, Lead, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Lead Zinc	0.026 mg/Kg 0.19 mg/Kg	All samples in SDG K1608207
ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

Sample EB071816 was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
EB071816	07/18/16	Copper Lead Zinc	0.15 ug/L 0.038 ug/L 0.3 ug/L	All soil samples in SDG K1608207

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For FTBL-SS-B57-0-6-071816MS/MSD, no data were qualified for Antimony and Lead percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

LDC #: 37049A4a

SDG #: K1608207

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~/IV

SD

Date: 9/15/16

Page: 1 of 1

Reviewer: SD

2nd Reviewer: A

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	7/18/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	EB=(10)
VII.	Matrix Spike/Matrix Spike Duplicates	SW	MSD=(11,12)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(1)
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	~~FTBL-SS-B52-0-6-071816~~	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	~~EB071816~~	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 37049A6

VALIDATION FINDINGS CHECKLIST

Reviewer: SD
2nd Reviewer: MC

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?	✓			
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.				
Target analytes were detected in the field duplicates.				
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 37048A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: JD
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-S	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
QC 11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: All

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Pb	0.026			0.13										
Zn	0.19			0.95										

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 3D
2nd Reviewer: JL

METHOD: Trace Metals (EPA Method 200.7/200.8)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 07/18/16
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All

Analyte	Blank ID	Sample Identification											
[redacted]	10	Action Limit	No Qual.										
Cu	0.15	0.000750											
Pb	0.038	0.000190											
Zn	0.3	0.001500											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: SO
2nd Reviewer: M

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	11/12	S	Sb	38 (72-124)	38 (72-124)		1	No Qual. (PS ok)
			Pb		83 (84-118)			No Qual. (SER ok)

Comments:

LDC #: 37049A1 (4)

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: JD
2nd Reviewer: A

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV 17:17	ICP/MS (Initial calibration)	Cu	12.9 ug/L	12.5 ug/L	103%R	103%R	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV 19:20	ICP/MS (Continuing calibration)	Pb	24.99 ug/L	25 ug/L	100%R	100%R	Y
	CVAA (Contining calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: _____

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: JO
2nd Reviewer: JC

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

%R = Found / True x 100 Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

RPD = |S-D| / (S+D)/2 x 100 Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

%D = |I-SDR| / I x 100 Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICS AB 17:35	ICP interference check	Zn	21.67 ug/L	25ug/L	87%R	87%R	Y
LCS 19:17	Laboratory control sample	Cu	484.15 ug/L	500 ug/L	97%R	97%R	
MS 19:11	Matrix spike	Pb	(SSR-SR) 79.24 mg/kg	87.20 mg/kg	91%R	91%R	
MSD 19:14	Duplicate	Zn	139.83 mg/kg	139.09 mg/kg	0.5%RPD	0.5%RPD	
SER 19:05	ICP serial dilution	Cu	44.66 ug/L	41.93 ug/L	7%D	7%D	

Comments: *SER results = before 5x D:1 / 25x D:1 applied.

LDC #: 57049A4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: DD
2nd reviewer: SZ

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for (1) Sb were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)(%solids)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

%solids: 0.94
RD = 0.455335 ug/L
FV = 100ml
In. W = 1.25g
Dil = 5

Recalculation: $\frac{(0.455335\ ug/L)(100ml)(5)}{(1.25g)(0.94)} \times \frac{1mg}{1000ug} = 0.193\ mg/kg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Sb	0.193	0.193	Y
	2	Cu	24.0	24.0	
	3	Pb	49.9	49.9	
	4	Zn	39.6	39.6	
	5	Sb	0.822	0.822	Y

Note:

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September 08, 2016

Analytical Report for Service Request No: K1608210

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

RE: Closed Castner Firing Range / 06261038.0001.00400

Dear (b) (6)

Enclosed are the results of the sample(s) submitted to our laboratory July 20, 2016
For your reference, these analyses have been assigned our service request number **K1608210.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at gregory.salata@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

(b) (6)
Senior Project
Manager

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Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
Chain of Custody
Total Solids
Metals
Raw Data
    Total Solids
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1608210
Project:	Closed Castner Firing Range/ 06261038.0001.00400	**Date Received:**	07/20/16
Sample Matrix:	Soil and Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Fifteen samples were received for analysis at ALS Environmental on 07/20/16. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:
Antimony recoveries are generally low for soil and sediment samples when digested using EPA Method 3050B. Despite anticipated low recoveries, the method is still generally prescribed because of its versatility for general metals analysis. Antimony results (in conjunction with the matrix spike recovery) from this procedure should only be used as indicators to estimate concentrations. The matrix spike recoveries of Antimony for the Batch QC sample were below the DoD QSM control criterion. Since low recoveries resulted from a method defect and were possibly magnified by certain matrix components, no corrective action was appropriate. Alternative procedures that specifically target Antimony are available but were not specified for this project. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control.

The matrix spike duplicate recovery of Lead for the Batch QC sample was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by__(b) (6)_____

TRRP

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Appendix A ALS Kelso-Laboratory Data Package Signature Page

This data package consists of:

☒ This signature page, the laboratory review checklist, and the following reportable data:

☒ R1 Field chain-of-custody documentation;

☒ R2 Sample identification cross-reference;

☒ R3 Test reports (analytical data sheets) for each environmental sample that includes:

a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

☒ R4 Surrogate recovery data including:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

☒ R5 Test reports/summary forms for blank samples;

☒ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c) The laboratory's LCS QC limits.

☒ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits

☒ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

☒ R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;

☒ R10 Other problems or anomalies.

☒ The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable:] [This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

[redacted] (b) (6)	[redacted] (b) (6)	Senior Project Mgr	09/08/16
Name (Printed)	Sig	Official Title (printed)	Date

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608210				
Reviewer Name: [redacted]			Prep Batch Number(s): Various				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X1			
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608210				
Reviewer Name: (b) (6)			Prep Batch Number(s): Various				
#[1]	**A[2]**	**Description**	**Yes**	**No**	**NA[3]**	**NR[4]**	**ER#[5]**
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 09/08/2016
Project Name: Closed Castner Firing Range	Laboratory Job Number: K1608210
Reviewer Name: (b) (6)	Prep Batch Number(s): Various

ER#[5]	Description
X1	See Total Metals Matrix Spike Recovery Exceptions narrative notes.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Chain of Custody

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Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: VA16082210

Project Manager:	[redacted]	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) [redacted] **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:	[redacted]		
Project Number:	[redacted]		
Send copy to:	[redacted]		
Sampler's Name:	[redacted]		

REQUESTED ANALYSIS

TAT

- [x] Standard 15 day
- [ ] Same Day * 100%
- [ ] Next Day ***
- [ ] 3 Day
- [x] EDD

Surcharges. Please call for availability

Due Date:

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present			
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Expplosives	TCLP Lead	Comments
FTBL-SS-B25-0-12-071516		7-15-16	0930		3	X		X	hold
FTBL-SS-B26-0-12-071516		7-15-16	1100		3	X		X	hold
FTBL-SS-B27-0-6-071516		7-15-16	0830		1	X			
FTBL-SS-B28-0-6-071516		7-15-16	0855		1	X			
FTBL-SS-B29-0-6-071516		7-15-16	~~0950~~ sc 0915		1	X			
FTBL-SS-B30-0-6-071516		7-15-16	0935		1	X			
FTBL-SS-B38-0-12-071516		7-15-16	1330		3	X		X	hold
FTBL-SS-B37-0-12-071516		7-15-16	1200		3	X		X	hold
FTBL-SS-B37-12-24-071516		7-15-16	1230		3	X		X	hold
FTBL-SS-B39-0-6-071516		7-15-16	1145		1	X			
FTBL-SS-B40-0-6-071516		7-15-16	1155		1	X			

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6) [redacted]		7-15-16/1330	(b) (6) [redacted]		7/20/16 1020

*Note: Hold TCLP Lead for highest total lead interval per berm location.
Confirm with (b) (6) [redacted] before running only TCLP Pb samples.

Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: VJL1608210

Project Manager:	(b) (6)	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:	[redacted]		
Project Number:	[redacted]		
Send copy to:	[redacted]		
Sampler's Name:	[redacted]		

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present			
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

REQUESTED ANALYSIS

TAT

- ■ Standard 15 day
- ☐ Same Day * 100%
- ☐ Next Day ***
- ☐ 3 Day
- ■ EDD

Surcharges. Please call for availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Explosives	TCLP Lead	Comments
FD071516	S	071516	—		1	X			
FTBL-SS-B42-0-6-071516	S	071516	1220		1	X			
FTBL-SS-B41-0-6-071516	S	0715-16	1210		1	X			
EB071516	W	071516	1515		1	X			

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

IC

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
[redacted]		7-15-16/1330	[redacted]		7/20/16 1020

Revised: 6/10/2016

PC Greg

Cooler Receipt and Preservation Form

Client Arcadis Service Request K16 08210

Received: 7/20/16 Opened: 7/20/16 By: KO Unloaded: 7/20/16 By: KO

1. Samples were received via? *Mail* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1, Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number NA	Filed
1.4	1.1	.7	.4	-.3	342		7836 1697 4063	
-.1	-.2	1.0	.9	-.1	359		7836 1697 4041	
-.3	-.5	1.0	.8	-.2	354		7836 1697 4052	

4. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Page ____ *of* ____

Total Solids

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Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/15/16
Sample Matrix:	Soil	**Date Received:**	07/20/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
FTBL-SS-B27-0-6-071516	K1608210-003	**90.3**	-	-	1	08/01/16 16:13	
FTBL-SS-B28-0-6-071516	K1608210-004	**93.2**	-	-	1	08/01/16 16:13	
FTBL-SS-B29-0-6-071516	K1608210-005	**91.7**	-	-	1	08/01/16 16:13	
FTBL-SS-B30-0-6-071516	K1608210-006	**94.5**	-	-	1	08/01/16 16:13	
FTBL-SS-B39-0-6-071516	K1608210-010	**94.0**	-	-	1	08/01/16 16:13	
FTBL-SS-B40-0-6-071516	K1608210-011	**97.4**	-	-	1	08/01/16 16:13	
FD071516	K1608210-012	**92.6**	-	-	1	08/01/16 16:13	
FTBL-SS-B42-0-6-071516	K1608210-013	**97.1**	-	-	1	08/01/16 16:13	
FTBL-SS-B41-0-6-071516	K1608210-014	**96.4**	-	-	1	08/01/16 16:13	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/15/16
Sample Matrix:	Soil	**Date Received:**	07/20/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1608209-010DUP	-	84.5	83.3	83.9	1	20	08/01/16
FTBL-SS-B27-0-6-071516	K1608210-003DUP	-	90.3	90.3	90.3	<1	20	08/01/16

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Metals

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Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608210
Date Collected: 7/15/2016
Date Received: 7/20/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B27-0-6-071516 **Lab Code:** K1608210-003

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.039	0.019	0.015	5.0	08/05/16	08/24/16	0.124		J
Copper	6020A	0.077	0.039	0.015	5.0	08/05/16	08/24/16	15.1		
Lead	6020A	0.039	0.010	0.004	5.0	08/05/16	08/24/16	23.0		J
Zinc	6020A	0.39	0.19	0.08	5.0	08/05/16	08/24/16	100		

% Solids: 90.3

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project No.:	06261038.0001.00400	**Date Collected:**	7/15/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B28-0-6-071516** **Lab Code:** **K1608210-004**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.022	0.017	5.0	08/05/16	08/24/16	0.122		J
Copper	6020A	0.087	0.043	0.017	5.0	08/05/16	08/24/16	13.7		
Lead	6020A	0.043	0.011	0.004	5.0	08/05/16	08/24/16	19.3		J
Zinc	6020A	0.43	0.22	0.09	5.0	08/05/16	08/24/16	86.9		

% Solids: **93.2**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project No.:	06261038.0001.00400	**Date Collected:**	7/15/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B29-0-6-071516** **Lab Code:** **K1608210-005**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.042	0.021	0.017	5.0	08/05/16	08/24/16	0.127		J
Copper	6020A	0.083	0.042	0.017	5.0	08/05/16	08/24/16	17.6		
Lead	6020A	0.042	0.010	0.004	5.0	08/05/16	08/24/16	25.2		J
Zinc	6020A	0.42	0.21	0.08	5.0	08/05/16	08/24/16	97.8		

% Solids: **91.7**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608210
Date Collected: 7/15/2016
Date Received: 7/20/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B30-0-6-071516 **Lab Code:** K1608210-006

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.039	0.020	0.016	5.0	08/05/16	08/24/16	0.137		J
Copper	6020A	0.079	0.039	0.016	5.0	08/05/16	08/24/16	16.7		
Lead	6020A	0.039	0.010	0.004	5.0	08/05/16	08/24/16	26.3		J
Zinc	6020A	0.40	0.20	0.08	5.0	08/05/16	08/24/16	77.9		

% Solids: 94.5

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project No.:	06261038.0001.00400	**Date Collected:**	7/15/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B39-0-6-071516** **Lab Code:** **K1608210-010**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.022	0.017	5.0	08/05/16	08/24/16	0.374		J
Copper	6020A	0.086	0.043	0.017	5.0	08/05/16	08/24/16	24.4		
Lead	6020A	0.043	0.011	0.004	5.0	08/05/16	08/24/16	52.8		J
Zinc	6020A	0.43	0.22	0.09	5.0	08/05/16	08/24/16	66.5		

% Solids: **94.0**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project No.:	06261038.0001.00400	**Date Collected:**	7/15/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B40-0-6-071516** **Lab Code:** **K1608210-011**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.042	0.021	0.017	5.0	08/05/16	08/24/16	1.51		J
Copper	6020A	0.084	0.042	0.017	5.0	08/05/16	08/24/16	26.0		
Lead	6020A	0.042	0.011	0.004	5.0	08/05/16	08/24/16	266		J
Zinc	6020A	0.42	0.21	0.08	5.0	08/05/16	08/24/16	52.9		

% Solids: **97.4**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project No.:	06261038.0001.00400	**Date Collected:**	7/15/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FD071516** **Lab Code:** **K1608210-012**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.041	0.020	0.016	5.0	08/05/16	08/24/16	0.353		J
Copper	6020A	0.082	0.041	0.016	5.0	08/05/16	08/24/16	23.3		
Lead	6020A	0.041	0.010	0.004	5.0	08/05/16	08/24/16	110		J
Zinc	6020A	0.41	0.21	0.08	5.0	08/05/16	08/24/16	76.6		

% Solids: **92.6**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project No.:	06261038.0001.00400	**Date Collected:**	7/15/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B42-0-6-071516** **Lab Code:** **K1608210-013**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.039	0.019	0.015	5.0	08/05/16	08/24/16	0.894		J
Copper	6020A	0.077	0.039	0.015	5.0	08/05/16	08/24/16	24.1		
Lead	6020A	0.039	0.010	0.004	5.0	08/05/16	08/24/16	122		J
Zinc	6020A	0.39	0.19	0.08	5.0	08/05/16	08/24/16	68.8		

% Solids: **97.1**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608210
Date Collected: 7/15/2016
Date Received: 7/20/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B41-0-6-071516 **Lab Code:** K1608210-014

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.021	0.017	5.0	08/05/16	08/24/16	0.255		J
Copper	6020A	0.086	0.043	0.017	5.0	08/05/16	08/24/16	15.3		
Lead	6020A	0.043	0.011	0.004	5.0	08/05/16	08/24/16	77.3		J
Zinc	6020A	0.43	0.21	0.09	5.0	08/05/16	08/24/16	58.0		

% Solids: 96.4

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Service Request: K1608210
Project No.: 06261038.0001.00400
Date Collected:
Project Name: Closed Castner Firing Range
Date Received:
Matrix: SOIL
Units: mg/Kg
Basis: DRY

Sample Name: Method Blank
Lab Code: KQ1609274-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.025	0.020	5.0	08/05/16	08/24/16	0.025	U	J
Copper	6020A	0.100	0.050	0.020	5.0	08/05/16	08/24/16	0.050	U	
Lead	6020A	0.050	0.012	0.005	5.0	08/05/16	08/24/16	0.026	J	J
Zinc	6020A	0.50	0.25	0.10	5.0	08/05/16	08/24/16	0.19	J	

% Solids: 100.0

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	25.1	100	25.0	24.6	98	24.8	99	6020A
Copper	12.5	12.9	103	25.0	25.2	101	25.5	102	6020A
Lead	25.0	25.7	103	25.0	25.1	100	24.8	99	6020A
Zinc	25.0	25.3	101	25.0	24.2	97	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	25.4	102	24.7	99	6020A
Copper				25.0	25.0	100	25.5	102	6020A
Lead				25.0	26.2	105	25.0	100	6020A
Zinc				25.0	24.8	99	24.6	98	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99	24.8	99	6020A
Copper				25.0	25.5	102	25.3	101	6020A
Lead				25.0	25.4	102	24.7	99	6020A
Zinc				25.0	24.6	98	24.6	98	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	25.5	102			6020A
Copper				25.0	25.0	100			6020A
Lead				25.0	25.5	102			6020A
Zinc				25.0	24.7	99			6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608210

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVS1									
	Antimony	0.104	0.100	104	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Copper	0.178	0.200	89	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Lead	0.102	0.100	102	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Zinc	0.992	1.000	99	80.0 - 120.0	MS	8/24/2016	17:29	082416d
LLCCVS1									
	Antimony	0.129	0.100	129	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Copper	0.191	0.200	96	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Lead	0.108	0.100	108	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Zinc	0.848	1.000	85	70.0 - 130.0	MS	8/24/2016	18:47	082416d
LLCCVS2									
	Antimony	0.098	0.100	98	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Copper	0.202	0.200	101	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Lead	0.102	0.100	102	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Zinc	1.141	1.000	114	70.0 - 130.0	MS	8/24/2016	20:02	082416d
LLCCVS3									
	Antimony	0.092	0.100	92	70.0 - 130.0	MS	8/24/2016	21:17	082416d
	Copper	0.223	0.200	112	70.0 - 130.0	MS	8/24/2016	21:17	082416d
	Lead	0.104	0.100	104	70.0 - 130.0	MS	8/24/2016	21:17	082416d
	Zinc	0.966	1.000	97	70.0 - 130.0	MS	8/24/2016	21:17	082416d

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.040	U	0.040	U	0.040	U	0.048	J	6020A
Copper	0.040	U	0.040	U	0.040	U	0.040	U	6020A
Lead	0.010	U	0.010	U	0.010	U	0.010	U	6020A
Zinc	0.20	U	0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.040	U	0.040	U	0.040	U	6020A
Copper			0.040	U	0.040	U	0.040	U	6020A
Lead			0.010	U	0.010	U	0.010	U	6020A
Zinc			0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.040	U					6020A
Copper			0.040	U					6020A
Lead			0.010	U					6020A
Zinc			0.20	U					6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.0	0.0				
Copper	0.0	50.0	0.6	45.6	91			
Lead	0.0		0.1	0.1				
Zinc	0.0	25.0	0.2	21.7	87			

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 94.0

Sample Name: Batch QC1S **Lab Code:** K1608207-003S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	33.035		0.193		87.199	38	J	6020A
Copper	84 - 119	60.679		17.843		43.60	98		6020A
Lead	84 - 118	111.474		32.227		87.20	91		6020A
Zinc	82 - 119	139.09		59.35		87.20	91		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 94.0

Sample Name: Batch QC1SD **Lab Code:** K1608207-003SD

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	33.293		0.193		86.490	38	J	6020A
Copper	84 - 119	58.560		17.843		43.25	94		6020A
Lead	84 - 118	103.903		32.227		86.49	83	J	6020A
Zinc	82 - 119	139.83		59.35		86.49	93		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: WATER

Sample Name: Batch QC1A **Lab Code:** K1608207-003A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	51.32		0.45		50.0	102		6020A
Copper	75 - 125	91.14		41.93		50.0	98		6020A
Lead	75 - 125	119.770		75.734		50.0	88		6020A
Zinc	75 - 125	190.48		139.47		50.0	102		6020A

Metals

- 6 -

DUPLICATES

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project No.:	06261038.0001.00400	**Units:**	MG/KG
Project Name:	Closed Castner Firing Range	**Basis:**	DRY
Matrix:	SOIL	**% Solids:**	94.0

Sample Name: Batch QC1SD **Lab Code:** K1608207-003SD

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Antimony	20	33.035		33.293		0.8		6020A
Copper	20	60.679		58.560		3.6		6020A
Lead	20	111.474		103.903		7.0		6020A
Zinc	20	139.09		139.83		0.5		6020A

An empty field in the Control Limit column indicates the control limit is not applicable.

Form VI - IN

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	1000.0	975.2	98					
Copper	500.0	485.4	97					
Lead	1000.0	953.7	95					
Zinc	1000.0	955.6	96					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **Batch QC1L** **Lab Code:** **K1608207-003L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	0.453		0.476	J	5		MS
Copper	41.93		44.66		7		MS
Lead	75.73		78.96		4		MS
Zinc	139.47		144.29		3		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-04**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.10	0.05	0.04	MS
Copper	65		0.20	0.10	0.04	MS
Lead	208		0.100	0.025	0.010	MS
Zinc	66		1.00	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	45.000	3000	6020A
Copper	45.000	3000	6020A
Lead	45.000	3000	6020A
Zinc	45.000	3000	6020A

Comments:

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Weight (g)	Final Volume(mL)
K1608207-003S	8/5/2016	1.22	100.0
K1608207-003SD	8/5/2016	1.23	100.0
K1608210-003	8/5/2016	1.43	100.0
K1608210-004	8/5/2016	1.24	100.0
K1608210-005	8/5/2016	1.31	100.0
K1608210-006	8/5/2016	1.34	100.0
K1608210-010	8/5/2016	1.23	100.0
K1608210-011	8/5/2016	1.22	100.0
K1608210-012	8/5/2016	1.32	100.0
K1608210-013	8/5/2016	1.33	100.0
K1608210-014	8/5/2016	1.21	100.0
KQ1609274-01	8/5/2016	1.00	100.0
KQ1609274-02	8/5/2016	100.0	100.0

Metals
- 14 -
ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Blank	1.0	17:11			X								X		X										X	
Standard 1	1.0	17:14			X								X		X										X	
ICV1	1.0	17:17			X								X		X										X	
CCV1	1.0	17:20			X								X		X										X	
ICB1	1.0	17:23			X								X		X										X	
CCB1	1.0	17:26			X								X		X										X	
LLICVS1	1.0	17:29			X								X		X										X	
ICS-A1	1.0	17:32			X								X		X										X	
ICS-AB1	1.0	17:35			X								X		X										X	
ZZZZZZ	5.0	17:38																								
ZZZZZZ	5.0	17:41																								
ZZZZZZ	5.0	17:44																								
ZZZZZZ	5.0	17:47																								
ZZZZZZ	5.0	17:50																								
ZZZZZZ	5.0	17:53																								
ZZZZZZ	5.0	17:56																								
ZZZZZZ	5.0	17:59																								
ZZZZZZ	5.0	18:02																								
CCV2	1.0	18:05			X								X		X										X	
CCB2	1.0	18:08			X								X		X										X	
ZZZZZZ	5.0	18:11																								
ZZZZZZ	5.0	18:14																								
ZZZZZZ	1.0	18:17																								
ZZZZZZ	1.0	18:20																								
ZZZZZZ	5.0	18:23																								
ZZZZZZ	5.0	18:26																								
ZZZZZZ	5.0	18:29																								
ZZZZZZ	5.0	18:32																								
ZZZZZZ	1.0	18:35																								
ZZZZZZ	5.0	18:38																								
CCV3	1.0	18:41			X								X		X										X	
CCB3	1.0	18:44			X								X		X										X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
LLCCVS1	1.0	18:47			X								X		X										X	
ZZZZZZ	5.0	18:50																								
ZZZZZZ	5.0	18:53																								
ZZZZZZ	5.0	18:56																								
KQ1609274-01	5.0	18:59			X								X		X										X	
ZZZZZZ	5.0	19:02																								
K1608207-003L	5.0	19:05			X								X		X										X	
K1608207-003A	5.0	19:08			X								X		X										X	
K1608207-003S	5.0	19:11			X								X		X										X	
K1608207-003SD	5.0	19:14			X								X		X										X	
KQ1609274-02	5.0	19:17			X								X		X										X	
CCV4	1.0	19:20			X								X		X										X	
CCB4	1.0	19:23			X								X		X										X	
ZZZZZZ	1.0	19:26																								
ZZZZZZ	5.0	19:29																								
ZZZZZZ	5.0	19:32																								
ZZZZZZ	5.0	19:35																								
ZZZZZZ	5.0	19:38																								
ZZZZZZ	5.0	19:41																								
ZZZZZZ	5.0	19:44																								
ZZZZZZ	5.0	19:47																								
ZZZZZZ	5.0	19:50																								
K1608210-003	5.0	19:53			X								X		X										X	
CCV5	1.0	19:56			X								X		X										X	
CCB5	1.0	19:59			X								X		X										X	
LLCCVS2	1.0	20:02			X								X		X										X	
K1608210-004	5.0	20:05			X								X		X										X	
K1608210-005	5.0	20:08			X								X		X										X	
K1608210-006	5.0	20:11			X								X		X										X	
K1608210-010	5.0	20:14			X								X		X										X	
K1608210-011	5.0	20:17			X								X		X										X	
K1608210-012	5.0	20:20			X								X		X										X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
K1608210-013	5.0	20:23			X								X		X										X	
K1608210-014	5.0	20:26			X								X		X										X	
ZZZZZZ	5.0	20:29																									
ZZZZZZ	5.0	20:32																									
CCV6	1.0	20:35			X								X		X										X	
CCB6	1.0	20:38			X								X		X										X	
ZZZZZZ	5.0	20:41																									
ZZZZZZ	5.0	20:44																									
ZZZZZZ	5.0	20:47																									
ZZZZZZ	5.0	20:50																									
ZZZZZZ	5.0	20:53																									
ZZZZZZ	5.0	20:56																									
ZZZZZZ	5.0	20:59																									
ZZZZZZ	5.0	21:02																									
ZZZZZZ	5.0	21:05																									
ZZZZZZ	5.0	21:08																									
CCV7	1.0	21:11			X								X		X										X	
CCB7	1.0	21:14			X								X		X										X	
LLCCVS3	1.0	21:17			X								X		X										X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608210

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
Blank	Blank	1711	100		100		100							
Standard 1	Standard 1	1714	101		101		102							
ICV1	ICV	1717	101		103		100							
CCV1	CCV	1720	101		102		101							
ICB1	ICB	1723	101		102		99							
CCB1	CCB	1726	99		100		100							
LLICVS1	LLICVS1	1729	99		102		100							
ICS-A1	ICSA	1732	85		88		94							
ICS-AB1	ICSAB	1735	87		89		94							
ZZZZZZ	ZZZZZZ	1738												
ZZZZZZ	ZZZZZZ	1741												
ZZZZZZ	ZZZZZZ	1744												
ZZZZZZ	ZZZZZZ	1747												
ZZZZZZ	ZZZZZZ	1750												
ZZZZZZ	ZZZZZZ	1753												
ZZZZZZ	ZZZZZZ	1756												
ZZZZZZ	ZZZZZZ	1759												
ZZZZZZ	ZZZZZZ	1802												
CCV2	CCV	1805	103		105		103							
CCB2	CCB	1808	102		102		101							
ZZZZZZ	ZZZZZZ	1811												
ZZZZZZ	ZZZZZZ	1814												
ZZZZZZ	ZZZZZZ	1817												
ZZZZZZ	ZZZZZZ	1820												
ZZZZZZ	ZZZZZZ	1823												
ZZZZZZ	ZZZZZZ	1826												
ZZZZZZ	ZZZZZZ	1829												
ZZZZZZ	ZZZZZZ	1832												
ZZZZZZ	ZZZZZZ	1835												
ZZZZZZ	ZZZZZZ	1838												
CCV3	CCV	1841	98		95		94							
CCB3	CCB	1844	98		99		101							
LLCCVS1	LLCCVS1	1847	101		102		103							
ZZZZZZ	ZZZZZZ	1850												
ZZZZZZ	ZZZZZZ	1853												
ZZZZZZ	ZZZZZZ	1856												
KQ1609274-01	Method Blank	1859	100		104		103							
ZZZZZZ	ZZZZZZ	1902												
K1608207-003L	Batch QC1L	1905	107		109		107							
K1608207-003A	Batch QC1A	1908	104		103		109							
K1608207-003S	Batch QC1S	1911	104		104		110							
K1608207-003SD	Batch QC1SD	1914	104		103		111							
KQ1609274-02	Lab Control	1917	110		107		109							
CCV4	CCV	1920	109		108		107							

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608210

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
CCB4	CCB	1923	108		109		106							
ZZZZZZ	ZZZZZZ	1926												
ZZZZZZ	ZZZZZZ	1929												
ZZZZZZ	ZZZZZZ	1932												
ZZZZZZ	ZZZZZZ	1935												
ZZZZZZ	ZZZZZZ	1938												
ZZZZZZ	ZZZZZZ	1941												
ZZZZZZ	ZZZZZZ	1944												
ZZZZZZ	ZZZZZZ	1947												
ZZZZZZ	ZZZZZZ	1950												
K1608210-003	FTBL-SS-B27-0-6-	1953	104		104		112							
CCV5	CCV	1956	109		106		105							
CCB5	CCB	1959	108		107		106							
LLCCVS2	LLCCVS2	2002	107		108		108							
K1608210-004	FTBL-SS-B28-0-6-	2005	104		102		113							
K1608210-005	FTBL-SS-B29-0-6-	2008	102		102		112							
K1608210-006	FTBL-SS-B30-0-6-	2011	103		102		112							
K1608210-010	FTBL-SS-B39-0-6-	2014	101		102		110							
K1608210-011	FTBL-SS-B40-0-6-	2017	104		104		110							
K1608210-012	FD071516	2020	103		105		111							
K1608210-013	FTBL-SS-B42-0-6-	2023	102		103		111							
K1608210-014	FTBL-SS-B41-0-6-	2026	101		102		106							
ZZZZZZ	ZZZZZZ	2029												
ZZZZZZ	ZZZZZZ	2032												
CCV6	CCV	2035	104		105		108							
CCB6	CCB	2038	101		103		103							
ZZZZZZ	ZZZZZZ	2041												
ZZZZZZ	ZZZZZZ	2044												
ZZZZZZ	ZZZZZZ	2047												
ZZZZZZ	ZZZZZZ	2050												
ZZZZZZ	ZZZZZZ	2053												
ZZZZZZ	ZZZZZZ	2056												
ZZZZZZ	ZZZZZZ	2059												
ZZZZZZ	ZZZZZZ	2102												
ZZZZZZ	ZZZZZZ	2105												
ZZZZZZ	ZZZZZZ	2108												
CCV7	CCV	2111	98		101		101							
CCB7	CCB	2114	96		98		99							
LLCCVS3	LLCCVS3	2117	95		98		101							

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project No.:	06261038.0001.00400	**Date Collected:**	7/15/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/20/2016
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **EB071516** **Lab Code:** **K1608210-015**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	07/21/16	08/03/16	0.012	U	
Copper	6020A	0.10	0.05	0.02	1.0	07/21/16	08/03/16	0.07	J	
Lead	6020A	0.020	0.010	0.004	1.0	07/21/16	08/03/16	0.019	J	
Zinc	6020A	0.5	0.5	0.2	1.0	08/04/16	08/05/16	0.3	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Service Request: K1608210
Project No.: 06261038.0001.00400
Date Collected:
Project Name: Closed Castner Firing Range
Date Received:
Matrix: WATER
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1608449-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	07/21/16	08/03/16	0.012	U	
Copper	6020A	0.10	0.05	0.02	1.0	07/21/16	08/03/16	0.05	U	
Lead	6020A	0.020	0.010	0.004	1.0	07/21/16	08/03/16	0.007	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608210
Project No.:	06261038.0001.00400	**Date Collected:**	
Project Name:	Closed Castner Firing Range	**Date Received:**	
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **Method Blank** **Lab Code:** **KQ1609201-01**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Zinc	**6020A**	**0.5**	**0.5**	**0.2**	**1.0**	**08/04/16**	**08/05/16**	**0.5**	**U**	

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	26.1	104	25.0	24.8	99	25.1	100	6020A
Copper	12.5	12.4	99	25.0	25.0	100	25.2	101	6020A
Lead	25.0	25.2	101	25.0	25.0	100	25.4	102	6020A
Zinc	25.0	25.5	102	25.0	25.2	101	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99	24.8	99	6020A
Copper				25.0	25.5	102	25.5	102	6020A
Lead				25.0	25.1	100	25.4	102	6020A
Zinc				25.0	24.8	99			6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.7	99			6020A
Copper				25.0	25.2	101			6020A
Lead				25.0	25.1	100			6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608210

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVW1									
	Antimony	0.051	0.05	102	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Copper	0.101	0.10	101	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Lead	0.020	0.02	100	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
LLCCVW1									
	Antimony	0.046	0.05	92	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Copper	0.090	0.10	90	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Lead	0.020	0.02	100	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
LLCCVW2									
	Antimony	0.057	0.05	114	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Copper	0.106	0.10	106	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Lead	0.024	0.02	120	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
LLICVW1									
	Zinc	0.44	0.50	88	80.0 - 120.0	MS	8/5/2016	05:59	080516AMS
LLCCVW1									
	Zinc	0.47	0.50	94	70.0 - 130.0	MS	8/5/2016	06:43	080516AMS

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.012	J	0.006	U	0.020	J	0.006	U	6020A
Copper	0.02	U	0.02	U	0.02	U	0.02	U	6020A
Lead	0.005	J	0.004	U	0.008	J	0.007	J	6020A
Zinc	0.2	U	0.2	U	0.2	U	0.2	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.006	U	0.013	J			6020A
Copper			0.02	U	0.02	U			6020A
Lead			0.008	J	0.006	J			6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.06	0.04				
Copper	0.0	50.0	2.38	47.7	95			
Lead	0.0		0.17	0.14				
Zinc	0.0	25.0	2.04	26.4	106			

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** NA

Matrix: WATER

Sample Name: Batch QC1A **Lab Code:** K1608011-007A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	21.572		0.012	J	20.0	108		6020A
Copper	75 - 125	22.14		0.12		20.0	110		6020A
Lead	75 - 125	21.497		0.037		20.0	107		6020A
Zinc	75 - 125	22.49		0.30	J	20.0	111		6020A

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	49.8	100					
Copper	12.5	12.8	102					
Lead	50	50.6	101					
Zinc	25	23.9	96					

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	50.7	101					
Copper	12.5	12.7	102					
Lead	50	51.7	103					
Zinc	25	24.4	98					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **Batch QC1L** **Lab Code:** **K1608011-007L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	0.012	J	0.030	U	100.0		MS
Copper	0.12		0.11	J	8		MS
Lead	0.037		0.034	J	8		MS
Zinc	0.30	J	2.19	J	630		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-03**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.050	0.013	0.006	MS
Copper	65		0.10	0.05	0.02	MS
Lead	208		0.020	0.010	0.004	MS
Zinc	66		0.50	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	15.000	2000	6020A
Copper	15.000	2000	6020A
Lead	15.000	2000	6020A
Zinc	15.000	2000	6020A

Comments:

Metals

-13-

PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608210-015	7/21/2016	25.0	25.0
KQ1608449-01	7/21/2016	25.0	25.0
KQ1608449-02	7/21/2016	25.0	25.0
KQ1608449-03	7/21/2016	25.0	25.0

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608210-015	8/4/2016	25.0	25.0
KQ1609201-01	8/4/2016	25.0	25.0
KQ1609201-02	8/4/2016	25.0	25.0
KQ1609201-03	8/4/2016	25.0	25.0

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
Cal. Blk	1.0	11:58			X								X		X														
Cal. Stn	1.0	12:05			X								X		X														
ICV1	1.0	12:08			X								X		X														
CCV1	1.0	12:13			X								X		X														
ZZZZZZ	1.0	12:20																											
ICB1	1.0	12:24			X								X		X														
CCB1	1.0	12:28			X								X		X														
LLICVW1	1.0	12:32			X								X		X														
ZZZZZZ	1.0	12:35																											
ICS-A1	1.0	12:43			X								X		X														
ICS-AB1	1.0	12:46			X								X		X														
ZZZZZZ	1.0	12:50																											
ZZZZZZ	1.0	13:06																											
ZZZZZZ	1.0	13:10																											
ZZZZZZ	1.0	13:14																											
ZZZZZZ	5.0	13:18																											
ZZZZZZ	1.0	13:22																											
ZZZZZZ	1.0	13:25																											
ZZZZZZ	1.0	13:29																											
ZZZZZZ	1.0	13:33																											
CCV2	1.0	13:36			X								X		X														
CCB2	1.0	13:44			X								X		X														
ZZZZZZ	1.0	13:48																											
ZZZZZZ	1.0	13:52																											
ZZZZZZ	1.0	13:55																											
ZZZZZZ	1.0	13:59																											
ZZZZZZ	1.0	14:03																											
ZZZZZZ	1.0	14:07																											
ZZZZZZ	1.0	14:10																											
ZZZZZZ	1.0	14:14																											
ZZZZZZ	1.0	14:17																											
CCV3	1.0	14:21			X								X		X														

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
ZZZZZZ	1.0	14:30																												
CCB3	1.0	14:34			X								X		X															
LLCCVW1	1.0	14:37			X								X		X															
KQ1608449-01	1.0	14:41			X								X		X															
KQ1608449-02	1.0	14:45			X								X		X															
KQ1608449-03	1.0	14:50			X								X		X															
ZZZZZZ	1.0	14:55																												
K1608011-007L	5.0	14:59			X								X		X															
K1608011-007A	1.0	15:02			X								X		X															
ZZZZZZ	1.0	15:06																												
ZZZZZZ	1.0	15:10																												
K1608210-015	1.0	15:14			X								X		X															
CCV4	1.0	15:17			X								X		X															
ZZZZZZ	1.0	15:27																												
CCB4	1.0	15:30			X								X		X															
ZZZZZZ	1.0	15:34																												
ZZZZZZ	1.0	15:37																												
ZZZZZZ	1.0	15:43																												
ZZZZZZ	1.0	15:49																												
ZZZZZZ	5.0	15:53																												
ZZZZZZ	1.0	15:56																												
ZZZZZZ	1.0	16:00																												
CCV5	1.0	16:04			X								X		X															
CCB5	1.0	16:13			X								X		X															
LLCCVW2	1.0	16:17			X								X		X															

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608210

Project No.: 06261038.0001.00400 **Run Number:** 080516AMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/5/2016 **End Date:** 8/5/2016

Sample No.	D/F	Time	% R	Analytes																									
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Cal. Blk	1.0	05:39																							X	
Cal. Stn	1.0	05:42																							X	
ICV1	1.0	05:44																							X	
CCV1	1.0	05:46																							X	
ICB1	1.0	05:48																							X	
CCB1	1.0	05:57																							X	
LLICVW1	1.0	05:59																							X	
ZZZZZZ	1.0	06:01																								
ICS-A1	1.0	06:05																							X	
ICS-AB1	1.0	06:08																							X	
KQ1609201-01	1.0	06:10																							X	
KQ1609201-02	1.0	06:12																							X	
KQ1609201-03	1.0	06:14																							X	
ZZZZZZ	1.0	06:16																								
K1608011-007L	5.0	06:19																							X	
K1608011-007A	1.0	06:21																							X	
CCV2	1.0	06:23																							X	
CCB2	1.0	06:25																							X	
ZZZZZZ	1.0	06:28																								
ZZZZZZ	1.0	06:30																								
K1608210-015	1.0	06:32																							X	
ZZZZZZ	1.0	06:34																								
ZZZZZZ	1.0	06:37																								
CCV3	1.0	06:39																							X	
CCB3	1.0	06:41																							X	
LLCCVW1	1.0	06:43																							X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608210

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
Cal. Blk	Cal. Blk	1158	100		100		100		100		100		100	
Cal. Stn	Cal. Stn	1205	97		99		100		100		101		102	
ICV1	ICV1	1208	96		99		100		100		100		102	
CCV1	CCV1	1213	103		99		100		100		101		101	
ZZZZZZ	ZZZZZZ	1220												
ICB1	ICB1	1224	107		100		100		101		100		100	
CCB1	CCB1	1228	107		101		100		101		101		100	
LLICVW1	LLICVW1	1232	103		99		99		100		100		100	
ZZZZZZ	ZZZZZZ	1235												
ICS-A1	ICSA	1243	100		95		94		90		92		93	
ICS-AB1	ICSAB	1246	103		97		95		92		95		97	
ZZZZZZ	ZZZZZZ	1250												
ZZZZZZ	ZZZZZZ	1306												
ZZZZZZ	ZZZZZZ	1310												
ZZZZZZ	ZZZZZZ	1314												
ZZZZZZ	ZZZZZZ	1318												
ZZZZZZ	ZZZZZZ	1322												
ZZZZZZ	ZZZZZZ	1325												
ZZZZZZ	ZZZZZZ	1329												
ZZZZZZ	ZZZZZZ	1333												
CCV2	CCV2	1336	95		95		97		99		99		101	
CCB2	CCB2	1344	99		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1348												
ZZZZZZ	ZZZZZZ	1352												
ZZZZZZ	ZZZZZZ	1355												
ZZZZZZ	ZZZZZZ	1359												
ZZZZZZ	ZZZZZZ	1403												
ZZZZZZ	ZZZZZZ	1407												
ZZZZZZ	ZZZZZZ	1410												
ZZZZZZ	ZZZZZZ	1414												
ZZZZZZ	ZZZZZZ	1417												
CCV3	CCV3	1421	102		98		98		98		98		99	
ZZZZZZ	ZZZZZZ	1430												
CCB3	CCB3	1434	104		99		100		101		100		99	
LLCCVW1	LLCCVW1	1437	103		100		99		101		100		99	
KQ1608449-01	Method Blank	1441	103		98		98		98		98		98	
KQ1608449-02	Lab Control	1445	103		99		99		100		99		99	
KQ1608449-03	Duplicate Lab	1450	101		97		98		99		98		99	
ZZZZZZ	ZZZZZZ	1455												
K1608011-007L	Batch QC1L	1459	99		97		97		98		98		99	
K1608011-007A	Batch QC1A	1502	100		96		97		98		98		99	
ZZZZZZ	ZZZZZZ	1506												
ZZZZZZ	ZZZZZZ	1510												
K1608210-015	EB071516	1514	100		94		95		97		96		98	

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608210

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
CCV4	CCV4	1517	98		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1527												
CCB4	CCB4	1530	106		101		101		101		100		99	
ZZZZZZ	ZZZZZZ	1534												
ZZZZZZ	ZZZZZZ	1537												
ZZZZZZ	ZZZZZZ	1543												
ZZZZZZ	ZZZZZZ	1549												
ZZZZZZ	ZZZZZZ	1553												
ZZZZZZ	ZZZZZZ	1556												
ZZZZZZ	ZZZZZZ	1600												
CCV5	CCV5	1604	103		99		99		99		99		100	
CCB5	CCB5	1613	106		102		100		100		99		97	
LLCCVW2	LLCCVW2	1617	107		101		101		101		100		98	

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608210

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/05/2016 End Date: 08/05/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ga_71	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
Cal. Blk	Cal. Blk	0539	100											
Cal. Stn	Cal. Stn	0542	102											
ICV1	ICV1	0544	101											
CCV1	CCV1	0546	101											
ICB1	ICB1	0548	101											
CCB1	CCB1	0557	99											
LLICVW1	LLICVW1	0559	98											
ZZZZZZ	ZZZZZZ	0601												
ICS-A1	ICSA	0605	93											
ICS-AB1	ICSAB	0608	93											
KQ1609201-01	Method Blank	0610	94											
KQ1609201-02	Lab Control	0612	95											
KQ1609201-03	Duplicate Lab	0614	95											
ZZZZZZ	ZZZZZZ	0616												
K1608011-007L	Batch QC1L	0619	95											
K1608011-007A	Batch QC1A	0621	95											
CCV2	CCV2	0623	95											
CCB2	CCB2	0625	95											
ZZZZZZ	ZZZZZZ	0628												
ZZZZZZ	ZZZZZZ	0630												
K1608210-015	EB071516	0632	94											
ZZZZZZ	ZZZZZZ	0634												
ZZZZZZ	ZZZZZZ	0637												
CCV3	CCV3	0639	95											
CCB3	CCB3	0641	95											
LLCCVW1	LLCCVW1	0643	96											

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Benchsheet

Service Request #: K1608210, KQ1609056, K1608209 **Run #:** 507983
Test: TS **Balance ID:** K-Balance-16
Method: 160.3 Modified

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1608210-003	1.30	12.65	12.72	11.4	90.3	
	K1608210-003DUP	1.32	13.29	13.32	12.0	90.3	<1
	K1608210-004	1.31	10.74	11.32	10.0	93.2	
	K1608210-005	1.28	11.86	12.16	10.9	91.7	
	K1608210-006	1.30	12.21	12.84	11.5	94.5	
	K1608210-010	1.29	11.11	11.73	10.4	94.0	
	K1608210-011	1.30	11.73	12.73	11.4	97.4	
	K1608210-012	1.29	10.42	10.94	9.65	92.6	
	K1608210-013	1.31	10.49	11.50	10.2	97.1	
	K1608210-014	1.31	13.26	14.09	12.8	96.4	
	K1608209-004	1.29	14.46	15.63	14.3	99.2	
	K1608209-005	1.29	10.39	10.59	9.30	89.5	
	K1608209-006	1.32	11.34	12.54	11.2	98.9	
	K1608209-007	1.30	10.13	11.35	10.1	99.2	
	K1608209-010	1.30	16.12	14.92	13.6	84.5	
	K1608209-010DUP	1.31	11.89	11.22	9.91	83.3	1
	K1608209-011	1.30	13.46	13.39	12.1	89.8	
	K1608209-012	1.30	14.50	14.36	13.1	90.1	
	K1608209-013	1.29	10.38	11.31	10.0	96.5	
	K1608209-014	1.31	11.04	12.17	10.9	98.4	

	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
Oven1	K-OVEN 07	105	105	8/1/2016	16:13	8/2/2016	08:43	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	K-Balance-16	1.00, 100.01	1.00, 100.01	8/1/2016	15:55	8/1/2016	16:13
Calibration2	K-Balance-16	1.00, 100.00	1.00, 100.01	8/2/2016	08:58	8/2/2016	09:01

Comments: ZR Reviewed 8-2-16 L.J.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 267971 **Prep Workflow:** MetDigSICP **Status:** Prepped **Prep Date:** 08/05/2016 12:50
Team: Metals **Prep Method:** EPA 3050B **Current Step:** Digestion **Due Date:** 08/06/2016
Analyst: AURBAN **Rush/NPDES:** N/A **Hold Date:** 01/11/2017

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1609274-01	Method Blank		1.00 g	As Received.	100 mL			10% HNO3, 10% HCl
KQ1609274-02	Lab Control Sample		1.01 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608207-003	FTBL-SS-B57-0-6-071816	.01	1.25 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-003: KQ1609274-03	Matrix Spike	.01	1.22 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608207-003: KQ1609274-04	Duplicate Matrix Spike	.01	1.23 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608207-004	FTBL-SS-B58-0-6-071816	.01	1.27 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-005	FTBL-SS-B59-0-6-071816	.01	1.37 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-006	FTBL-SS-B60-0-6-071816	.01	1.24 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-010	FTBL-SS-B51-0-6-071816	.01	1.16 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-011	FTBL-SS-B52-0-6-071816	.01	1.20 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-012	FTBL-SS-B53-0-6-071816	.01	1.35 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-013	FTBL-SS-B54-0-6-071816	.01	1.10 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608207-014	FD071816	.01	1.19 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-003	FTBL-SS-B27-0-6-071516	.01	1.43 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-004	FTBL-SS-B28-0-6-071516	.01	1.24 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-005	FTBL-SS-B29-0-6-071516	.01	1.31 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-006	FTBL-SS-B30-0-6-071516	.01	1.34 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-010	FTBL-SS-B39-0-6-071516	.01	1.23 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-011	FTBL-SS-B40-0-6-071516	.01	1.22 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-012	FD071516	.01	1.32 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-013	FTBL-SS-B42-0-6-071516	.01	1.33 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608210-014	FTBL-SS-B41-0-6-071516	.01	1.21 g	As Received.	100 mL			10% HNO3, 10% HCl

22 Total Samples consisting of 18 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET SS1	Spike	174411	7/12/2017	K-MET SS4	Spike	174221	10/14/2016
K-MET SS3	Spike	174614	3/18/2017	K-MET SS5	Spike	174153	1/28/2017

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	Teflon Chips	69101	Digestion	K-MET 100ml Centrifuge Tube	172987
Digestion	K-MET HCL	87502	Digestion	K-MET H2O2	174426
Digestion	K-MET HNO3	87968			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-Balance-02	Date Checked	8/5/16		Digestion	K-BlockDigester-04	Observed Temperature	95.0	deg C
Digestion	K-BlockDigester-04	Corrected Temperature	95.0	deg C	Digestion	K-BlockDigester-04	Thermometer ID 1110287		NONE
Digestion	K-BlockDigester-04	Correction Factor	0.0	deg C	Digestion	K-BlockDigester-04	Thermometer Location	31	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	05-AUG-16 12:50	05-AUG-16 14:57	AURBAN		N	

Comments

First reflux on at 1250 off at 1305. Second reflux on at 1310 off at 1410. HCl reflux on at 1442 off at 1457.

Review

Reviewed by: _____ Date: 8/8/16

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
	V	100*	1000ml	50	
	Zn	100*	1000ml	50	
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	50	500ml	100	
	Mo	50	500ml	100	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	
K-MET GFLCSW	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.

** Denotes 10,000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

Service Request # K1608210
Calibration 082416DMS04
QC in calibration 082416DMS04
QC Service Request # K1608207
STARLIMS run # 511491

CAL STD	MS20-83-G	ICSA STD	MS20-83-H
ICV STD	MS20-72-E	ICSAB STD	MS20-83-I
LLICV STD	MS20-72-F		
Internal STD	MS20-58-A		

6020 DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD limit?	X		
12. Spikes within DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?		X	
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?	X		
21. Cd Correction Applied?		X	
22. Was run prematurely stopped, If so why?		X	

Comments: LRSTD : 1000ppb

Primary Review by JDB Date 8/25/16
Secondary Review by [signature] Date 8/26/16

Data Review Form

Service Request #: **K1608210**
Instrument ID#: **K-ICP-MS-04**
DataFile Name: **R:\ICP\WIP\DATA\K-ICP-MS-04 (NexION)\082416d.txt**
RUNNO: **511491**

K1608207-003MS - Metals T
MS Recovery
6020A/Metals T - Sb-KED2 - Recovery: 38 Limits: 72 - 124

K1608207-003DMS - Metals T
DMS Recovery
6020A/Metals T - Sb-KED2 - Recovery: 38 Limits: 72 - 124
6020A/Metals T - Pb-KED2 - Recovery: 83 Limits: 84 - 118

→ SD, PS, LCSD Pass.

Analytical Method 6020A

Primary Approver: JBB 8/25/16

Secondary Approver: 8/25/16

Dataset Report

User Name: ALKLS.ALKLSXP373
Computer Name: ALKLSXP373
Dataset File Path: C:\NexION Data\DataSet\082416D\
Report Date/Time: Thursday, August 25, 2016 11:24:35

The Dataset

Sample ID	Date and Time	Read Type	Description	Batch ID	Samp. File Name
RINSE	17:08:50 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\RINSE.001
Blank	17:11:50 Wed 24-Aug-16	Blank			C:\NexION Data\DataSet\082416D\Blank.002
Standard 1	17:14:49 Wed 24-Aug-16	Standard #1			C:\NexION Data\DataSet\082416D\Standard 1
ICV	17:17:47 Wed 24-Aug-16	QC Std #1			C:\NexION Data\DataSet\082416D\ICV.004
CCV	17:20:47 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.005
ICB	17:23:46 Wed 24-Aug-16	QC Std #3			C:\NexION Data\DataSet\082416D\ICB.006
CCB	17:26:46 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.007
LLICVS	17:29:46 Wed 24-Aug-16	QC Std #5			C:\NexION Data\DataSet\082416D\LLICVS.00
ICSA	17:32:44 Wed 24-Aug-16	QC Std #7			C:\NexION Data\DataSet\082416D\ICSA.009
ICSAB	17:35:43 Wed 24-Aug-16	QC Std #8			C:\NexION Data\DataSet\082416D\ICSAB.010
KQ1609275-03	17:38:44 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
K1608325-001	17:41:43 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-002	17:44:42 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-003	17:47:41 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-004	17:50:40 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-005	17:53:39 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-006	17:56:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-007	17:59:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-008	18:02:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
CCV	18:05:38 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.020
CCB	18:08:37 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.021
K1608325-009	18:11:39 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009L	18:14:38 Wed 24-Aug-16	Sample	25		C:\NexION Data\DataSet\082416D\K1608325-
1000ppb LR	18:17:38 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\1000ppb LI
RINSE	18:20:39 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\RINSE.025
K1608325-009A	18:23:39 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009S	18:26:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009SD	18:29:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
KQ1609275-04	18:32:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
MO STD	18:35:37 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\MO STD.0
K1608325-010	18:38:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
CCV	18:41:38 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.032
CCB	18:44:37 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.033
LLCCVS	18:47:37 Wed 24-Aug-16	QC Std #6			C:\NexION Data\DataSet\082416D\LLCCVS.0
K1608325-011	18:50:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-012	18:53:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-013	18:56:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
KQ1609274-01	18:59:35 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
K1608207-003	19:02:34 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003L	19:05:33 Wed 24-Aug-16	Sample	25		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003A	19:08:32 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003S	19:11:32 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003SD	19:14:31 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
KQ1609274-02	19:17:30 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
CCV	19:20:30 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.045
CCB	19:23:30 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.046
MO STD	19:26:29 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\MO STD.0
K1608207-004	19:29:30 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-005	19:32:29 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-006	19:35:28 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-

K1608207-010	19:38:27 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608207-011	19:41:26 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608207-012	19:44:25 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608207-013	19:47:24 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608207-014	19:50:23 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608210-003	19:53:22 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
CCV	19:56:24 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.057
CCB	19:59:24 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.058
LLCCVS	20:02:24 Wed 24-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.0
K1608210-004	20:05:25 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-005	20:08:24 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-006	20:11:23 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-010	20:14:22 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-011	20:17:21 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-012	20:20:20 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-013	20:23:19 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-014	20:26:18 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
KQ1609920-03	20:29:17 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\KQ160992
K1608344-002	20:32:16 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
CCV	20:35:18 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.070
CCB	20:38:17 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.071
K1608344-003	20:41:19 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-004	20:44:18 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-005	20:47:17 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-008	20:50:16 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-009	20:53:15 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-010	20:56:14 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-011	20:59:13 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-011L	21:02:12 Wed 24-Aug-16	Sample	25	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-011A	21:05:11 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-011S	21:08:09 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
CCV	21:11:10 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.082
CCB	21:14:10 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.083
LLCCVS	21:17:09 Wed 24-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.0
K1608344-011SD	21:20:10 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
KQ1609920-04	21:23:09 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\KQ160992
MO STD	21:26:10 Wed 24-Aug-16	Sample		C:\NexION Data\DataSet\082416D\MO STD.0
K1608344-012	21:29:11 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
KQ1609300-03	21:32:10 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\KQ160930
K1608209-004	21:35:09 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-005	21:38:10 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-006	21:41:08 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-007	21:44:08 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-010	21:47:07 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
CCV	21:50:07 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.095
CCV	21:52:26 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.096
CCB	21:55:25 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.097
K1608209-010L	21:58:26 Wed 24-Aug-16	Sample	25	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-010A	22:01:25 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-010S	22:04:24 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-010SD	22:07:23 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
KQ1609300-04	22:10:22 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\KQ160930
MO STD	22:13:24 Wed 24-Aug-16	Sample		C:\NexION Data\DataSet\082416D\MO STD.1
K1608209-011	22:16:25 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-012	22:19:24 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-013	22:22:23 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-014	22:25:22 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
CCV	22:28:23 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.108
CCB	22:31:22 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.109
LLCCVS	22:34:22 Wed 24-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.1

K1608209-005	09:25:53 Thu 25-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
CCV	09:28:54 Thu 25-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.112
CCB	09:31:53 Thu 25-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.113
LLCCVS	09:34:53 Thu 25-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.1
LLCCVS	09:37:11 Thu 25-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.1
LLCCVS	09:45:34 Thu 25-Aug-16	Sample		C:\NexIONData\DataSet\082416D\LLCCVS.1

SmartTune Wizard - Details

)ptimization Details

;martTune file: C:\NexIONData\Wizard\SmartTune\CAS SmartTune Full FAST.swz

)ptimization Status

;tart Time: 8/24/2016 10:24:21 AM

lass Calibration and Resolution
Optimization Settings:
Method: C:\NexIONData\Method\CAS Tuning.mth.
MassCal File: C:\NexIONData\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.1 for Mass Cal. and 0.1 for Resolution
Peak height (%) for Res. Opt.: 5

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.704)
Target/Obtained mass (9.0122/9.075), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.700)
Target/Obtained mass (58.9332/58.925), Target/Obtained resolution (0.7/0.692)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.684)
Target/Obtained mass (139.905/139.925), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (207.977/207.975), Target/Obtained resolution (0.7/0.695)
Target/Obtained mass (208.98/208.975), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.694)
Passed] Optimum value(s): N/A

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Wednesday, August 24, 2016 10:28:39
Sample Description:
Method File: C:\NexION\Data\Method\CAS Daily Performance.mth
Dataset File: C:\NexION\Data\Dataset\Default\Daily Performance Check.3538
MassCal File: C:\NexION\Data\MassCal\Default.tun
Conditions File: C:\NexION\Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Li	7.0	28977.1	28977.093	224.933	0.8	Standard
	Be	9.0	9171.5	9171.478	210.427	2.3	Standard
	Mg	24.0	27457.0	27457.035	520.912	1.9	Standard
	Co	58.9	29211.7	29211.711	545.363	1.9	Standard
	In	114.9	62607.9	62607.857	1090.759	1.7	Standard
	Pb	208.0	46834.1	46834.063	274.246	0.6	Standard
	Bi	209.0	37192.9	37192.893	507.538	1.4	Standard
	U	238.1	43013.5	43013.464	453.345	1.1	Standard
⌈	CeO	155.9	779.9	0.017	0.001	4.1	Standard
| >	Ce	139.9	45218.5	45218.523	413.726	0.9	Standard
⌊	Ce++	70.0	932.4	0.021	0.001	3.8	Standard
	Bkgd	220.0	0.0	0.000	0.000		Standard

Replicates

Repeat 1

Analyte	Mass	Meas. Intensity
Li	7	29031.469
Be	9	9361.733
Mg	24	27615.332
Co	59	28951.975
In	115	64276.276
Pb	208	47208.808
Bi	209	37692.994
U	238	42650.238
CeO	156	777.354
Ce	140	44997.422
Ce++	70	927.363
Bkgd	220	0.000

Repeat 2

Analyte	Mass	Meas. Intensity
Li	7	29141.025
Be	9	9108.236
Mg	24	26532.616
Co	59	28640.681
In	115	61917.224
Pb	208	46594.984
Bi	209	37748.474
U	238	42578.023
CeO	156	757.353
Ce	140	44627.598
Ce++	70	934.031
Bkgd	220	0.000

Repeat 3

Analyte	Mass	Meas. Intensity
Li	7	29227.201
Be	9	9417.770
Mg	24	27790.338
Co	59	30092.328
In	115	62519.840

Pb	208	47038.174
Bi	209	37085.407
U	238	43216.603
CeO	156	839.358
Ce	140	45696.302
Ce++	70	991.368
Bkgd	220	0.000

Repeat 4

Analyte	Mass	Meas. Intensity
Li	7	28730.862
Be	9	8927.455
Mg	24	27696.155
Co	59	29285.320
In	115	62902.849
Pb	208	46708.146
Bi	209	36791.315
U	238	42935.758
CeO	156	778.688
Ce	140	45420.759
Ce++	70	920.696
Bkgd	220	0.000

Repeat 5

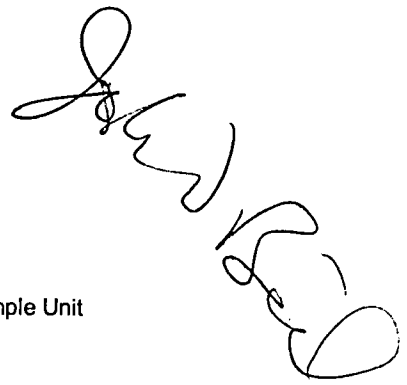
Analyte	Mass	Meas. Intensity
Li	7	28754.910
Be	9	9042.194
Mg	24	27650.734
Co	59	29088.251
In	115	61423.098
Pb	208	46620.206
Bi	209	36646.276
U	238	43686.696
CeO	156	746.686
Ce	140	45350.536
Ce++	70	888.694
Bkgd	220	0.000

Current Conditions File Data

Current Value	Description
0.87	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
16.00	Plasma Gas Flow
-9.50	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-14.50	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.87	DRC Mode NEB
-6.50	DRC Mode QRO
-1.50	DRC Mode CRO
-10.00	DRC Mode Cell Entrance/Exit Voltage
3.50	Cell Gas A
0.00	Cell Gas B
280.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-40.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

LABWORKS - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, August 24, 2016 17:11:50
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\Blank.002
User Name: JDB
Batch ID:



Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	22.0	32.8			ppb
	Cu-KED3	65	13.0	35.3			ppb
	Zn-KED3	66	7.3	41.7			ppb
>	Ge-KED3	72	13511.1	1.9			ppb
>	In-KED2	115	14199.0	2.3			ppb
	Sb-KED2	121	42.7	39.0			ppb
	Sb-KED2	123	27.6	18.6			ppb
>	Lu-KED2	175	53932.4	3.5			ppb
	Pb-KED2	208	22.0	9.1			ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72					
>	In-KED2	115					
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175					
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, August 24, 2016 17:14:49
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\Standard 1.003
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16807.2	1.4	25.00000	1.4	ppb
|	Cu-KED3	65	8560.9	2.8	25.00000	1.3	ppb
|	Zn-KED3	66	1556.4	4.3	25.00000	4.6	ppb
⌊>	Ge-KED3	72	13608.8	2.5			ppb
⌈>	In-KED2	115	14381.4	0.7			ppb
|	Sb-KED2	121	9195.6	3.3	25.00000	4.0	ppb
⌊	Sb-KED2	123	7378.3	0.3	25.00000	1.0	ppb
⌈>	Lu-KED2	175	55017.8	3.0			ppb
⌊	Pb-KED2	208	137772.3	1.9	25.00000	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICV
Sample Date/Time: Wednesday, August 24, 2016 17:17:47
Sample Description:
Autosampler Position: 3
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICV.004
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8589.9	2.5	12.78956	2.9	ppb
|	Cu-KED3	65	4412.3	1.1	12.89705	1.0	ppb
|	Zn-KED3	66	1572.1	2.8	25.30139	1.6	ppb
⌊>	Ge-KED3	72	13577.8	1.6			ppb
⌈>	In-KED2	115	14638.3	3.0			ppb
|	Sb-KED2	121	9479.1	1.7	25.33934	4.7	ppb
⌊	Sb-KED2	123	7544.5	1.2	25.12285	1.8	ppb
⌈>	Lu-KED2	175	54101.6	1.2			ppb
⌊	Pb-KED2	208	139481.6	0.5	25.72290	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	102				
|	Cu-KED3	65	103				
|	Zn-KED3	66	101				
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		103			
|	Sb-KED2	121	101				
⌊	Sb-KED2	123	100				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	103				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 17:20:47
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.005
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16960.7	2.6	25.10516	2.6	ppb
|	Cu-KED3	65	8668.6	3.4	25.19456	3.0	ppb
|	Zn-KED3	66	1512.7	4.2	24.17422	4.2	ppb
⌊>	Ge-KED3	72	13673.2	1.1			ppb
⌈>	In-KED2	115	14452.9	1.7			ppb
|	Sb-KED2	121	9229.0	3.9	24.96286	3.6	ppb
⌊	Sb-KED2	123	7304.6	1.4	24.63300	2.9	ppb
⌈>	Lu-KED2	175	54586.1	1.1			ppb
⌊	Pb-KED2	208	137297.6	2.0	25.09856	3.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	101				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICB
Sample Date/Time: Wednesday, August 24, 2016 17:23:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICB.006
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.0	32.8	-0.00014	8386.3	ppb
|	Cu-KED3	65	12.7	19.9	-0.00121	643.5	ppb
|	Zn-KED3	66	6.0	72.6	-0.02350	286.9	ppb
⌊>	Ge-KED3	72	13625.8	2.5			ppb
⌈>	In-KED2	115	14461.3	1.6			ppb
|	Sb-KED2	121	38.7	29.4	-0.01291	243.6	ppb
⌊	Sb-KED2	123	38.0	9.9	0.03369	39.4	ppb
⌈>	Lu-KED2	175	53483.9	1.0			ppb
⌊	Pb-KED2	208	13.3	37.7	-0.00159	57.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 17:26:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.007
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.7	36.7	0.00125	970.9	ppb
|	Cu-KED3	65	8.7	52.0	-0.01257	105.8	ppb
|	Zn-KED3	66	4.7	32.7	-0.04239	60.3	ppb
⌊>	Ge-KED3	72	13371.3	1.4			ppb
⌈>	In-KED2	115	14142.7	2.4			ppb
|	Sb-KED2	121	31.3	14.7	-0.03076	48.0	ppb
⌊	Sb-KED2	123	30.5	29.5	0.01001	280.9	ppb
⌈>	Lu-KED2	175	53810.6	4.7			ppb
⌊	Pb-KED2	208	16.0	21.7	-0.00111	53.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLICVS
Sample Date/Time: Wednesday, August 24, 2016 17:29:46
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLICVS.008
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	153.3	19.6	0.19913	22.3	ppb
|	Cu-KED3	65	72.7	7.6	0.17827	13.1	ppb
|	Zn-KED3	66	67.7	6.0	0.99191	8.4	ppb
⌊>	Ge-KED3	72	13385.6	3.2			ppb
⌈>	In-KED2	115	14481.7	1.7			ppb
|	Sb-KED2	121	89.3	14.9	0.12403	27.2	ppb
⌊	Sb-KED2	123	59.0	10.8	0.10449	21.7	ppb
⌈>	Lu-KED2	175	54129.1	2.2			ppb
⌊	Pb-KED2	208	576.7	2.9	0.10230	4.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	89				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	124				
⌊	Sb-KED2	123	104				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: ICSA
Sample Date/Time: Wednesday, August 24, 2016 17:32:44
Sample Description:
Autosampler Position: 5
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICSA.009
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	332.7	3.7	0.55414	6.0	ppb
|	Cu-KED3	65	186.7	3.6	0.60816	1.7	ppb
|	Zn-KED3	66	16.3	24.7	0.19385	42.6	ppb
⌊>	Ge-KED3	72	11490.6	2.0			ppb
⌈>	In-KED2	115	12531.7	2.8			ppb
|	Sb-KED2	121	46.0	7.5	0.02611	35.9	ppb
⌊	Sb-KED2	123	35.0	19.6	0.04193	71.1	ppb
⌈>	Lu-KED2	175	50920.0	2.5			ppb
⌊	Pb-KED2	208	400.7	3.0	0.07445	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICSAB
Sample Date/Time: Wednesday, August 24, 2016 17:35:43
Sample Description:
Autosampler Position: 6
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICSAB.010
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26192.0	1.0	45.28134	1.4	ppb
|	Cu-KED3	65	13434.6	2.3	45.61223	2.5	ppb
|	Zn-KED3	66	1162.0	0.9	21.66620	2.3	ppb
⌊>	Ge-KED3	72	11715.5	2.2			ppb
⌈>	In-KED2	115	12651.5	2.6			ppb
|	Sb-KED2	121	45.3	28.7	0.02319	181.7	ppb
⌊	Sb-KED2	123	35.1	10.2	0.04096	38.2	ppb
⌈>	Lu-KED2	175	50557.3	1.4			ppb
⌊	Pb-KED2	208	394.7	8.2	0.07378	7.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	91				
|	Cu-KED3	65	91				
|	Zn-KED3	66	87				
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-03
Sample Date/Time: Wednesday, August 24, 2016 17:38:44
Sample Description: 5
Autosampler Position: 301
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-03.011
User Name: JDB
Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
Cu-KED3	63	61.3	30.3	0.06850	47.1	ppb
Cu-KED3	65	33.3	27.9	0.06992	44.8	ppb
Zn-KED3	66	47.3	19.2	0.72670	23.0	ppb
> Ge-KED3	72	12296.0	2.1			ppb
> In-KED2	115	13169.9	3.8			ppb
Sb-KED2	121	16.0	21.7	-0.07051	11.9	ppb
Sb-KED2	123	13.2	33.6	-0.04629	31.7	ppb
> Lu-KED2	175	50708.9	4.0			ppb
Pb-KED2	208	412.7	13.3	0.07694	9.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		91			
>	In-KED2	115		93			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		94			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-001
Sample Date/Time: Wednesday, August 24, 2016 17:41:43
Sample Description: 5
Autosampler Position: 302
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-001.012
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13757.3	1.6	22.92116	4.4	ppb
|	Cu-KED3	65	7001.0	2.0	22.89886	3.7	ppb
|	Zn-KED3	66	7941.5	1.0	143.43907	4.0	ppb
⌊>	Ge-KED3	72	12156.5	3.2			ppb
⌈>	In-KED2	115	12735.7	1.5			ppb
|	Sb-KED2	121	143.3	12.0	0.32411	16.8	ppb
⌊	Sb-KED2	123	123.1	12.3	0.37762	15.2	ppb
⌈>	Lu-KED2	175	52570.6	3.6			ppb
⌊	Pb-KED2	208	339169.4	1.9	64.43031	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		90			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-002
Sample Date/Time: Wednesday, August 24, 2016 17:44:42
Sample Description: 5
Autosampler Position: 303
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-002.013
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13016.6	2.5	22.77098	5.3	ppb
|	Cu-KED3	65	6751.9	2.3	23.18430	3.7	ppb
|	Zn-KED3	66	5180.9	1.5	98.20744	4.2	ppb
⌊>	Ge-KED3	72	11578.4	2.8			ppb
⌈>	In-KED2	115	12674.1	2.3			ppb
|	Sb-KED2	121	264.7	9.6	0.70356	13.8	ppb
⌊	Sb-KED2	123	222.5	8.1	0.76279	6.9	ppb
⌈>	Lu-KED2	175	52425.4	0.8			ppb
⌊	Pb-KED2	208	988623.6	1.3	188.16684	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-003
Sample Date/Time: Wednesday, August 24, 2016 17:47:41
Sample Description: 5
Autosampler Position: 304
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-003.014
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	37074.1	1.7	63.83479	2.0	ppb
|	Cu-KED3	65	19023.0	0.7	64.32801	1.5	ppb
|	Zn-KED3	66	6079.6	2.6	113.34517	2.0	ppb
⌊>	Ge-KED3	72	11764.5	1.3			ppb
⌈>	In-KED2	115	12862.4	0.8			ppb
|	Sb-KED2	121	206.7	5.0	0.51311	6.3	ppb
⌊	Sb-KED2	123	150.0	7.7	0.47561	10.0	ppb
⌈>	Lu-KED2	175	52008.2	3.0			ppb
⌊	Pb-KED2	208	662759.4	0.8	127.20702	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-004
Sample Date/Time: Wednesday, August 24, 2016 17:50:40
Sample Description: 5
Autosampler Position: 305
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-004.015
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20673.6	2.3	37.60755	5.4	ppb
|	Cu-KED3	65	10600.9	1.0	37.86567	4.6	ppb
|	Zn-KED3	66	5676.8	0.6	111.84245	4.2	ppb
⌊>	Ge-KED3	72	11144.0	3.6			ppb
⌈>	In-KED2	115	12459.0	3.1			ppb
|	Sb-KED2	121	181.3	5.7	0.45406	8.6	ppb
⌊	Sb-KED2	123	157.3	8.5	0.52186	6.6	ppb
⌈>	Lu-KED2	175	51653.5	0.3			ppb
⌊	Pb-KED2	208	614372.4	0.8	118.67650	0.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		82			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-005
Sample Date/Time: Wednesday, August 24, 2016 17:53:39
Sample Description: 5
Autosampler Position: 306
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-005.016
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	21096.9	0.7	37.17840	0.7	ppb
	Cu-KED3	65	10701.0	2.6	37.03459	2.8	ppb
	Zn-KED3	66	7196.1	0.3	137.40686	0.4	ppb
>	Ge-KED3	72	11489.3	0.6			ppb
>	In-KED2	115	12782.4	3.8			ppb
	Sb-KED2	121	136.7	20.7	0.30233	29.4	ppb
	Sb-KED2	123	102.7	15.2	0.29951	24.1	ppb
>	Lu-KED2	175	51442.2	2.3			ppb
	Pb-KED2	208	314204.3	1.1	60.96955	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		85			
>	In-KED2	115		90			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		95			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-006
Sample Date/Time: Wednesday, August 24, 2016 17:56:38
Sample Description: 5
Autosampler Position: 307
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-006.017
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21272.5	2.5	37.41008	2.6	ppb
|	Cu-KED3	65	10863.5	1.7	37.52093	2.4	ppb
|	Zn-KED3	66	5860.9	1.4	111.65831	1.7	ppb
⌊>	Ge-KED3	72	11513.3	0.7			ppb
⌈>	In-KED2	115	12420.1	1.0			ppb
|	Sb-KED2	121	197.3	6.1	0.50611	7.9	ppb
⌊	Sb-KED2	123	148.1	12.3	0.48789	13.4	ppb
⌈>	Lu-KED2	175	51833.9	2.3			ppb
⌊	Pb-KED2	208	724076.6	0.8	139.41677	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		87			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-007
Sample Date/Time: Wednesday, August 24, 2016 17:59:37
Sample Description: 5
Autosampler Position: 308
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-007.018
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10852.1	1.5	16.07406	2.7	ppb
|	Cu-KED3	65	5567.8	2.2	16.20625	6.0	ppb
|	Zn-KED3	66	4650.8	3.2	74.63535	0.6	ppb
⌊>	Ge-KED3	72	13662.2	3.7			ppb
⌈>	In-KED2	115	14062.1	1.1			ppb
|	Sb-KED2	121	264.7	5.7	0.62158	8.1	ppb
⌊	Sb-KED2	123	210.7	11.9	0.63777	13.3	ppb
⌈>	Lu-KED2	175	57306.8	2.3			ppb
⌊	Pb-KED2	208	539086.9	1.0	93.89746	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-008
Sample Date/Time: Wednesday, August 24, 2016 18:02:36
Sample Description: 5
Autosampler Position: 309
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608325-008.019
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17839.1	2.7	26.20102	3.2	ppb
|	Cu-KED3	65	9274.7	1.9	26.74852	2.2	ppb
|	Zn-KED3	66	4843.8	1.3	77.07091	2.9	ppb
⌊>	Ge-KED3	72	13783.3	2.0			ppb
⌈>	In-KED2	115	14057.2	1.9			ppb
|	Sb-KED2	121	582.0	0.7	1.50842	1.5	ppb
⌊	Sb-KED2	123	444.3	6.2	1.45116	6.6	ppb
⌈>	Lu-KED2	175	58223.4	2.2			ppb
⌊	Pb-KED2	208	1459810.9	2.2	250.17360	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:05:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.020
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17135.6	1.7	24.98285	3.5	ppb
|	Cu-KED3	65	8893.8	2.2	25.46074	3.4	ppb
|	Zn-KED3	66	1576.1	3.8	24.84199	7.9	ppb
⌊>	Ge-KED3	72	13893.1	4.0			ppb
⌈>	In-KED2	115	14877.2	4.0			ppb
|	Sb-KED2	121	9245.7	0.8	24.31655	4.1	ppb
⌊	Sb-KED2	123	7555.7	3.9	24.78177	6.6	ppb
⌈>	Lu-KED2	175	55457.5	2.6			ppb
⌊	Pb-KED2	208	137693.1	1.3	24.78655	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	102				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121	97				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:08:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.021
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14.0	0.0	-0.01249	3.0	ppb
|	Cu-KED3	65	11.0	48.1	-0.00683	212.3	ppb
|	Zn-KED3	66	3.0	88.2	-0.07146	59.4	ppb
⌊>	Ge-KED3	72	13835.4	1.9			ppb
⌈>	In-KED2	115	14472.1	1.4			ppb
|	Sb-KED2	121	31.3	32.1	-0.03275	86.5	ppb
⌊	Sb-KED2	123	34.1	27.5	0.02006	150.2	ppb
⌈>	Lu-KED2	175	54671.8	1.2			ppb
⌊	Pb-KED2	208	36.7	69.5	0.00259	175.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009
Sample Date/Time: Wednesday, August 24, 2016 18:11:39
Sample Description: 5
Autosampler Position: 310
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009.022
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11933.7	1.9	20.14639	2.4	ppb
|	Cu-KED3	65	6132.0	2.8	20.32837	3.5	ppb
|	Zn-KED3	66	5327.7	2.3	97.49563	2.9	ppb
⌊>	Ge-KED3	72	11985.4	0.7			ppb
⌈>	In-KED2	115	13108.1	2.8			ppb
|	Sb-KED2	121	118.7	10.8	0.23844	20.1	ppb
⌊	Sb-KED2	123	103.7	10.5	0.29124	10.1	ppb
⌈>	Lu-KED2	175	54162.2	0.8			ppb
⌊	Pb-KED2	208	274508.7	0.6	50.56962	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		89			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009L
Sample Date/Time: Wednesday, August 24, 2016 18:14:38
Sample Description: 25
Autosampler Position: 311
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009L.023
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2746.3	2.8	4.29828	2.7	ppb
|	Cu-KED3	65	1408.7	5.7	4.32558	5.8	ppb
|	Zn-KED3	66	1215.1	2.8	20.64461	2.8	ppb
⌊>	Ge-KED3	72	12848.8	0.3			ppb
⌈>	In-KED2	115	13843.8	3.1			ppb
|	Sb-KED2	121	55.3	47.2	0.03917	187.1	ppb
⌊	Sb-KED2	123	37.4	10.2	0.03755	47.4	ppb
⌈>	Lu-KED2	175	53517.1	2.7			ppb
⌊	Pb-KED2	208	59031.8	1.1	11.00953	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: 1000ppb LR
Sample Date/Time: Wednesday, August 24, 2016 18:17:38
Sample Description:
Autosampler Position: 124
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\1000ppb LR.024
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	648384.3	0.2	985.81018	2.0	ppb
|	Cu-KED3	65	330737.8	0.4	987.68136	2.3	ppb
|	Zn-KED3	66	59287.1	1.0	976.46035	1.1	ppb
⌊>	Ge-KED3	72	13331.6	1.9			ppb
⌈>	In-KED2	115	13975.8	2.9			ppb
|	Sb-KED2	121	353649.3	1.6	994.41063	3.8	ppb
⌊	Sb-KED2	123	282852.1	1.0	990.18826	2.0	ppb
⌈>	Lu-KED2	175	53911.2	1.8			ppb
⌊	Pb-KED2	208	5431439.9	0.6	1005.54435	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: RINSE
Sample Date/Time: Wednesday, August 24, 2016 18:20:39
Sample Description:
Autosampler Position: 123
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\RINSE.025
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41.3	14.8	0.02882	30.6	ppb
|	Cu-KED3	65	25.7	12.5	0.03717	26.2	ppb
|	Zn-KED3	66	5.3	21.7	-0.03280	55.1	ppb
⌊>	Ge-KED3	72	13542.1	0.9			ppb
⌈>	In-KED2	115	14338.2	1.5			ppb
|	Sb-KED2	121	232.7	13.2	0.51860	14.5	ppb
⌊	Sb-KED2	123	187.3	5.5	0.54366	4.9	ppb
⌈>	Lu-KED2	175	53342.4	1.0			ppb
⌊	Pb-KED2	208	95.3	7.9	0.01376	9.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009A
Sample Date/Time: Wednesday, August 24, 2016 18:23:39
Sample Description: 5 +50ppb
Autosampler Position: 312
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009A.026
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	40409.1	1.7	67.01339	5.5	ppb
|	Cu-KED3	65	20276.0	1.2	66.04478	5.7	ppb
|	Zn-KED3	66	7901.2	2.8	142.01360	7.4	ppb
⌊>	Ge-KED3	72	12234.2	4.8			ppb
⌈>	In-KED2	115	12949.2	2.6			ppb
|	Sb-KED2	121	16770.5	0.7	50.76768	2.2	ppb
⌊	Sb-KED2	123	13440.7	1.8	50.68347	1.6	ppb
⌈>	Lu-KED2	175	54912.7	1.7			ppb
⌊	Pb-KED2	208	519477.1	0.7	94.41346	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		102			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009S
Sample Date/Time: Wednesday, August 24, 2016 18:26:38
Sample Description: 5
Autosampler Position: 313
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009S.027
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	65584.9	0.8	112.13773	1.2	ppb
|	Cu-KED3	65	33389.6	1.2	112.11907	1.1	ppb
|	Zn-KED3	66	15616.9	0.7	289.28340	1.3	ppb
⌊>	Ge-KED3	72	11849.2	0.7			ppb
⌈>	In-KED2	115	12960.3	0.8			ppb
|	Sb-KED2	121	33177.2	1.3	100.42942	1.5	ppb
⌊	Sb-KED2	123	26765.4	1.7	100.92564	2.2	ppb
⌈>	Lu-KED2	175	54560.4	2.0			ppb
⌊	Pb-KED2	208	1229425.3	0.7	224.90150	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		88			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009SD
Sample Date/Time: Wednesday, August 24, 2016 18:29:37
Sample Description: 5
Autosampler Position: 314
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009SD.028
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66172.2	0.2	114.45741	2.3	ppb
|	Cu-KED3	65	34069.6	1.1	115.75200	3.2	ppb
|	Zn-KED3	66	15807.7	1.2	296.24495	3.0	ppb
⌊>	Ge-KED3	72	11716.5	2.2			ppb
⌈>	In-KED2	115	12999.1	3.3			ppb
|	Sb-KED2	121	33638.9	0.9	101.57730	2.6	ppb
⌊	Sb-KED2	123	26790.3	2.4	100.72949	1.1	ppb
⌈>	Lu-KED2	175	55716.5	2.2			ppb
⌊	Pb-KED2	208	1258981.6	0.6	225.53414	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-04
Sample Date/Time: Wednesday, August 24, 2016 18:32:36
Sample Description: 5
Autosampler Position: 315
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-04.029
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	61075.7	3.3	100.43228	6.8	ppb
|	Cu-KED3	65	31670.8	3.0	102.28434	6.7	ppb
|	Zn-KED3	66	11449.9	3.2	203.96576	6.8	ppb
⌊>	Ge-KED3	72	12340.3	3.9			ppb
⌈>	In-KED2	115	13527.4	3.5			ppb
|	Sb-KED2	121	69023.1	2.8	200.40854	3.7	ppb
⌊	Sb-KED2	123	55565.4	2.6	200.86105	1.2	ppb
⌈>	Lu-KED2	175	52621.8	2.6			ppb
⌊	Pb-KED2	208	1037460.7	1.3	196.79045	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		95			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 18:35:37
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.030
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27.3	40.3	0.00900	195.2	ppb
|	Cu-KED3	65	18.3	50.7	0.01675	165.5	ppb
|	Zn-KED3	66	9.3	37.6	0.03604	167.3	ppb
⌊>	Ge-KED3	72	13239.1	1.4			ppb
⌈>	In-KED2	115	13908.3	1.9			ppb
|	Sb-KED2	121	70.0	37.5	0.07925	90.3	ppb
⌊	Sb-KED2	123	51.9	7.0	0.08756	17.6	ppb
⌈>	Lu-KED2	175	53323.3	1.0			ppb
⌊	Pb-KED2	208	81.3	56.2	0.01120	77.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-010
Sample Date/Time: Wednesday, August 24, 2016 18:38:37
Sample Description: 5
Autosampler Position: 316
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-010.031
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	9698.0	0.8	16.79328	2.3	ppb
|	Cu-KED3	65	5084.2	2.2	17.28809	3.3	ppb
|	Zn-KED3	66	5760.2	1.9	108.18915	3.8	ppb
⌊>	Ge-KED3	72	11685.1	3.0			ppb
⌈>	In-KED2	115	12868.9	1.0			ppb
|	Sb-KED2	121	107.3	11.4	0.20975	18.7	ppb
⌊	Sb-KED2	123	81.4	15.7	0.21414	21.2	ppb
⌈>	Lu-KED2	175	53831.3	2.1			ppb
⌊	Pb-KED2	208	185656.8	1.2	34.42119	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:41:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.032
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16089.7	1.1	24.71959	0.9	ppb
|	Cu-KED3	65	8286.4	2.4	24.99570	1.0	ppb
|	Zn-KED3	66	1495.7	1.2	24.81916	3.0	ppb
⌊>	Ge-KED3	72	13174.1	1.9			ppb
⌈>	In-KED2	115	13475.5	1.6			ppb
|	Sb-KED2	121	8777.4	1.5	25.47231	2.9	ppb
⌊	Sb-KED2	123	7030.6	1.5	25.43173	3.0	ppb
⌈>	Lu-KED2	175	50414.2	1.9			ppb
⌊	Pb-KED2	208	132601.6	0.6	26.24905	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	100				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		95			
|	Sb-KED2	121	102				
⌊	Sb-KED2	123	102				
⌈>	Lu-KED2	175		93			
⌊	Pb-KED2	208	105				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:44:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.033
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	19.3	6.0	-0.00325	55.2	ppb
|	Cu-KED3	65	9.7	11.9	-0.00910	36.4	ppb
|	Zn-KED3	66	4.7	32.7	-0.04127	62.9	ppb
⌊>	Ge-KED3	72	13171.7	0.7			ppb
⌈>	In-KED2	115	14028.9	2.1			ppb
|	Sb-KED2	121	46.0	45.4	0.01047	547.5	ppb
⌊	Sb-KED2	123	41.2	15.7	0.04839	41.0	ppb
⌈>	Lu-KED2	175	54678.5	2.9			ppb
⌊	Pb-KED2	208	18.0	29.4	-0.00079	120.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 18:47:37
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.034
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	164.7	11.5	0.21089	14.6	ppb
|	Cu-KED3	65	78.7	7.4	0.19056	11.0	ppb
|	Zn-KED3	66	60.3	5.8	0.84822	6.9	ppb
⌊>	Ge-KED3	72	13696.6	1.9			ppb
⌈>	In-KED2	115	14455.7	2.5			ppb
|	Sb-KED2	121	103.3	19.0	0.16216	29.2	ppb
⌊	Sb-KED2	123	66.2	14.5	0.12906	23.9	ppb
⌈>	Lu-KED2	175	55465.8	1.9			ppb
⌊	Pb-KED2	208	621.3	2.9	0.10770	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	105				
|	Cu-KED3	65	95				
|	Zn-KED3	66	85				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	162				
⌊	Sb-KED2	123	129				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	108				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: K1608325-011
Sample Date/Time: Wednesday, August 24, 2016 18:50:38
Sample Description: 5
Autosampler Position: 317
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-011.035
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	54822.3	1.3	80.74822	1.8	ppb
|	Cu-KED3	65	27637.7	1.5	79.94694	1.9	ppb
|	Zn-KED3	66	7522.6	2.1	119.98855	2.7	ppb
⌊>	Ge-KED3	72	13754.3	1.3			ppb
⌈>	In-KED2	115	14517.5	4.1			ppb
|	Sb-KED2	121	3769.8	1.0	10.09079	3.6	ppb
⌊	Sb-KED2	123	3063.5	1.3	10.23489	3.1	ppb
⌈>	Lu-KED2	175	59191.7	1.9			ppb
⌊	~~Pb-KED2~~	~~208~~	~~17281705.6~~	~~1.8~~	~~2914.29614~~	~~3.2~~	~~ppb~~

Over Linear Range

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

JS 8/25/16

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-012
Sample Date/Time: Wednesday, August 24, 2016 18:53:37
Sample Description: 5
Autosampler Position: 318
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-012.036
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22589.2	2.2	33.48770	1.4	ppb
|	Cu-KED3	65	11756.8	1.0	34.22973	0.6	ppb
|	Zn-KED3	66	5648.8	0.7	90.71860	1.7	ppb
⌊>	Ge-KED3	72	13655.9	1.4			ppb
⌈>	In-KED2	115	14287.6	2.4			ppb
|	Sb-KED2	121	338.7	9.0	0.81325	10.6	ppb
⌊	Sb-KED2	123	261.4	2.7	0.80057	5.4	ppb
⌈>	Lu-KED2	175	58186.6	0.4			ppb
⌊	Pb-KED2	208	924924.8	1.8	158.60167	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-013
Sample Date/Time: Wednesday, August 24, 2016 18:56:36
Sample Description: 5
Autosampler Position: 319
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-013.037
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41003.4	2.0	59.51113	1.9	ppb
|	Cu-KED3	65	21144.6	1.7	60.26971	1.7	ppb
|	Zn-KED3	66	7660.1	1.9	120.40587	1.9	ppb
⌊>	Ge-KED3	72	13954.8	0.0			ppb
⌈>	In-KED2	115	14325.4	2.8			ppb
|	Sb-KED2	121	409.3	3.7	1.00495	5.5	ppb
⌊	Sb-KED2	123	319.9	4.4	0.99729	3.8	ppb
⌈>	Lu-KED2	175	57653.5	3.8			ppb
⌊	Pb-KED2	208	2271766.3	1.6	393.66609	5.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-01
Sample Date/Time: Wednesday, August 24, 2016 18:59:35
Sample Description: 5
Autosampler Position: 320
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609274-01.038
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43.3	57.7	0.03308	122.6	ppb
|	Cu-KED3	65	15.0	52.9	0.00665	382.5	ppb
|	Zn-KED3	66	30.3	33.3	0.37974	48.8	ppb
⌊>	Ge-KED3	72	13463.3	3.6			ppb
⌈>	In-KED2	115	14766.0	0.5			ppb
|	Sb-KED2	121	20.0	30.0	-0.06477	25.0	ppb
⌊	Sb-KED2	123	12.7	16.2	-0.05278	13.0	ppb
⌈>	Lu-KED2	175	55555.5	1.6			ppb
⌊	Pb-KED2	208	311.3	19.9	0.05187	21.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003
Sample Date/Time: Wednesday, August 24, 2016 19:02:34
Sample Description: 5
Autosampler Position: 321
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003.039
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28814.4	2.1	41.50209	1.6	ppb
|	Cu-KED3	65	14819.0	0.3	41.93087	3.0	ppb
|	Zn-KED3	66	8934.1	0.9	139.47166	3.3	ppb
⌊>	Ge-KED3	72	14061.6	2.9			ppb
⌈>	In-KED2	115	14689.3	1.3			ppb
|	Sb-KED2	121	205.3	11.9	0.43063	13.9	ppb
⌊	Sb-KED2	123	164.6	6.4	0.45335	9.3	ppb
⌈>	Lu-KED2	175	57238.9	3.8			ppb
⌊	Pb-KED2	208	433908.8	2.3	75.73415	5.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003L
Sample Date/Time: Wednesday, August 24, 2016 19:05:33
Sample Description: 25
Autosampler Position: 322
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003L.040
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	6288.1	2.0	8.76190	3.4	ppb
|	Cu-KED3	65	3266.0	1.3	8.93159	1.4	ppb
|	Zn-KED3	66	1912.1	1.8	28.85805	3.3	ppb
⌊>	Ge-KED3	72	14494.7	2.2			ppb
⌈>	In-KED2	115	15519.0	0.6			ppb
|	Sb-KED2	121	60.0	10.0	0.03384	45.2	ppb
⌊	Sb-KED2	123	60.4	10.9	0.09519	20.6	ppb
⌈>	Lu-KED2	175	57681.9	1.8			ppb
⌊	Pb-KED2	208	91301.6	0.9	15.79201	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003A
Sample Date/Time: Wednesday, August 24, 2016 19:08:32
Sample Description: 5 +50ppb
Autosampler Position: 323
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003A.041
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	62226.6	0.4	89.95883	2.0	ppb
|	Cu-KED3	65	32106.4	1.7	91.14252	1.3	ppb
|	Zn-KED3	66	12167.2	2.4	190.48179	1.2	ppb
⌊>	Ge-KED3	72	14015.5	1.6			ppb
⌈>	In-KED2	115	14573.8	2.7			ppb
|	Sb-KED2	121	19122.8	1.9	51.43981	3.0	ppb
⌊	Sb-KED2	123	15311.4	0.1	51.31767	2.8	ppb
⌈>	Lu-KED2	175	58962.8	1.4			ppb
⌊	Pb-KED2	208	707622.0	1.1	119.76963	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003S
Sample Date/Time: Wednesday, August 24, 2016 19:11:32
Sample Description: 5
Autosampler Position: 324
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003S.042
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	96007.5	0.1	138.82164	1.4	ppb
|	Cu-KED3	65	49006.2	0.3	139.17446	1.8	ppb
|	Zn-KED3	66	20364.2	0.9	319.02374	2.3	ppb
⌊>	Ge-KED3	72	14013.5	1.5			ppb
⌈>	In-KED2	115	14800.8	1.8			ppb
|	Sb-KED2	121	28194.5	0.5	74.71318	1.5	ppb
⌊	Sb-KED2	123	22952.5	0.5	75.76965	1.7	ppb
⌈>	Lu-KED2	175	59182.4	1.5			ppb
⌊	Pb-KED2	208	1516079.5	1.5	255.67736	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003SD
Sample Date/Time: Wednesday, August 24, 2016 19:14:31
Sample Description: 5
Autosampler Position: 325
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003SD.043
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	92556.9	0.8	133.49609	0.6	ppb
|	Cu-KED3	65	47803.9	1.7	135.41397	1.6	ppb
|	Zn-KED3	66	20692.3	1.3	323.33310	1.4	ppb
⌊>	Ge-KED3	72	14046.9	0.6			ppb
⌈>	In-KED2	115	14549.2	2.4			ppb
|	Sb-KED2	121	28670.1	2.0	77.28767	1.5	ppb
⌊	Sb-KED2	123	22927.2	1.9	76.98748	0.6	ppb
⌈>	Lu-KED2	175	59706.6	3.3			ppb
⌊	Pb-KED2	208	1436600.4	0.8	240.26528	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-02
Sample Date/Time: Wednesday, August 24, 2016 19:17:30
Sample Description: 5
Autosampler Position: 326
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609274-02.044
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	70748.1	0.2	96.82903	1.2	ppb
|	Cu-KED3	65	36111.6	1.7	97.07193	2.4	ppb
|	Zn-KED3	66	12892.5	2.6	191.12099	2.6	ppb
⌊>	Ge-KED3	72	14802.7	1.0			ppb
⌈>	In-KED2	115	15212.7	1.3			ppb
|	Sb-KED2	121	74789.3	0.9	192.98203	0.7	ppb
⌊	Sb-KED2	123	60683.4	0.5	195.04042	1.7	ppb
⌈>	Lu-KED2	175	58837.9	1.6			ppb
⌊	Pb-KED2	208	1124414.0	1.0	190.73309	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		110			
⌈>	In-KED2	115		107			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:20:30
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.045
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18383.8	2.5	25.27169	2.7	ppb
|	Cu-KED3	65	9437.8	1.7	25.47483	1.6	ppb
|	Zn-KED3	66	1655.8	1.2	24.57229	0.4	ppb
⌊>	Ge-KED3	72	14724.3	1.5			ppb
⌈>	In-KED2	115	15360.0	2.7			ppb
|	Sb-KED2	121	9712.0	2.1	24.73703	4.8	ppb
⌊	Sb-KED2	123	7787.7	2.0	24.70856	1.7	ppb
⌈>	Lu-KED2	175	57876.7	0.3			ppb
⌊	Pb-KED2	208	145007.0	1.6	24.99489	1.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:23:30
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.046
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13.3	37.7	-0.01453	47.2	ppb
|	Cu-KED3	65	6.7	22.9	-0.02015	20.1	ppb
|	Zn-KED3	66	5.7	27.0	-0.03408	65.7	ppb
⌊>	Ge-KED3	72	14603.5	0.7			ppb
⌈>	In-KED2	115	15432.7	2.2			ppb
|	Sb-KED2	121	40.7	45.7	-0.01501	302.0	ppb
⌊	Sb-KED2	123	39.5	14.4	0.03020	54.9	ppb
⌈>	Lu-KED2	175	57083.2	3.2			ppb
⌊	Pb-KED2	208	24.7	33.8	0.00027	595.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		108			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 19:26:29
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\MO STD.047
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45.3	33.7	0.03175	68.3	ppb
|	Cu-KED3	65	21.3	21.1	0.02158	58.8	ppb
|	Zn-KED3	66	12.3	9.4	0.07171	24.1	ppb
⌊>	Ge-KED3	72	14183.7	0.4			ppb
⌈>	In-KED2	115	15440.8	1.1			ppb
|	Sb-KED2	121	45.3	43.5	-0.00303	1610.4	ppb
⌊	Sb-KED2	123	37.5	10.7	0.02371	49.6	ppb
⌈>	Lu-KED2	175	58055.4	0.6			ppb
⌊	Pb-KED2	208	42.7	31.9	0.00326	71.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-004
Sample Date/Time: Wednesday, August 24, 2016 19:29:30
Sample Description: 5
Autosampler Position: 327
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-004.048
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	38324.0	2.2	55.70299	1.7	ppb
|	Cu-KED3	65	19463.9	0.5	55.56223	0.7	ppb
|	Zn-KED3	66	8024.6	0.9	126.33502	0.7	ppb
⌊>	Ge-KED3	72	13933.5	0.5			ppb
⌈>	In-KED2	115	14781.9	2.2			ppb
|	Sb-KED2	121	170.7	0.7	0.33556	2.1	ppb
⌊	Sb-KED2	123	146.1	11.5	0.38802	12.2	ppb
⌈>	Lu-KED2	175	57759.3	3.0			ppb
⌊	Pb-KED2	208	623994.7	0.4	107.85250	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-005
Sample Date/Time: Wednesday, August 24, 2016 19:32:29
Sample Description: 5
Autosampler Position: 328
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-005.049
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51880.7	1.5	75.41537	1.2	ppb
|	Cu-KED3	65	26494.9	1.2	75.63921	0.9	ppb
|	Zn-KED3	66	10611.6	0.9	167.09160	0.9	ppb
⌊>	Ge-KED3	72	13934.5	0.4			ppb
⌈>	In-KED2	115	15004.5	2.2			ppb
|	Sb-KED2	121	232.7	2.2	0.49126	4.3	ppb
⌊	Sb-KED2	123	187.0	1.1	0.51469	3.6	ppb
⌈>	Lu-KED2	175	58713.1	2.4			ppb
⌊	Pb-KED2	208	728798.5	1.7	123.89703	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-006
Sample Date/Time: Wednesday, August 24, 2016 19:35:28
Sample Description: 5
Autosampler Position: 329
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608207-006.050
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	29405.6	1.2	42.95843	0.9	ppb
|	Cu-KED3	65	14882.1	0.9	42.69577	0.6	ppb
|	Zn-KED3	66	5575.1	2.0	88.19339	1.6	ppb
⌊>	Ge-KED3	72	13860.7	0.4			ppb
⌈>	In-KED2	115	14677.0	3.6			ppb
|	Sb-KED2	121	158.7	6.9	0.30646	7.4	ppb
⌊	Sb-KED2	123	126.1	4.0	0.32579	7.8	ppb
⌈>	Lu-KED2	175	57848.1	5.2			ppb
⌊	Pb-KED2	208	330871.8	1.4	57.19315	6.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-010
Sample Date/Time: Wednesday, August 24, 2016 19:38:27
Sample Description: 5
Autosampler Position: 330
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-010.051
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51983.8	3.1	90.56508	2.2	ppb
|	Cu-KED3	65	26918.0	0.7	92.11651	0.6	ppb
|	Zn-KED3	66	7764.8	1.2	146.52507	0.8	ppb
⌊>	Ge-KED3	72	11626.4	1.2			ppb
⌈>	In-KED2	115	13035.0	0.3			ppb
|	Sb-KED2	121	670.0	5.7	1.90100	6.3	ppb
⌊	Sb-KED2	123	528.7	1.4	1.88879	1.7	ppb
⌈>	Lu-KED2	175	53206.2	1.0			ppb
⌊	Pb-KED2	208	1462819.1	1.7	274.36736	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-011
Sample Date/Time: Wednesday, August 24, 2016 19:41:26
Sample Description: 5
Autosampler Position: 331
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-011.052
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45899.0	0.8	66.48188	2.2	ppb
|	Cu-KED3	65	23565.4	2.1	67.03101	2.7	ppb
|	Zn-KED3	66	8274.4	0.4	129.79045	1.4	ppb
⌊>	Ge-KED3	72	13986.8	1.4			ppb
⌈>	In-KED2	115	14860.9	2.0			ppb
|	Sb-KED2	121	292.7	4.1	0.65563	5.0	ppb
⌊	Sb-KED2	123	242.4	6.2	0.70362	9.4	ppb
⌈>	Lu-KED2	175	58682.7	2.6			ppb
⌊	Pb-KED2	208	965939.5	0.8	164.33001	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-012
Sample Date/Time: Wednesday, August 24, 2016 19:44:25
Sample Description: 5
Autosampler Position: 332
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-012.053
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25665.0	2.0	37.12008	0.8	ppb
|	Cu-KED3	65	13310.2	1.4	37.82131	3.4	ppb
|	Zn-KED3	66	8906.8	0.2	139.61537	1.9	ppb
⌊>	Ge-KED3	72	13999.2	2.1			ppb
⌈>	In-KED2	115	14424.7	2.7			ppb
|	Sb-KED2	121	186.0	12.2	0.38957	18.6	ppb
⌊	Sb-KED2	123	154.5	7.0	0.42957	11.6	ppb
⌈>	Lu-KED2	175	56911.2	2.5			ppb
⌊	Pb-KED2	208	406149.2	0.3	71.23355	2.4	ppb

QC Calculated Values

	IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈		Cu-KED3	63					
|		Cu-KED3	65					
|		Zn-KED3	66					
⌊>		Ge-KED3	72		104			
⌈>		In-KED2	115		102			
|		Sb-KED2	121					
⌊		Sb-KED2	123					
⌈>		Lu-KED2	175		106			
⌊		Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-013
Sample Date/Time: Wednesday, August 24, 2016 19:47:24
Sample Description: 5
Autosampler Position: 333
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-013.054
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	60574.8	0.9	86.47060	0.7	ppb
|	Cu-KED3	65	31329.7	1.3	87.85406	2.8	ppb
|	Zn-KED3	66	9541.5	2.4	147.56608	4.0	ppb
⌊>	Ge-KED3	72	14191.7	1.6			ppb
⌈>	In-KED2	115	14977.8	0.6			ppb
|	Sb-KED2	121	1812.8	3.2	4.63512	2.7	ppb
⌊	Sb-KED2	123	1476.5	1.4	4.72678	1.4	ppb
⌈>	Lu-KED2	175	58036.3	1.4			ppb
⌊	Pb-KED2	208	4205697.3	0.5	723.19926	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-014
Sample Date/Time: Wednesday, August 24, 2016 19:50:23
Sample Description: 5
Autosampler Position: 334
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-014.055
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15787.4	1.0	23.13021	1.2	ppb
|	Cu-KED3	65	8129.6	1.5	23.38826	1.5	ppb
|	Zn-KED3	66	16313.6	0.7	259.22062	1.1	ppb
⌊>	Ge-KED3	72	13812.3	0.4			ppb
⌈>	In-KED2	115	14486.5	1.6			ppb
|	Sb-KED2	121	180.7	6.8	0.37154	6.8	ppb
⌊	Sb-KED2	123	144.1	14.0	0.39149	17.4	ppb
⌈>	Lu-KED2	175	59269.4	1.4			ppb
⌊	Pb-KED2	208	296209.2	1.8	49.87713	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-003
Sample Date/Time: Wednesday, August 24, 2016 19:53:22
Sample Description: 5
Autosampler Position: 335
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608210-003.056
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27002.8	1.6	38.82126	2.7	ppb
|	Cu-KED3	65	13815.7	0.7	39.00251	1.6	ppb
|	Zn-KED3	66	16568.9	2.6	258.23377	4.0	ppb
⌊>	Ge-KED3	72	14087.3	1.7			ppb
⌈>	In-KED2	115	14691.7	1.9			ppb
|	Sb-KED2	121	162.0	6.9	0.31531	10.8	ppb
⌊	Sb-KED2	123	125.1	0.4	0.32150	2.1	ppb
⌈>	Lu-KED2	175	60334.2	2.1			ppb
⌊	Pb-KED2	208	359687.9	1.4	59.50909	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:56:24
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.057
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18444.6	2.0	25.32049	0.8	ppb
|	Cu-KED3	65	9444.5	2.5	25.45800	1.2	ppb
|	Zn-KED3	66	1657.8	0.5	24.57394	0.9	ppb
⌊>	Ge-KED3	72	14741.9	1.4			ppb
⌈>	In-KED2	115	15037.7	4.3			ppb
|	Sb-KED2	121	9602.6	1.4	24.99732	5.0	ppb
⌊	Sb-KED2	123	7652.5	2.6	24.80874	2.0	ppb
⌈>	Lu-KED2	175	56734.5	3.4			ppb
⌊	Pb-KED2	208	144247.1	0.3	25.38393	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		106			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:59:24
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.058
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18.7	22.3	-0.00714	76.4	ppb
|	Cu-KED3	65	5.0	20.0	-0.02469	10.5	ppb
|	Zn-KED3	66	6.7	37.7	-0.01925	191.5	ppb
⌊>	Ge-KED3	72	14602.8	1.7			ppb
⌈>	In-KED2	115	15143.7	2.6			ppb
|	Sb-KED2	121	36.0	33.3	-0.02408	139.6	ppb
⌊	Sb-KED2	123	36.5	18.0	0.02270	80.4	ppb
⌈>	Lu-KED2	175	57168.2	0.4			ppb
⌊	Pb-KED2	208	19.3	33.3	-0.00070	159.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		108			
⌈>	In-KED2	115		107			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 20:02:24
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.059
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	176.7	13.6	0.21397	11.2	ppb
|	Cu-KED3	65	87.0	11.1	0.20200	17.4	ppb
|	Zn-KED3	66	83.0	4.8	1.14093	0.9	ppb
⌊>	Ge-KED3	72	14459.3	4.0			ppb
⌈>	In-KED2	115	15391.6	3.0			ppb
|	Sb-KED2	121	79.3	11.4	0.08450	27.1	ppb
⌊	Sb-KED2	123	60.7	17.3	0.09793	32.2	ppb
⌈>	Lu-KED2	175	58441.1	3.7			ppb
⌊	Pb-KED2	208	620.0	8.6	0.10211	12.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	107				
|	Cu-KED3	65	101				
|	Zn-KED3	66	114				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	85				
⌊	Sb-KED2	123	98				
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-004
Sample Date/Time: Wednesday, August 24, 2016 20:05:25
Sample Description: 5
Autosampler Position: 336
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-004.060
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22037.7	1.3	31.62240	1.7	ppb
|	Cu-KED3	65	11225.4	0.1	31.63558	2.3	ppb
|	Zn-KED3	66	12915.8	1.2	200.96518	3.6	ppb
⌊>	Ge-KED3	72	14111.3	2.4			ppb
⌈>	In-KED2	115	14529.7	2.0			ppb
|	Sb-KED2	121	144.0	12.3	0.27132	17.9	ppb
⌊	Sb-KED2	123	112.0	7.5	0.28222	11.8	ppb
⌈>	Lu-KED2	175	60734.6	3.7			ppb
⌊	Pb-KED2	208	271221.4	1.2	44.60910	4.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		113			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-005
Sample Date/Time: Wednesday, August 24, 2016 20:08:24
Sample Description: 5
Autosampler Position: 337
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-005.061
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	28120.3	1.7	41.47726	1.9	ppb
	Cu-KED3	65	14617.1	1.7	42.33635	0.6	ppb
	Zn-KED3	66	14698.2	2.7	234.92288	1.6	ppb
>	Ge-KED3	72	13729.3	1.3			ppb
>	In-KED2	115	14535.9	0.2			ppb
	Sb-KED2	121	146.0	19.2	0.27649	27.4	ppb
	Sb-KED2	123	118.7	2.4	0.30442	2.9	ppb
>	Lu-KED2	175	60470.0	0.5			ppb
	Pb-KED2	208	367510.0	0.8	60.64011	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		102			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		112			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-006
Sample Date/Time: Wednesday, August 24, 2016 20:11:23
Sample Description: 5
Autosampler Position: 338
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-006.062
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28889.2	1.3	41.98583	2.0	ppb
|	Cu-KED3	65	14810.0	0.6	42.26546	0.1	ppb
|	Zn-KED3	66	12523.2	0.8	197.21687	0.3	ppb
⌊>	Ge-KED3	72	13934.1	0.7			ppb
⌈>	In-KED2	115	14433.8	1.1			ppb
|	Sb-KED2	121	174.0	13.9	0.35503	17.3	ppb
⌊	Sb-KED2	123	130.1	11.3	0.34582	13.8	ppb
⌈>	Lu-KED2	175	60226.1	2.1			ppb
⌊	Pb-KED2	208	402039.9	2.0	66.63682	3.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-010
Sample Date/Time: Wednesday, August 24, 2016 20:14:22
Sample Description: 5
Autosampler Position: 339
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-010.063
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	37874.8	1.8	56.07131	3.3	ppb
|	Cu-KED3	65	19434.5	2.1	56.50701	3.7	ppb
|	Zn-KED3	66	9580.9	2.9	153.67312	4.5	ppb
⌊>	Ge-KED3	72	13684.9	1.5			ppb
⌈>	In-KED2	115	14485.3	2.2			ppb
|	Sb-KED2	121	359.3	1.2	0.85663	2.9	ppb
⌊	Sb-KED2	123	284.0	2.4	0.86453	4.2	ppb
⌈>	Lu-KED2	175	59261.7	2.5			ppb
⌊	Pb-KED2	208	724585.6	0.8	122.03562	2.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Rı	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-011
Sample Date/Time: Wednesday, August 24, 2016 20:17:21
Sample Description: 5
Autosampler Position: 340
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-011.064
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	42891.6	0.7	62.19830	3.8	ppb
|	Cu-KED3	65	21731.5	1.8	61.89854	4.7	ppb
|	Zn-KED3	66	8009.6	0.4	125.78249	3.4	ppb
⌊>	Ge-KED3	72	13978.5	3.2			ppb
⌈>	In-KED2	115	14754.2	1.3			ppb
|	Sb-KED2	121	1362.7	5.7	3.51173	7.2	ppb
⌊	Sb-KED2	123	1109.0	4.3	3.58069	3.2	ppb
⌈>	Lu-KED2	175	59109.1	2.6			ppb
⌊	Pb-KED2	208	3743737.7	0.8	632.30711	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-012
Sample Date/Time: Wednesday, August 24, 2016 20:20:20
Sample Description: 5
Autosampler Position: 341
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-012.065
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	39029.2	0.6	56.57766	2.1	ppb
|	Cu-KED3	65	20049.4	0.5	57.08231	2.5	ppb
|	Zn-KED3	66	11922.0	1.0	187.22073	1.1	ppb
⌊>	Ge-KED3	72	13974.8	1.9			ppb
⌈>	In-KED2	115	14848.3	0.5			ppb
|	Sb-KED2	121	327.3	10.9	0.74788	12.7	ppb
⌊	Sb-KED2	123	290.6	2.7	0.86231	2.7	ppb
⌈>	Lu-KED2	175	59678.8	1.8			ppb
⌊	Pb-KED2	208	1609253.3	2.6	269.15347	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-013
Sample Date/Time: Wednesday, August 24, 2016 20:23:19
Sample Description: 5
Autosampler Position: 342
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-013.066
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41082.4	3.1	60.54967	3.8	ppb
|	Cu-KED3	65	21470.5	2.0	62.14446	2.8	ppb
|	Zn-KED3	66	11134.3	1.7	177.78064	2.7	ppb
⌊>	Ge-KED3	72	13746.6	2.2			ppb
⌈>	In-KED2	115	14639.6	1.3			ppb
|	Sb-KED2	121	886.7	7.0	2.26195	8.2	ppb
⌊	Sb-KED2	123	719.3	3.9	2.30886	4.8	ppb
⌈>	Lu-KED2	175	59834.5	3.5			ppb
⌊	Pb-KED2	208	1886579.8	0.5	314.88971	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-014
Sample Date/Time: Wednesday, August 24, 2016 20:26:18
Sample Description: 5
Autosampler Position: 343
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-014.067
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	23983.5	1.4	35.52457	2.0	ppb
|	Cu-KED3	65	12246.2	0.8	35.62116	1.5	ppb
|	Zn-KED3	66	8429.5	1.2	135.27910	1.0	ppb
⌊>	Ge-KED3	72	13669.9	0.8			ppb
⌈>	In-KED2	115	14418.2	3.0			ppb
|	Sb-KED2	121	259.3	4.2	0.58943	8.6	ppb
⌊	Sb-KED2	123	203.0	3.7	0.59381	4.1	ppb
⌈>	Lu-KED2	175	57127.4	2.5			ppb
⌊	Pb-KED2	208	1032441.0	1.5	180.36005	1.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-03
Sample Date/Time: Wednesday, August 24, 2016 20:29:17
Sample Description: 5
Autosampler Position: 344
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\KQ1609920-03.068
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21.3	42.3	0.00115	1349.4	ppb
|	Cu-KED3	65	9.7	26.0	-0.00831	84.9	ppb
|	Zn-KED3	66	23.0	19.0	0.27549	23.9	ppb
⌊>	Ge-KED3	72	12772.4	3.8			ppb
⌈>	In-KED2	115	13975.6	0.5			ppb
|	Sb-KED2	121	16.7	27.7	-0.07116	18.4	ppb
⌊	Sb-KED2	123	13.6	27.3	-0.04731	27.7	ppb
⌈>	Lu-KED2	175	52955.0	1.8			ppb
⌊	Pb-KED2	208	91.3	7.0	0.01315	10.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-002
Sample Date/Time: Wednesday, August 24, 2016 20:32:16
Sample Description: 5
Autosampler Position: 345
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-002.069
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10917.5	1.1	15.78195	1.9	ppb
|	Cu-KED3	65	5704.5	3.0	16.18904	2.6	ppb
|	Zn-KED3	66	6203.7	1.0	97.24137	0.8	ppb
⌊>	Ge-KED3	72	13990.8	0.8			ppb
⌈>	In-KED2	115	14444.1	1.7			ppb
|	Sb-KED2	121	95.3	6.4	0.14125	12.0	ppb
⌊	Sb-KED2	123	95.2	3.6	0.22719	3.1	ppb
⌈>	Lu-KED2	175	62522.2	1.0			ppb
⌊	Pb-KED2	208	159145.2	2.0	25.39924	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		116			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 20:35:18
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.070
User Name: JDB
Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
Cu-KED3	63	17582.1	0.7	25.40409	1.3	ppb
Cu-KED3	65	8912.4	1.0	25.28500	0.4	ppb
Zn-KED3	66	1577.4	4.0	24.60349	3.5	ppb
Ge-KED3	72	14007.9	0.6			ppb
In-KED2	115	14863.5	3.4			ppb
Sb-KED2	121	9443.1	2.1	24.85598	4.3	ppb
Sb-KED2	123	7549.5	1.5	24.75922	2.0	ppb
Lu-KED2	175	58054.4	1.9			ppb
Pb-KED2	208	143593.6	0.9	24.68300	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	102				
	Cu-KED3	65	101				
	Zn-KED3	66	98				
>	Ge-KED3	72		104			
>	In-KED2	115		105			
	Sb-KED2	121	99				
	Sb-KED2	123	99				
>	Lu-KED2	175		108			
	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 20:38:17
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.071
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13.3	48.2	-0.01323	71.0	ppb
|	Cu-KED3	65	7.0	37.8	-0.01781	43.6	ppb
|	Zn-KED3	66	3.3	34.6	-0.06534	28.9	ppb
⌊>	Ge-KED3	72	13613.5	1.2			ppb
⌈>	In-KED2	115	14564.5	1.9			ppb
|	Sb-KED2	121	35.3	18.2	-0.02280	73.9	ppb
⌊	Sb-KED2	123	28.5	8.6	0.00053	1426.5	ppb
⌈>	Lu-KED2	175	55499.6	1.3			ppb
⌊	Pb-KED2	208	24.0	54.6	0.00025	953.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-003
Sample Date/Time: Wednesday, August 24, 2016 20:41:19
Sample Description: 5
Autosampler Position: 346
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-003.072
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10952.9	0.6	16.16564	1.1	ppb
|	Cu-KED3	65	5696.8	0.9	16.51187	2.4	ppb
|	Zn-KED3	66	5834.9	1.6	93.37659	1.4	ppb
⌊>	Ge-KED3	72	13703.9	1.6			ppb
⌈>	In-KED2	115	14220.8	1.2			ppb
|	Sb-KED2	121	96.0	18.2	0.14675	30.8	ppb
⌊	Sb-KED2	123	70.1	7.2	0.14593	10.1	ppb
⌈>	Lu-KED2	175	60836.0	2.8			ppb
⌊	Pb-KED2	208	140964.1	2.1	23.11988	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		113			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-004
Sample Date/Time: Wednesday, August 24, 2016 20:44:18
Sample Description: 5
Autosampler Position: 347
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\K1608344-004.073
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14996.5	1.0	22.43444	2.6	ppb
|	Cu-KED3	65	7536.7	2.2	22.13830	3.2	ppb
|	Zn-KED3	66	6798.0	2.7	110.18758	1.2	ppb
⌊>	Ge-KED3	72	13531.1	2.2			ppb
⌈>	In-KED2	115	14495.5	2.1			ppb
|	Sb-KED2	121	126.0	2.7	0.22360	7.3	ppb
⌊	Sb-KED2	123	110.5	4.5	0.27786	3.3	ppb
⌈>	Lu-KED2	175	62222.0	3.9			ppb
⌊	Pb-KED2	208	186870.5	1.0	30.00126	4.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		115			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-005
Sample Date/Time: Wednesday, August 24, 2016 20:47:17
Sample Description: 5
Autosampler Position: 348
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-005.074
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17634.9	1.1	25.88823	2.4	ppb
|	Cu-KED3	65	8815.7	2.5	25.41102	3.1	ppb
|	Zn-KED3	66	7318.2	2.0	116.41571	2.2	ppb
⌊>	Ge-KED3	72	13789.7	1.3			ppb
⌈>	In-KED2	115	14539.9	1.5			ppb
|	Sb-KED2	121	167.3	10.8	0.33403	14.6	ppb
⌊	Sb-KED2	123	150.5	5.1	0.41140	6.9	ppb
⌈>	Lu-KED2	175	61464.0	1.9			ppb
⌊	Pb-KED2	208	276688.9	0.9	44.92145	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		114			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-008
Sample Date/Time: Wednesday, August 24, 2016 20:50:16
Sample Description: 5
Autosampler Position: 349
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-008.075
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15706.0	1.4	27.28306	4.4	ppb
|	Cu-KED3	65	8052.9	2.2	27.47376	5.1	ppb
|	Zn-KED3	66	5998.6	1.1	112.96043	5.4	ppb
⌊>	Ge-KED3	72	11666.1	4.4			ppb
⌈>	In-KED2	115	13013.5	0.6			ppb
|	Sb-KED2	121	157.3	11.5	0.35683	15.3	ppb
⌊	Sb-KED2	123	123.1	3.6	0.36770	3.8	ppb
⌈>	Lu-KED2	175	53534.8	1.8			ppb
⌊	Pb-KED2	208	210663.3	0.9	39.27325	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-009
Sample Date/Time: Wednesday, August 24, 2016 20:53:15
Sample Description: 5
Autosampler Position: 350
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-009.076
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10018.8	1.9	18.01340	3.7	ppb
|	Cu-KED3	65	5159.6	2.6	18.21780	4.6	ppb
|	Zn-KED3	66	4066.6	1.1	79.22042	1.3	ppb
⌊>	Ge-KED3	72	11256.1	2.2			ppb
⌈>	In-KED2	115	12727.1	1.4			ppb
|	Sb-KED2	121	98.7	15.3	0.18694	27.4	ppb
⌊	Sb-KED2	123	78.9	14.7	0.20842	22.7	ppb
⌈>	Lu-KED2	175	52064.7	1.4			ppb
⌊	Pb-KED2	208	100342.4	1.2	19.22987	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-010
Sample Date/Time: Wednesday, August 24, 2016 20:56:14
Sample Description: 5
Autosampler Position: 351
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-010.077
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13390.9	2.0	24.15003	1.9	ppb
|	Cu-KED3	65	6766.6	1.4	23.96787	2.8	ppb
|	Zn-KED3	66	4751.5	1.3	92.85246	0.9	ppb
⌊>	Ge-KED3	72	11222.1	1.6			ppb
⌈>	In-KED2	115	12795.6	2.7			ppb
|	Sb-KED2	121	92.0	17.8	0.16364	25.9	ppb
⌊	Sb-KED2	123	84.2	10.8	0.22689	15.0	ppb
⌈>	Lu-KED2	175	52303.3	1.7			ppb
⌊	Pb-KED2	208	126288.5	1.5	24.08918	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011
Sample Date/Time: Wednesday, August 24, 2016 20:59:13
Sample Description: 5
Autosampler Position: 352
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011.078
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20235.7	1.6	34.88099	3.2	ppb
|	Cu-KED3	65	10278.0	0.2	34.78832	2.3	ppb
|	Zn-KED3	66	5706.1	2.7	106.50007	0.7	ppb
⌊>	Ge-KED3	72	11750.2	2.1			ppb
⌈>	In-KED2	115	12910.3	3.9			ppb
|	Sb-KED2	121	143.3	8.5	0.31940	16.7	ppb
⌊	Sb-KED2	123	94.0	6.6	0.26097	5.4	ppb
⌈>	Lu-KED2	175	52506.3	2.1			ppb
⌊	Pb-KED2	208	273776.4	1.9	52.04334	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011L
Sample Date/Time: Wednesday, August 24, 2016 21:02:12
Sample Description: 25
Autosampler Position: 353
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011L.079
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	4625.4	3.3	7.25352	4.9	ppb
|	Cu-KED3	65	2352.5	0.7	7.23782	1.6	ppb
|	Zn-KED3	66	1319.4	2.4	22.39973	4.2	ppb
⌊>	Ge-KED3	72	12871.5	2.1			ppb
⌈>	In-KED2	115	14017.8	4.9			ppb
|	Sb-KED2	121	44.7	10.3	0.00764	238.1	ppb
⌊	Sb-KED2	123	40.8	13.1	0.04709	31.1	ppb
⌈>	Lu-KED2	175	55323.3	1.0			ppb
⌊	Pb-KED2	208	60253.4	1.9	10.86424	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011A
Sample Date/Time: Wednesday, August 24, 2016 21:05:11
Sample Description: 5 +50ppb
Autosampler Position: 354
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011A.080
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	47812.6	2.2	83.09534	0.7	ppb
|	Cu-KED3	65	24272.3	2.2	82.84558	0.2	ppb
|	Zn-KED3	66	8325.8	0.4	156.76991	2.2	ppb
⌊>	Ge-KED3	72	11656.1	2.4			ppb
⌈>	In-KED2	115	12839.9	1.8			ppb
|	Sb-KED2	121	17056.2	2.1	52.06843	2.9	ppb
⌊	Sb-KED2	123	13593.7	1.0	51.69293	0.9	ppb
⌈>	Lu-KED2	175	52626.8	0.8			ppb
⌊	Pb-KED2	208	520602.0	1.2	98.70253	0.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011S
Sample Date/Time: Wednesday, August 24, 2016 21:08:09
Sample Description: 5
Autosampler Position: 355
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011S.081
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	74038.0	0.9	129.74716	1.6	ppb
|	Cu-KED3	65	37603.8	1.6	129.45241	3.4	ppb
|	Zn-KED3	66	15784.4	1.9	299.73234	3.5	ppb
⌊>	Ge-KED3	72	11563.0	1.9			ppb
⌈>	In-KED2	115	13059.1	0.7			ppb
|	Sb-KED2	121	25413.3	2.1	76.31279	1.8	ppb
⌊	Sb-KED2	123	20288.1	1.7	75.88828	1.0	ppb
⌈>	Lu-KED2	175	53621.8	1.4			ppb
⌊	Pb-KED2	208	1248958.3	1.2	232.42677	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:11:10
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.082
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	16359.4	4.6	25.13434	5.6	ppb
	Cu-KED3	65	8301.1	3.2	25.03626	3.5	ppb
	Zn-KED3	66	1491.7	3.4	24.74384	4.4	ppb
>	Ge-KED3	72	13178.1	1.1			ppb
>	In-KED2	115	14280.0	2.1			ppb
	Sb-KED2	121	9219.0	2.8	25.23587	0.7	ppb
	Sb-KED2	123	7486.1	2.4	25.54514	0.3	ppb
>	Lu-KED2	175	54213.1	3.1			ppb
	Pb-KED2	208	138582.6	0.1	25.51885	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	101				
	Cu-KED3	65	100				
	Zn-KED3	66	99				
>	Ge-KED3	72		98			
>	In-KED2	115		101			
	Sb-KED2	121	101				
	Sb-KED2	123	102				
>	Lu-KED2	175		101			
	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:14:10
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.083
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8.0	25.0	-0.02045	15.9	ppb
|	Cu-KED3	65	3.3	34.6	-0.02810	12.1	ppb
|	Zn-KED3	66	5.3	10.8	-0.02884	27.5	ppb
⌊>	Ge-KED3	72	12948.9	2.3			ppb
⌈>	In-KED2	115	13874.7	4.0			ppb
|	Sb-KED2	121	33.3	15.1	-0.02320	77.2	ppb
⌊	Sb-KED2	123	27.5	32.7	0.00231	1403.0	ppb
⌈>	Lu-KED2	175	53474.0	4.7			ppb
⌊	Pb-KED2	208	28.0	31.1	0.00117	144.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		96			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 21:17:09
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.084
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	146.0	4.1	0.19755	6.2	ppb
|	Cu-KED3	65	84.3	8.6	0.22348	12.3	ppb
|	Zn-KED3	66	63.3	7.1	0.96577	11.3	ppb
⌊>	Ge-KED3	72	12842.8	3.1			ppb
⌈>	In-KED2	115	13858.2	3.3			ppb
|	Sb-KED2	121	68.7	21.1	0.07616	49.9	ppb
⌊	Sb-KED2	123	53.1	19.0	0.09212	36.9	ppb
⌈>	Lu-KED2	175	54260.6	3.0			ppb
⌊	Pb-KED2	208	586.7	6.4	0.10394	8.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	112				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121	76				
⌊	Sb-KED2	123	92				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	104				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011SD
Sample Date/Time: Wednesday, August 24, 2016 21:20:10
Sample Description: 5
Autosampler Position: 356
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011SD.085
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	73305.7	3.0	126.03621	6.6	ppb
|	Cu-KED3	65	37095.1	2.7	125.25607	6.4	ppb
|	Zn-KED3	66	15623.2	2.7	290.98186	6.3	ppb
⌊>	Ge-KED3	72	11802.9	3.8			ppb
⌈>	In-KED2	115	12916.9	2.1			ppb
|	Sb-KED2	121	25087.3	1.9	76.17710	2.0	ppb
⌊	Sb-KED2	123	19932.9	1.4	75.39295	1.1	ppb
⌈>	Lu-KED2	175	53550.9	3.7			ppb
⌊	Pb-KED2	208	1232067.0	1.4	229.78719	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-04
Sample Date/Time: Wednesday, August 24, 2016 21:23:09
Sample Description: 5
Autosampler Position: 357
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609920-04.086
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	64658.7	2.3	103.03853	2.3	ppb
|	Cu-KED3	65	33284.7	1.5	104.17989	2.1	ppb
|	Zn-KED3	66	12337.7	3.1	212.97432	3.0	ppb
⌊>	Ge-KED3	72	12713.3	1.3			ppb
⌈>	In-KED2	115	13789.7	4.3			ppb
|	Sb-KED2	121	73006.8	1.8	208.13180	5.4	ppb
⌊	Sb-KED2	123	58774.5	1.4	208.54090	2.8	ppb
⌈>	Lu-KED2	175	53071.9	4.4			ppb
⌊	Pb-KED2	208	1096580.6	1.0	206.47658	5.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 21:26:10
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.087
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	35.3	34.1	0.02048	86.5	ppb
|	Cu-KED3	65	15.3	26.4	0.00727	159.5	ppb
|	Zn-KED3	66	11.0	31.5	0.06093	89.6	ppb
⌊>	Ge-KED3	72	13368.3	1.7			ppb
⌈>	In-KED2	115	14264.6	0.8			ppb
|	Sb-KED2	121	48.7	35.0	0.01609	293.9	ppb
⌊	Sb-KED2	123	33.6	3.7	0.02016	22.5	ppb
⌈>	Lu-KED2	175	55404.6	1.0			ppb
⌊	Pb-KED2	208	47.3	20.0	0.00446	39.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-012
Sample Date/Time: Wednesday, August 24, 2016 21:29:11
Sample Description: 5
Autosampler Position: 358
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-012.088
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2.7	114.6	-0.02713	23.7	ppb
|	Cu-KED3	65	3.3	34.6	0.03368	234.3	ppb
|	Zn-KED3	66	2.0	86.6	0.38981	182.1	ppb
⌊>	Ge-KED3	72	9538.7	140.5			ppb
⌈>	In-KED2	115	11429.8	82.1			ppb
|	Sb-KED2	121	5.3	86.6	-0.10403	12.9	ppb
⌊	Sb-KED2	123	1.9	6.7	-0.07571	29.7	ppb
⌈>	Lu-KED2	175	44820.0	90.8			ppb
⌊	Pb-KED2	208	23.3	9.9	0.00971	166.8	ppb

QC Calculated Values

	IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈		Cu-KED3	63					
|		Cu-KED3	65					
|		Zn-KED3	66					
⌊>		Ge-KED3	72		71			
⌈>		In-KED2	115		80			
|		Sb-KED2	121					
⌊		Sb-KED2	123					
⌈>		Lu-KED2	175		83			
⌊		Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

No Uptake
JB 8/25/16

LABWORKS - Summary Report

Sample ID: KQ1609300-03
Sample Date/Time: Wednesday, August 24, 2016 21:32:10
Sample Description: 5
Autosampler Position: 359
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609300-03.089
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.0	57.7	-0.01371	82.2	ppb
|	Cu-KED3	65	6.0	16.7	-0.01941	15.8	ppb
|	Zn-KED3	66	18.0	20.0	0.19370	33.2	ppb
⌊>	Ge-KED3	72	12641.3	0.6			ppb
⌈>	In-KED2	115	13959.7	4.4			ppb
|	Sb-KED2	121	14.0	65.5	-0.07793	35.1	ppb
⌊	Sb-KED2	123	9.1	27.5	-0.06308	15.0	ppb
⌈>	Lu-KED2	175	52173.8	0.9			ppb
⌊	Pb-KED2	208	88.7	15.0	0.01290	20.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-004
Sample Date/Time: Wednesday, August 24, 2016 21:35:09
Sample Description: 5
Autosampler Position: 360
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-004.090
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	24401.5	1.3	36.64391	3.7	ppb
|	Cu-KED3	65	12123.5	1.6	35.74703	3.3	ppb
|	Zn-KED3	66	5918.9	2.8	96.26694	4.2	ppb
⌊>	Ge-KED3	72	13490.4	2.4			ppb
⌈>	In-KED2	115	14130.5	4.8			ppb
|	Sb-KED2	121	126.0	15.1	0.23123	16.8	ppb
⌊	Sb-KED2	123	107.4	10.6	0.27640	11.2	ppb
⌈>	Lu-KED2	175	57524.3	2.9			ppb
⌊	Pb-KED2	208	274638.6	1.1	47.66919	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-005
Sample Date/Time: Wednesday, August 24, 2016 21:38:10
Sample Description: 5
Autosampler Position: 101
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\K1608209-005.091
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2.7	43.3	0.08999	138.8	ppb
|	Cu-KED3	65	1.0	100.0	0.01567	400.5	ppb
|	Zn-KED3	66	0.7	86.6	0.23452	154.1	ppb
⌊>	Ge-KED3	72	657.0	54.4			ppb
⌈>	In-KED2	115	17818.6	107.9			ppb
|	Sb-KED2	121	2.7	173.2	-0.11529	4.1	ppb
⌊	Sb-KED2	123	2.5	61.3	-0.03417	267.9	ppb
⌈>	Lu-KED2	175	69678.4	109.3			ppb
⌊	Pb-KED2	208	21.3	48.1	0.01343	185.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		5			
⌈>	In-KED2	115		125			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		129			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ge-KED3 72 Int Std for samp	Ge-KED3	72	IS out of control
In-KED2 115 Int Std for samp	In-KED2	115	IS out of control
Lu-KED2 175 Int Std for sam	Lu-KED2	175	IS out of control

No Uptake
JR 8/25/16

LABWORKS - Summary Report

Sample ID: K1608209-006
Sample Date/Time: Wednesday, August 24, 2016 21:41:08
Sample Description: 5
Autosampler Position: 102
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-006.092
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	40022.0	0.2	59.87426	3.1	ppb
|	Cu-KED3	65	20678.6	0.3	60.75094	2.7	ppb
|	Zn-KED3	66	8065.3	3.2	130.61607	1.8	ppb
⌊>	Ge-KED3	72	13546.4	2.9			ppb
⌈>	In-KED2	115	14444.0	1.7			ppb
|	Sb-KED2	121	186.0	7.5	0.38745	7.7	ppb
⌊	Sb-KED2	123	145.8	6.6	0.39852	7.1	ppb
⌈>	Lu-KED2	175	57849.9	0.9			ppb
⌊	Pb-KED2	208	463770.4	1.4	79.98763	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-007
Sample Date/Time: Wednesday, August 24, 2016 21:44:08
Sample Description: 5
Autosampler Position: 103
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-007.093
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21559.6	1.2	33.38692	4.8	ppb
|	Cu-KED3	65	10889.8	0.6	33.11217	4.2	ppb
|	Zn-KED3	66	5859.9	1.1	98.26881	3.6	ppb
⌊>	Ge-KED3	72	13088.0	3.6			ppb
⌈>	In-KED2	115	14291.9	0.8			ppb
|	Sb-KED2	121	184.7	7.2	0.38969	10.4	ppb
⌊	Sb-KED2	123	137.6	3.7	0.37591	3.6	ppb
⌈>	Lu-KED2	175	57523.9	1.1			ppb
⌊	Pb-KED2	208	382742.3	1.1	66.39706	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010
Sample Date/Time: Wednesday, August 24, 2016 21:47:07
Sample Description: 5
Autosampler Position: 104
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010.094
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	34224.3	1.0	51.34678	3.3	ppb
|	Cu-KED3	65	17471.0	1.4	51.47995	3.7	ppb
|	Zn-KED3	66	9266.0	1.2	150.60112	3.4	ppb
⌊>	Ge-KED3	72	13505.7	2.4			ppb
⌈>	In-KED2	115	14373.1	2.6			ppb
|	Sb-KED2	121	614.0	0.3	1.56057	2.7	ppb
⌊	Sb-KED2	123	467.3	1.1	1.49624	4.0	ppb
⌈>	Lu-KED2	175	57873.1	3.2			ppb
⌊	Pb-KED2	208	894314.8	0.6	154.30637	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:50:07
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.095
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	4.0	50.0	2.17826	129.6	ppb
	Cu-KED3	65	1.7	69.3	2.76009	162.1	ppb
	Zn-KED3	66	1.3	43.3	6.27034	118.3	ppb
>	Ge-KED3	72	313.3	141.3			ppb
>	In-KED2	115	11516.3	157.1			ppb
	Sb-KED2	121	6.7	75.5	0.22788	241.9	ppb
	Sb-KED2	123	1.2	111.5	0.00580	3052.3	ppb
>	Lu-KED2	175	43454.3	159.4			ppb
	Pb-KED2	208	178.0	69.1	1.09193	166.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	9				
	Cu-KED3	65	11				
	Zn-KED3	66	25				
>	Ge-KED3	72		2			
>	In-KED2	115		81			
	Sb-KED2	121	1				
	Sb-KED2	123	0				
>	Lu-KED2	175		81			
	Pb-KED2	208	4				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Cu-KED3	63	Out of Control
QC Std 2	Cu-KED3	65	Out of Control
QC Std 2	Zn-KED3	66	Out of Control
Ge-KED3 72 Int Std for QC S	Ge-KED3	72	IS out of control
QC Std 2	Sb-KED2	121	Out of Control
QC Std 2	Sb-KED2	123	Out of Control
QC Std 2	Pb-KED2	208	Out of Control

JB 8/25/16

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:52:26
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.096
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17434.6	1.2	25.69015	1.7	ppb
|	Cu-KED3	65	8929.5	2.3	25.84217	3.5	ppb
|	Zn-KED3	66	1585.4	2.6	25.23393	4.3	ppb
⌊>	Ge-KED3	72	13738.6	2.5			ppb
⌈>	In-KED2	115	14619.4	1.5			ppb
|	Sb-KED2	121	9296.4	1.3	24.86494	2.9	ppb
⌊	Sb-KED2	123	7586.5	0.4	25.29192	1.9	ppb
⌈>	Lu-KED2	175	55333.6	1.6			ppb
⌊	Pb-KED2	208	140636.2	1.5	25.36455	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	103				
|	Cu-KED3	65	103				
|	Zn-KED3	66	101				
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	101				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:55:25
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.097
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.7	59.8	-0.01461	75.9	ppb
|	Cu-KED3	65	8.0	45.1	-0.01544	69.3	ppb
|	Zn-KED3	66	4.0	66.1	-0.05657	72.8	ppb
⌊>	Ge-KED3	72	13991.5	1.7			ppb
⌈>	In-KED2	115	14684.0	3.8			ppb
|	Sb-KED2	121	32.0	32.5	-0.03162	100.5	ppb
⌊	Sb-KED2	123	26.9	13.5	-0.00516	263.6	ppb
⌈>	Lu-KED2	175	54281.9	1.5			ppb
⌊	Pb-KED2	208	20.0	72.1	-0.00037	723.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010L
Sample Date/Time: Wednesday, August 24, 2016 21:58:26
Sample Description: 25
Autosampler Position: 105
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010L.098
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	7431.9	1.6	10.71723	1.2	ppb
|	Cu-KED3	65	3800.5	1.2	10.76040	2.1	ppb
|	Zn-KED3	66	1977.1	2.1	30.87051	2.4	ppb
⌊>	Ge-KED3	72	14009.9	1.3			ppb
⌈>	In-KED2	115	14686.4	4.3			ppb
|	Sb-KED2	121	140.7	9.1	0.25887	15.9	ppb
⌊	Sb-KED2	123	110.1	10.2	0.27125	8.9	ppb
⌈>	Lu-KED2	175	57331.8	1.2			ppb
⌊	Pb-KED2	208	185067.4	0.5	32.20948	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010A
Sample Date/Time: Wednesday, August 24, 2016 22:01:25
Sample Description: 5 +50ppb
Autosampler Position: 106
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010A.099
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66729.5	2.2	101.04332	3.3	ppb
|	Cu-KED3	65	34415.7	1.0	102.33909	2.0	ppb
|	Zn-KED3	66	12348.7	0.1	202.51591	1.3	ppb
⌊>	Ge-KED3	72	13381.9	1.1			ppb
⌈>	In-KED2	115	14604.4	2.0			ppb
|	Sb-KED2	121	19087.4	2.1	51.24225	4.1	ppb
⌊	Sb-KED2	123	15166.3	1.2	50.70398	0.8	ppb
⌈>	Lu-KED2	175	58205.0	0.9			ppb
⌊	Pb-KED2	208	1172297.0	1.0	200.97738	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010S
Sample Date/Time: Wednesday, August 24, 2016 22:04:24
Sample Description: 5
Autosampler Position: 107
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010S.100
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	94074.7	0.7	142.71648	5.2	ppb
|	Cu-KED3	65	47708.5	0.2	142.12412	4.6	ppb
|	Zn-KED3	66	21210.7	1.5	348.73457	6.3	ppb
⌊>	Ge-KED3	72	13376.3	4.7			ppb
⌈>	In-KED2	115	14155.9	1.8			ppb
|	Sb-KED2	121	31282.9	1.5	86.69917	2.5	ppb
⌊	Sb-KED2	123	24888.6	1.3	85.91204	1.6	ppb
⌈>	Lu-KED2	175	58140.4	2.2			ppb
⌊	Pb-KED2	208	2325902.8	1.1	399.32489	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010SD
Sample Date/Time: Wednesday, August 24, 2016 22:07:23
Sample Description: 5
Autosampler Position: 108
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010SD.101
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	101265.1	1.9	153.30457	1.8	ppb
|	Cu-KED3	65	51568.9	1.2	153.32723	0.7	ppb
|	Zn-KED3	66	22098.7	0.7	362.45404	0.9	ppb
⌊>	Ge-KED3	72	13382.9	0.5			ppb
⌈>	In-KED2	115	14326.2	2.0			ppb
|	Sb-KED2	121	31200.0	2.2	85.42489	1.8	ppb
⌊	Sb-KED2	123	24372.5	1.7	83.12212	1.2	ppb
⌈>	Lu-KED2	175	58897.9	2.9			ppb
⌊	Pb-KED2	208	2507746.4	1.3	425.13980	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609300-04
Sample Date/Time: Wednesday, August 24, 2016 22:10:22
Sample Description: 5
Autosampler Position: 109
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609300-04.102
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66065.1	0.7	97.09979	1.8	ppb
|	Cu-KED3	65	34004.4	0.2	98.16021	2.0	ppb
|	Zn-KED3	66	12327.0	0.7	196.26377	2.2	ppb
⌊>	Ge-KED3	72	13786.0	1.8			ppb
⌈>	In-KED2	115	14599.9	1.9			ppb
|	Sb-KED2	121	73240.0	2.7	196.97831	3.8	ppb
⌊	Sb-KED2	123	58642.8	1.8	196.36797	0.2	ppb
⌈>	Lu-KED2	175	57041.3	1.7			ppb
⌊	Pb-KED2	208	1071343.6	0.5	187.43690	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 22:13:24
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.103
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	42.0	8.2	0.02633	14.9	ppb
|	Cu-KED3	65	17.3	12.0	0.00982	58.4	ppb
|	Zn-KED3	66	13.0	20.4	0.08007	52.0	ppb
⌊>	Ge-KED3	72	14335.9	1.6			ppb
⌈>	In-KED2	115	14624.3	2.0			ppb
|	Sb-KED2	121	45.3	13.5	0.00380	444.0	ppb
⌊	Sb-KED2	123	39.5	12.8	0.03688	43.0	ppb
⌈>	Lu-KED2	175	55989.2	1.0			ppb
⌊	Pb-KED2	208	60.0	23.3	0.00664	38.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		106			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		104			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-011
Sample Date/Time: Wednesday, August 24, 2016 22:16:25
Sample Description: 5
Autosampler Position: 110
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-011.104
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26369.0	2.7	39.38632	2.8	ppb
|	Cu-KED3	65	13380.6	1.2	39.24630	0.5	ppb
|	Zn-KED3	66	8243.4	2.4	133.38592	1.7	ppb
⌊>	Ge-KED3	72	13556.4	0.7			ppb
⌈>	In-KED2	115	13275.7	5.6			ppb
|	Sb-KED2	121	987.4	5.0	2.80828	6.9	ppb
⌊	Sb-KED2	123	787.4	1.4	2.81075	4.5	ppb
⌈>	Lu-KED2	175	54200.3	7.1			ppb
⌊	Pb-KED2	208	2369560.4	1.0	437.73514	7.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		93			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-012
Sample Date/Time: Wednesday, August 24, 2016 22:19:24
Sample Description: 5
Autosampler Position: 111
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-012.105
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	19949.3	1.1	29.82367	2.1	ppb
|	Cu-KED3	65	10223.7	0.8	30.01191	1.3	ppb
|	Zn-KED3	66	9508.8	1.1	154.08014	2.3	ppb
⌊>	Ge-KED3	72	13543.1	1.7			ppb
⌈>	In-KED2	115	14321.0	3.9			ppb
|	Sb-KED2	121	254.0	0.8	0.57928	4.5	ppb
⌊	Sb-KED2	123	203.0	4.3	0.59956	8.8	ppb
⌈>	Lu-KED2	175	58192.6	1.8			ppb
⌊	Pb-KED2	208	511287.3	0.3	87.68303	1.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-013
Sample Date/Time: Wednesday, August 24, 2016 22:22:23
Sample Description: 5
Autosampler Position: 112
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\K1608209-013.106
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25719.8	0.7	38.97129	1.0	ppb
|	Cu-KED3	65	13219.4	2.0	39.33485	1.9	ppb
|	Zn-KED3	66	7966.9	1.3	130.78042	0.7	ppb
⌊>	Ge-KED3	72	13363.2	0.6			ppb
⌈>	In-KED2	115	14385.3	2.6			ppb
|	Sb-KED2	121	234.7	4.7	0.52349	8.8	ppb
⌊	Sb-KED2	123	206.8	4.7	0.60844	5.7	ppb
⌈>	Lu-KED2	175	56610.7	2.7			ppb
⌊	Pb-KED2	208	605984.9	0.9	106.87018	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-014
Sample Date/Time: Wednesday, August 24, 2016 22:25:22
Sample Description: 5
Autosampler Position: 113
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-014.107
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43728.8	0.6	64.23268	1.0	ppb
|	Cu-KED3	65	21905.5	2.5	63.18455	1.9	ppb
|	Zn-KED3	66	10208.3	2.2	162.42701	2.1	ppb
⌊>	Ge-KED3	72	13790.0	1.2			ppb
⌈>	In-KED2	115	14499.4	2.2			ppb
|	Sb-KED2	121	1024.7	2.1	2.65946	4.5	ppb
⌊	Sb-KED2	123	775.6	2.5	2.52278	4.5	ppb
⌈>	Lu-KED2	175	58350.7	3.6			ppb
⌊	Pb-KED2	208	2605137.0	2.1	445.90559	4.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 22:28:23
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.108
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17853.8	2.9	25.01894	2.3	ppb
|	Cu-KED3	65	9449.1	4.7	26.00028	4.0	ppb
|	Zn-KED3	66	1644.8	2.8	24.88640	2.1	ppb
⌊>	Ge-KED3	72	14441.3	1.0			ppb
⌈>	In-KED2	115	15224.3	0.6			ppb
|	Sb-KED2	121	9724.0	1.5	24.97010	2.0	ppb
⌊	Sb-KED2	123	7762.8	2.1	24.84463	1.9	ppb
⌈>	Lu-KED2	175	56381.8	2.5			ppb
⌊	Pb-KED2	208	144512.0	1.1	25.57704	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	104				
|	Zn-KED3	66	100				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		107			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 22:31:22
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.109
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11.3	62.0	-0.01692	58.3	ppb
|	Cu-KED3	65	5.3	21.7	-0.02338	12.8	ppb
|	Zn-KED3	66	5.7	44.4	-0.03194	118.8	ppb
⌊>	Ge-KED3	72	14200.1	2.0			ppb
⌈>	In-KED2	115	15084.0	0.8			ppb
|	Sb-KED2	121	43.3	18.7	-0.00507	435.3	ppb
⌊	Sb-KED2	123	29.7	10.1	0.00141	636.8	ppb
⌈>	Lu-KED2	175	56491.5	0.8			ppb
⌊	Pb-KED2	208	32.0	21.7	0.00158	75.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 22:34:22
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.110
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	156.7	12.8	0.19053	14.8	ppb
|	Cu-KED3	65	80.0	10.2	0.18585	11.8	ppb
|	Zn-KED3	66	70.7	2.9	0.97341	3.4	ppb
⌊>	Ge-KED3	72	14201.7	0.5			ppb
⌈>	In-KED2	115	15178.7	1.8			ppb
|	Sb-KED2	121	70.0	21.6	0.06360	66.5	ppb
⌊	Sb-KED2	123	54.5	13.9	0.08102	33.0	ppb
⌈>	Lu-KED2	175	56225.1	0.9			ppb
⌊	Pb-KED2	208	621.3	4.4	0.10618	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	95				
|	Cu-KED3	65	93				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		107			
|	Sb-KED2	121	64				
⌊	Sb-KED2	123	81				
⌈>	Lu-KED2	175		104			
⌊	Pb-KED2	208	106				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

Preparation Information Benchsheet

Prep Run: 266812
Team: Metals
Analyst: Anna Cheatley

Prep Workflow: MetDigAqMS
Prep Method: EPA CLP-METALS ILM04.0
Rush/NPDES: N/A

Status: Prepped
Current Step: Digestion

Prep Date: 07/21/2016 15:52
Due Date: 08/01/2016
Hold Date: 01/10/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1608449-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1608449-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	88551 172187 172654	Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1608449-03	Duplicate Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	88551 172187 172654	Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608011-007	EB071416	.03	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608207-015	EB071816	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608209-015	EB071916	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608210-015	EB071516	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl

7 Total Samples consisting of 4 Client Samples, 0 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016
k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016

Name	Type	ID	Expires
k-met Sb 5ug/mL Sb	Spike	88551	7/21/2016

Preparation Materials

Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761

Step	Name	ID
Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Corrected Temperature	96	deg C
Digestion	K-BlockDigester-06	Correction Factor	0	deg C
Digestion	K-BlockDigester-06	Observed Temperature 211919567	96	deg C

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Thermometer ID 1108666		NONE
Digestion	K-BlockDigester-06	Thermometer Location	43	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	21-JUL-16 15:52	21-JUL-16 17:52	Anna Cheatley		N	

Comments

HCl lot #53338

Review

Reviewed by: _____ Date: _____

Preparation Information Benchsheet

Prep Run: 267853
Team: Metals
Analyst: Anna Cheatley
Prep Workflow: MetDigAqMS
Prep Method: EPA CLP-METALS ILM04.0
Rush/NPDES: N/A
Status: Prepped
Current Step: Digestion
Prep Date: 08/04/2016 09:43
Due Date: 08/01/2016
Hold Date: 01/10/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1609201-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-03	Duplicate Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608011-007	EB071416	.03	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608207-015	EB071816	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608209-015	EB071916	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608210-015	EB071516	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608325-014	EB072116	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608344-013	EB072016	.04	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl

9 Total Samples consisting of 6 Client Samples, 0 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016
k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016

Name	Type	ID	Expires
k-met Sb 5ug/mL Sb	Spike	174317	7/12/2017

Preparation Materials

Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761

Step	Name	ID
Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Corrected Temperature	96	deg C
Digestion	K-BlockDigester-06	Correction Factor	0	deg C
Digestion	K-BlockDigester-06	Observed Temperature 211919567	96	deg C

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Thermometer ID 1108666		NONE
Digestion	K-BlockDigester-06	Thermometer Location	53	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	04-AUG-16 09:43	04-AUG-16 11:43	Anna Cheatley		N	

Comments

HCl lot #53338

Review

Reviewed by: _____ Date: 8/5/16

ICP-MS LCSW AND SPIKING SOLUTIONS

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-1

k-met 1/100 QCP-CICV-1

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Al	10000	100
Ag	1250	12.5
Ba	10000	100
Be	250	2.5
Ca	25000	250
Co	2500	25
Cu	1250	12.5
Cr	1000	10
Fe	5000	50
K	25000	250
Mg	25000	250
Mn	2500	25
Na	25000	250
Ni	2500	25
V	2500	25
Zn	2500	25

2.50mL to 500mL Dilution of 1000ppm Sb

k-met 5ug/mL Sb

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Sb	5000	50

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-3

k-met 1/100 QCP-CICV-3

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
As	5000	50
Pb	5000	50
Se	5000	50
Tl	5000	50
Cd	2500	25

2.00mL to 200mL Dilution of 1,000 ppm Mo and 1,000 ppm U

k-met Mo/U 10ppm

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Mo	10000	20
U	10000	20

Service Request # K1608210

Calibration 080316CMS03

QC in calibration 080316CMS03

QC Service Request # K1608011

STARLIMS run # 508286

Cal Std: MS20-74H ICSA Std: MS20-68H

ICV Std: MS20-74I ICSAB Std: MS20-68I

LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD 5.0 limit?	X	X	
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb. LCSW=142% Zn. See redigest.

Primary Review by _____ Date 8/4/16

Secondary Review by _____ Date 8/5/16

R:\icp\misc\data review forms\6020 DoD Review Checklist

Data Review Form

Service Request #: **K1608210**
Instrument ID#: **K-ICP-MS-03**
DataFile Name: **R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080316CMS03.csv**
RUNNO: **508286**

There are no issues to report.

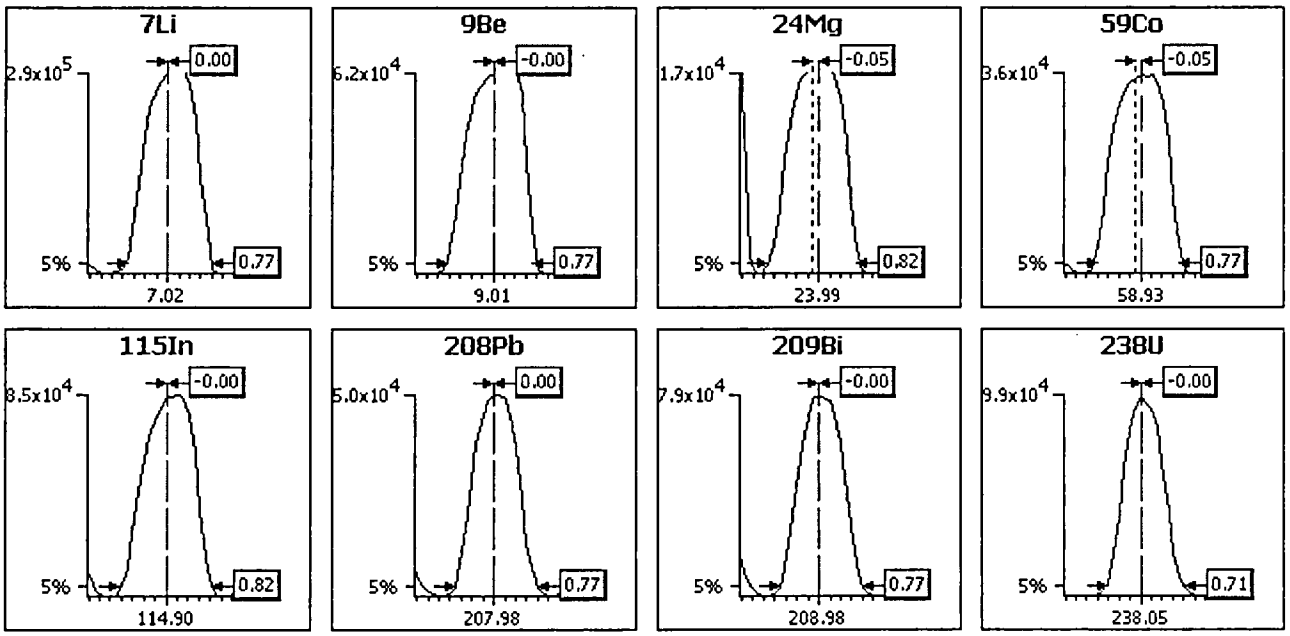
Primary Approver: 8/4/16
Secondary Approver: 8/5/16

Performance Report

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.77	0.00
9Be	0.90	0.60	0.10	0.77	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.77	-0.05
115In	0.90	0.60	0.10	0.82	-0.00
208Pb	0.90	0.60	0.10	0.77	0.00
209Bi	0.90	0.60	0.10	0.77	-0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	3.8
Focus	23.9
D1	-36.1
Pole Bias	0.4
Hexapole Bias	0.3
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-21.2
Lens 3	-196.1
Forward power	1357
Horizontal	150
Vertical	379
D2	-147
DA	-37.6
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	6:29:00 AM	0.000	284076.95	64021.390	19038.665	37178.368	88721.329	92152.711	1751.419	52817.237
2	6:30:13 AM	0.000	284616.70	64282.221	18790.900	37247.399	88991.702	92036.291	1696.908	53025.444
3	6:31:26 AM	0.000	280053.72	62989.469	18746.809	37270.745	88884.663	92390.355	1683.406	53079.256
4	6:32:38 AM	0.000	282064.47	63422.715	18936.702	37062.395	89291.874	92101.698	1698.909	52955.538
5	6:33:51 AM	0.000	277669.22	62788.334	18622.554	37124.147	89100.005	92354.999	1679.405	53251.258
x		0.000	281696.21	63500.826	18827.126	37176.611	88997.915	92207.211	1702.009	53025.747
σ		0.00	2883.02	643.58	163.07	86.13	215.75	157.08	28.87	159.78
%RSD		0.000	1.023	1.014	0.866	0.232	0.242	0.170	1.696	0.301

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	6:29:00 AM	80875.907	0.000	101610.96
2	6:30:13 AM	81137.977	0.000	101836.97
3	6:31:26 AM	81746.139	0.000	102219.22
4	6:32:38 AM	81748.409	0.000	102459.91
5	6:33:51 AM	81756.733	0.500	102762.54
x		81453.033	0.100	102177.92
σ		417.65	0.22	463.87
%RSD		0.513	223.607	0.454

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	6:29:00 AM	0.019
2	6:30:13 AM	0.018
3	6:31:26 AM	0.018
4	6:32:38 AM	0.018
5	6:33:51 AM	0.018
x		0.0185
σ		0.00
%RSD		1.7799

Result : The performance report passed.

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	ICB1	Unknown	1.000	0	1	1	145
7	CCB1	Unknown	1.000	0	1	1	145
8	LLICVW	Unknown	1.000	0	1	4	145
9	LRSTD	Unknown	1.000	2	1	1	145
10	ICSA	Unknown	1.000	0	1	5	145
11	ICSAB	Unknown	1.000	0	1	6	145
12	KQ1607936-01	Unknown	1.000	1	1	1	145
13	KQ1607936-02	Unknown	1.000	1	1	2	145
14	KQ1607936-03	Unknown	1.000	1	1	3	145
15	K1606832-006	Unknown	1.000	1	1	4	145
16	K1606832-006L	Unknown	1.000	1	1	5	145
17	K1606832-006A	Unknown	1.000	1	1	6	145
18	K1606956-012	Unknown	1.000	1	1	7	145
19	K1607019-010	Unknown	1.000	1	1	8	145
20	K1607034-011	Unknown	1.000	1	1	9	145
21	CCV2	Unknown	1.000	0	1	2	145
22	CCB2	Unknown	1.000	0	1	1	145
23	K1607146-009	Unknown	1.000	1	1	10	145
24	K1607207-006	Unknown	1.000	1	1	11	145
25	K1607266-009	Unknown	1.000	1	1	12	145
26	K1607357-009	Unknown	1.000	1	2	1	145
27	K1607397-009	Unknown	1.000	1	2	2	145
28	K1607580-008	Unknown	1.000	1	2	3	145
29	K1607636-007	Unknown	1.000	1	2	4	145
30	K1607636-008	Unknown	1.000	1	2	5	145
31	K1607675-009	Unknown	1.000	1	2	6	145
32	CCV3	Unknown	1.000	0	1	2	145
33	CCB3	Unknown	1.000	0	1	1	145
34	CCB3	Unknown	1.000	0	1	1	145
35	LLCCVW1	Unknown	1.000	0	1	4	145
36	KQ1608449-01	Unknown	1.000	1	2	7	145
37	KQ1608449-02	Unknown	1.000	1	2	8	145
38	KQ1608449-03	Unknown	1.000	1	2	9	145
39	K1608011-007	Unknown	1.000	1	2	10	145
40	K1608011-007L	Unknown	1.000	1	2	11	145
41	K1608011-007A	Unknown	1.000	1	2	12	145
42	K1608207-015	Unknown	1.000	1	3	1	145
43	K1608209-015	Unknown	1.000	1	3	2	145
44	K1608210-015	Unknown	1.000	1	3	3	145
45	CCV4	Unknown	1.000	0	1	2	145
46	CCB4	Unknown	1.000	0	1	1	145
47	CCB4	Unknown	1.000	0	1	1	145
48	KQ1609039-01	Unknown	1.000	1	3	4	145
49	KQ1609039-02	Unknown	1.000	1	3	5	145
50	KQ1609039-02	Unknown	1.000	1	3	6	145
51	K1608325-014	Unknown	1.000	1	3	7	145
52	K1608325-014L	Unknown	1.000	1	3	8	145
53	K1608325-014A	Unknown	1.000	1	3	9	145
54	K1608344-013	Unknown	1.000	1	3	10	145
55	CCV5	Unknown	1.000	0	1	2	145
56	CCB5	Unknown	1.000	0	1	1	145
57	LLCCVW2	Unknown	1.000	0	1	4	145

Dilution Corrected Concentrations

Cal Blk 8/3/2016 11:58:52 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	101.9%	0.0033	100.9%	0.0110	0.0165	0.0029	-0.0040	0.0068
2	11:59:28	98.6%	-0.0006	100.2%	-0.0021	-0.0116	-0.0015	0.0074	0.0091
3	12:00:05	99.6%	-0.0028	99.0%	-0.0089	-0.0050	-0.0014	-0.0034	-0.0159
x		100.0%	-0.0000	100.0%	0.0000	0.0000	0.0000	-0.0000	0.0000
σ		1.7%	0.0031	1.0%	0.0101	0.0147	0.0025	0.0064	0.0138
%RSD		1.7	0.0000	1.0	0.0000	0.0000	0.0000	0.0000	0.0000

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	-0.0095	0.0198	99.4%	-0.0339	0.0192	0.0854	-0.0948	99.6%
2	11:59:28	0.0018	0.0023	100.2%	0.0235	0.0162	0.0155	0.0940	100.4%
3	12:00:05	0.0077	-0.0221	100.4%	0.0104	-0.0355	-0.1009	0.0008	100.0%
x		0.0000	-0.0000	100.0%	0.0000	0.0000	-0.0000	-0.0000	100.0%
σ		0.0088	0.0210	0.5%	0.0300	0.0308	0.0941	0.0944	0.4%
%RSD		0.0000	0.0000	0.5	0.0000	0.0000	0.0000	0.0000	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	99.0%	-0.0006	-0.0037	98.6%	0.0007	0.0006	0.0001
2	11:59:28	100.3%	-0.0006	0.0055	100.2%	-0.0003	0.0007	0.0000
3	12:00:05	100.7%	0.0012	-0.0018	101.1%	-0.0003	-0.0013	-0.0001
x		100.0%	-0.0000	-0.0000	100.0%	0.0000	-0.0000	0.0000
σ		0.9%	0.0011	0.0049	1.3%	0.0006	0.0011	0.0001
%RSD		0.9	0.0000	0.0000	1.3	0.0000	0.0000	0.0000

Cal. Stn 8/3/2016 12:05:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	99.7%	25.4212	101.4%	24.8380	25.1333	25.4232	25.2951	25.0170
2	12:06:13	94.9%	25.1251	97.9%	25.1084	24.6147	24.6884	25.0301	24.8387
3	12:06:49	96.1%	24.4537	96.2%	25.0537	25.2520	24.8884	24.6747	25.1443
x		96.9%	25.0000	98.5%	25.0000	25.0000	25.0000	25.0000	25.0000
σ		2.5%	0.4957	2.7%	0.1430	0.3389	0.3799	0.3113	0.1535
%RSD		2.5	1.9828	2.7	0.5718	1.3555	1.5195	1.2452	0.6139

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	26.0129	25.0250	99.2%	25.2220	25.3365	25.7518	25.1408	99.6%
2	12:06:13	24.3553	25.0889	101.0%	24.8849	25.3583	24.3936	25.5295	99.9%
3	12:06:49	24.6318	24.8861	100.6%	24.8931	24.3052	24.8546	24.3297	99.8%
x		25.0000	25.0000	100.3%	25.0000	25.0000	25.0000	25.0000	99.8%
σ		0.8880	0.1037	0.9%	0.1923	0.6018	0.6907	0.6121	0.1%
%RSD		3.5520	0.4146	0.9	0.7692	2.4071	2.7626	2.4485	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	100.4%	24.8686	24.7840	100.2%	25.0324	25.1190	25.0564
2	12:06:13	100.4%	25.1052	25.1796	102.3%	25.0025	24.8978	25.0032
3	12:06:49	101.2%	25.0262	25.0364	103.1%	24.9651	24.9832	24.9404
x		100.7%	25.0000	25.0000	101.8%	25.0000	25.0000	25.0000
σ		0.5%	0.1205	0.2003	1.5%	0.0337	0.1115	0.0581
%RSD		0.5	0.4819	0.8011	1.5	0.1350	0.4462	0.2323

ICV1 8/3/2016 12:08:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	100.1%	2.5523	100.4%	25.1690	24.7591	12.3264	12.1984	24.5557
2	12:09:28	93.3%	2.6073	98.3%	25.4122	25.2363	12.6465	12.6558	25.6487
3	12:10:05	95.5%	2.5233	98.0%	24.8719	24.8466	12.3458	12.4137	25.3729
x		96.3%	2.5610	98.9%	25.1510	24.9474	12.4396	12.4226	25.1924
σ		3.4%	0.0427	1.3%	0.2706	0.2541	0.1795	0.2288	0.5684
%RSD		3.6	1.6657	1.3	1.0759	1.0184	1.4429	1.8418	2.2562

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	28.2358	27.5655	100.2%	25.0311	24.9594	25.1245	25.4640	99.2%
2	12:09:28	28.2388	27.5751	99.8%	25.0224	25.9091	25.7493	25.4659	99.6%
3	12:10:05	28.8693	28.2665	98.7%	25.2677	25.6252	25.8031	25.2063	100.3%
x		28.4479	27.8023	99.6%	25.1071	25.4979	25.5590	25.3787	99.7%
σ		0.3649	0.4020	0.8%	0.1392	0.4875	0.3772	0.1493	0.6%
%RSD		1.2826	1.4459	0.8	0.5544	1.9118	1.4760	0.5883	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	99.1%	26.4095	26.3179	100.9%	24.6743	25.3301	25.0655
2	12:09:28	100.3%	26.2787	26.2682	102.8%	24.6864	25.2792	25.0687
3	12:10:05	101.3%	25.9541	25.7546	102.7%	25.0059	25.7189	25.3189
x		100.3%	26.2141	26.1136	102.1%	24.7888	25.4427	25.1510
σ		1.1%	0.2345	0.3118	1.1%	0.1880	0.2405	0.1454
%RSD		1.1	0.8945	1.1942	1.1	0.7586	0.9454	0.5782

CCV1 8/3/2016 12:13:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	103.0%	24.5929	98.8%	25.3563	25.2254	25.0767	25.1933	25.4099
2	12:13:38	103.0%	24.3963	98.7%	25.0314	24.7119	24.7451	24.8955	25.0414
3	12:14:15	102.4%	23.9763	100.4%	25.0682	24.9721	24.6158	24.9420	25.0767
x		102.8%	24.3218	99.3%	25.1520	24.9698	24.8126	25.0103	25.1760
σ		0.4%	0.3150	0.9%	0.1779	0.2567	0.2377	0.1602	0.2033
%RSD		0.4	1.2949	0.9	0.7074	1.0282	0.9581	0.6405	0.8075

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	25.4262	24.8912	99.3%	25.4798	23.6658	25.4510	24.5424	99.8%
2	12:13:38	24.5112	24.8600	100.6%	24.0787	24.6866	25.0870	23.8752	100.9%
3	12:14:15	24.3309	25.4203	98.5%	25.1746	24.8341	24.4187	24.7232	100.4%
x		24.7561	25.0571	99.5%	24.9110	24.3955	24.9856	24.3803	100.4%
σ		0.5873	0.3149	1.1%	0.7368	0.6362	0.5236	0.4467	0.6%
%RSD		2.3722	1.2566	1.1	2.9576	2.6080	2.0955	1.8320	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	100.1%	24.8115	24.6011	100.4%	24.7936	24.7451	24.9171
2	12:13:38	101.0%	25.0560	24.7475	101.5%	24.8937	24.8532	24.9575
3	12:14:15	100.2%	25.1360	25.1246	102.0%	25.0731	24.9676	25.0217
x		100.5%	25.0012	24.8244	101.3%	24.9201	24.8553	24.9654
σ		0.5%	0.1691	0.2701	0.8%	0.1416	0.1112	0.0527
%RSD		0.5	0.6763	1.0879	0.8	0.5683	0.4475	0.2111

ICB1 8/3/2016 12:20:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	107.2%	0.0001	102.1%	0.0024	0.0081	0.0038	0.0063	0.0098
2	12:21:22	107.0%	0.0116	101.2%	0.0120	0.0280	0.0161	0.0073	0.0153
3	12:21:58	110.3%	0.0141	102.1%	0.0067	0.0243	0.0170	0.0137	0.0156
x		108.2%	0.0086	101.8%	0.0070	0.0201	0.0123	0.0091	0.0136
σ		1.8%	0.0075	0.5%	0.0048	0.0106	0.0074	0.0040	0.0033
%RSD		1.7	86.8181	0.5	68.3704	52.7547	59.9918	44.4749	24.2204

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	0.0265	-0.0084	99.0%	-0.0611	0.0981	0.3953	-0.1333	100.0%
2	12:21:22	-0.0401	0.0044	100.5%	-0.0429	0.0278	-0.1792	-0.1701	100.8%
3	12:21:58	-0.0060	0.0078	102.1%	-0.0233	-0.0526	-0.0332	-0.1967	100.5%
x		-0.0065	0.0013	100.6%	-0.0424	0.0244	0.0610	-0.1667	100.4%
σ		0.0333	0.0086	1.6%	0.0189	0.0754	0.2986	0.0318	0.4%
%RSD		508.7854	668.2865	1.6	44.5559	308.7781	489.9042	19.1051	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	99.4%	0.0179	0.0213	97.2%	0.0014	0.0025	0.0007
2	12:21:22	100.0%	0.0339	0.0349	99.2%	0.0116	0.0140	0.0109
3	12:21:58	99.9%	0.0347	0.0363	99.3%	0.0158	0.0137	0.0139
x		99.8%	0.0288	0.0308	98.6%	0.0096	0.0101	0.0085
σ		0.3%	0.0095	0.0083	1.2%	0.0074	0.0066	0.0069
%RSD		0.3	32.7875	26.9649	1.2	76.9747	65.4806	81.1057

ICB1 8/3/2016 12:24:59 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	110.6%	0.0026	99.8%	-0.0074	0.0298	0.0063	0.0056	0.0190
2	12:25:35	108.8%	0.0004	100.5%	0.0063	0.0006	0.0050	0.0081	0.0159
3	12:26:12	102.2%	0.0017	99.0%	-0.0033	0.0089	0.0097	0.0088	0.0048
x		107.2%	0.0016	99.7%	-0.0015	0.0131	0.0070	0.0075	0.0132
σ		4.4%	0.0011	0.8%	0.0070	0.0150	0.0025	0.0017	0.0075
%RSD		4.1	70.5814	0.8	471.6372	114.5867	35.3464	22.8026	56.7756

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	0.0021	0.0154	100.0%	0.0058	0.1201	0.4180	0.1044	100.4%
2	12:25:35	0.0019	0.0063	100.1%	-0.0597	0.0417	-0.1792	-0.1886	101.4%
3	12:26:12	-0.0335	-0.0012	99.9%	0.0009	-0.0223	-0.0222	-0.0466	101.5%
x		-0.0099	0.0068	100.0%	-0.0177	0.0465	0.0722	-0.0436	101.1%
σ		0.0205	0.0083	0.1%	0.0365	0.0713	0.3096	0.1465	0.6%
%RSD		207.6824	121.3553	0.1	206.5850	153.3237	428.9475	336.0915	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	99.6%	0.0047	0.0058	98.3%	0.0052	0.0034	0.0032
2	12:25:35	100.0%	0.0117	0.0142	99.9%	0.0039	0.0050	0.0048
3	12:26:12	100.8%	0.0110	0.0155	100.7%	0.0058	0.0080	0.0055
x		100.2%	0.0091	0.0118	99.7%	0.0050	0.0055	0.0045
σ		0.6%	0.0038	0.0053	1.2%	0.0010	0.0023	0.0012
%RSD		0.6	42.0297	44.6646	1.2	19.5712	42.3099	26.4761

CCB1 8/3/2016 12:28:29 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	111.0%	0.0071	101.7%	-0.0070	0.0514	0.0033	0.0079	0.0212
2	12:29:06	105.3%	0.0042	100.4%	0.0085	-0.0057	0.0022	0.0035	0.0109
3	12:29:42	103.8%	0.0007	99.8%	0.0077	0.0216	0.0067	-0.0003	0.0087
x		106.7%	0.0040	100.6%	0.0031	0.0225	0.0041	0.0037	0.0136
σ		3.8%	0.0032	1.0%	0.0088	0.0285	0.0024	0.0041	0.0067
%RSD		3.6	79.2905	1.0	285.9216	127.1398	58.4338	111.1530	48.9774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	0.0015	0.0123	100.3%	-0.0149	-0.0094	-0.0782	-0.0558	100.0%
2	12:29:06	-0.0042	-0.0016	100.3%	-0.0363	0.1562	0.0573	0.0007	101.8%
3	12:29:42	-0.0519	0.0286	100.7%	0.0115	-0.0623	-0.0714	-0.0370	100.7%
x		-0.0182	0.0131	100.4%	-0.0132	0.0282	-0.0308	-0.0307	100.8%
σ		0.0293	0.0151	0.3%	0.0239	0.1140	0.0763	0.0288	0.9%
%RSD		160.8221	115.6262	0.3	180.8062	404.6443	248.0252	93.8789	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	99.7%	-0.0017	0.0016	98.6%	0.0018	0.0044	0.0024
2	12:29:06	101.1%	0.0070	0.0051	100.3%	0.0010	0.0030	0.0029
3	12:29:42	100.9%	0.0071	0.0073	100.9%	0.0049	0.0060	0.0041
x		100.6%	0.0041	0.0047	99.9%	0.0026	0.0045	0.0031
σ		0.7%	0.0051	0.0029	1.2%	0.0021	0.0015	0.0008
%RSD		0.7	122.8286	61.8019	1.2	80.4608	33.1447	27.1193

LLICVW 8/3/2016 12:32:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	105.5%	0.0214	99.4%	0.1749	0.1826	0.0967	0.0995	0.4898
2	12:32:36	104.4%	0.0205	98.9%	0.1729	0.1699	0.1010	0.1020	0.4672
3	12:33:13	100.1%	0.0262	97.4%	0.1729	0.1709	0.0914	0.1012	0.4605
x		103.3%	0.0227	98.6%	0.1736	0.1745	0.0964	0.1009	0.4725
σ		2.9%	0.0031	1.0%	0.0011	0.0071	0.0048	0.0013	0.0154
%RSD		2.8	13.5714	1.1	0.6617	4.0485	5.0033	1.2780	3.2514

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	0.3191	0.4826	99.6%	0.5424	1.1331	1.1067	1.1845	99.2%
2	12:32:36	0.4231	0.5021	99.2%	0.5253	1.0036	1.1257	0.9504	101.2%
3	12:33:13	0.6294	0.4790	99.1%	0.4133	0.9666	0.7446	0.7906	100.8%
x		0.4572	0.4879	99.3%	0.4937	1.0344	0.9923	0.9752	100.4%
σ		0.1579	0.0124	0.3%	0.0701	0.0874	0.2147	0.1981	1.0%
%RSD		34.5465	2.5491	0.3	14.2022	8.4527	21.6389	20.3127	1.0

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	99.4%	0.0491	0.0517	98.2%	0.0228	0.0191	0.0219
2	12:32:36	100.9%	0.0556	0.0511	100.3%	0.0183	0.0156	0.0188
3	12:33:13	100.2%	0.0450	0.0506	101.1%	0.0194	0.0199	0.0203
x		100.2%	0.0499	0.0511	99.9%	0.0202	0.0182	0.0203
σ		0.8%	0.0053	0.0006	1.5%	0.0024	0.0023	0.0016
%RSD		0.8	10.6827	1.0801	1.5	11.7732	12.6217	7.6566

LRSTD 8/3/2016 12:35:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	101.6%	204.6970	97.7%	196.8791	199.3838	202.7716	202.3057	214.8368
2	12:36:03	99.4%	196.6304	96.7%	201.8646	196.0216	205.1825	202.5141	214.2862
3	12:36:40	94.0%	208.8669	94.0%	199.4093	197.9521	204.4202	202.3690	215.4034
x		98.3%	203.3981	96.1%	199.3843	197.7858	204.1248	202.3963	214.8422
σ		3.9%	6.2208	1.9%	2.4928	1.6872	1.2323	0.1068	0.5586
%RSD		4.0	3.0584	2.0	1.2503	0.8531	0.6037	0.0528	0.2600

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	211.0382	208.7631	98.1%	213.5307	218.0449	219.4838	222.4606	99.3%
2	12:36:03	209.1400	208.0922	98.1%	212.9448	217.7150	224.0242	221.9674	99.7%
3	12:36:40	208.3781	210.3120	98.8%	211.0625	213.6693	220.4988	217.5610	99.2%
x		209.5188	209.0557	98.3%	212.5127	216.4764	221.3356	220.6630	99.4%
σ		1.3699	1.1385	0.4%	1.2896	2.4366	2.3831	2.6977	0.3%
%RSD		0.6538	0.5446	0.4	0.6068	1.1256	1.0767	1.2226	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	105.9%	201.4358	199.6222	100.9%	204.9497	204.0435	207.6721
2	12:36:03	105.4%	203.0798	201.2665	102.6%	204.3710	201.9004	206.6079
3	12:36:40	105.8%	201.5785	200.9491	102.7%	204.9323	204.0668	208.2962
x		105.7%	202.0314	200.6126	102.1%	204.7510	203.3369	207.5254
σ		0.2%	0.9108	0.8723	1.0%	0.3292	1.2441	0.8536
%RSD		0.2	0.4508	0.4348	1.0	0.1608	0.6118	0.4113

ICSA 8/3/2016 12:43:01 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	101.6%	0.0188	95.9%	1.2822	1.5791	3.1617	2.3884	2.0381
2	12:43:38	101.5%	0.0375	94.7%	1.3082	1.6755	3.1430	2.4570	2.0142
3	12:44:15	98.1%	0.0282	95.6%	1.3499	1.6744	3.1174	2.2806	2.1554
x		100.4%	0.0282	95.4%	1.3134	1.6430	3.1407	2.3754	2.0692
σ		2.0%	0.0094	0.7%	0.0341	0.0553	0.0222	0.0889	0.0755
%RSD		2.0	33.3335	0.7	2.5976	3.3676	0.7080	3.7433	3.6502

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	4.3331	1.8773	92.0%	-0.0882	1.5635	-0.2048	-0.5576	88.1%
2	12:43:38	4.3893	1.9567	94.0%	-0.1832	1.5918	-0.2664	-0.9274	90.2%
3	12:44:15	4.7103	1.8253	95.2%	-0.2088	1.7615	0.1393	-0.8771	90.8%
x		4.4776	1.8864	93.7%	-0.1601	1.6389	-0.1106	-0.7873	89.7%
σ		0.2035	0.0661	1.6%	0.0635	0.1071	0.2186	0.2005	1.4%
%RSD		4.5446	3.5066	1.7	39.6931	6.5335	197.5957	25.4691	1.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	90.8%	0.0496	0.0463	91.8%	0.1579	0.1497	0.1512
2	12:43:38	93.1%	0.0637	0.0737	93.8%	0.1782	0.1683	0.1738
3	12:44:15	93.4%	0.0592	0.0580	94.5%	0.1824	0.1719	0.1738
x		92.4%	0.0575	0.0594	93.4%	0.1728	0.1633	0.1663
σ		1.4%	0.0072	0.0137	1.4%	0.0131	0.0119	0.0131
%RSD		1.5	12.5572	23.1478	1.5	7.5856	7.2761	7.8685

ICSAB 8/3/2016 12:46:49 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	107.3%	0.0179	97.6%	50.0934	50.2985	49.8108	48.3987	27.2011
2	12:47:26	103.7%	0.0321	98.0%	49.2970	49.3955	48.2700	47.3286	26.4547
3	12:48:02	97.9%	0.0334	95.5%	49.9994	49.8824	48.2139	47.4552	26.5532
x		103.0%	0.0278	97.0%	49.7966	49.8588	48.7649	47.7275	26.7363
σ		4.7%	0.0086	1.3%	0.4352	0.4520	0.9062	0.5847	0.4055
%RSD		4.6	30.9751	1.4	0.8740	0.9065	1.8583	1.2251	1.5168

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	27.7560	25.1930	95.1%	25.0432	25.8661	23.9499	23.6767	91.8%
2	12:47:26	27.2295	25.7721	96.2%	24.3613	25.2792	23.0851	23.5271	91.3%
3	12:48:02	27.3969	25.4775	95.0%	24.0746	26.2777	24.2956	23.4515	92.2%
x		27.4608	25.4809	95.4%	24.4930	25.8077	23.7769	23.5518	91.8%
σ		0.2690	0.2896	0.7%	0.4975	0.5018	0.6235	0.1146	0.5%
%RSD		0.9794	1.1365	0.7	2.0313	1.9444	2.6225	0.4867	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	94.4%	0.0336	0.0286	95.5%	0.1365	0.1287	0.1311
2	12:47:26	96.0%	0.0439	0.0453	97.7%	0.1486	0.1434	0.1419
3	12:48:02	95.7%	0.0410	0.0388	98.3%	0.1429	0.1363	0.1374
x		95.4%	0.0395	0.0376	97.1%	0.1427	0.1361	0.1368
σ		0.8%	0.0053	0.0084	1.5%	0.0060	0.0073	0.0054
%RSD		0.9	13.4781	22.3689	1.5	4.2366	5.3721	3.9381

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	102.3%	0.0025	98.3%	-0.0029	0.0450	0.0188	0.0157	-0.0137
2	12:51:06	99.2%	0.0130	95.1%	0.0023	0.0585	0.0305	0.0244	0.0029
3	12:51:43	99.7%	0.0078	96.3%	-0.0026	0.0754	0.0254	0.0139	-0.0008
x		100.4%	0.0078	96.6%	-0.0011	0.0596	0.0249	0.0180	-0.0039
σ		1.7%	0.0052	1.6%	0.0029	0.0152	0.0059	0.0056	0.0087
%RSD		1.7	67.5617	1.7	270.5133	25.4882	23.6067	31.2875	226.5048

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	0.0516	-0.0247	98.8%	0.0098	1.8396	-0.2022	0.0993	98.0%
2	12:51:06	0.0055	-0.0100	97.2%	0.0502	1.4686	-0.4213	0.0789	98.7%
3	12:51:43	0.0181	-0.0110	96.6%	0.0295	1.6547	-0.0033	0.0010	97.6%
x		0.0251	-0.0152	97.5%	0.0298	1.6543	-0.2089	0.0597	98.1%
σ		0.0238	0.0082	1.1%	0.0202	0.1855	0.2091	0.0519	0.5%
%RSD		95.0914	53.9854	1.2	67.6269	11.2146	100.0691	86.8512	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	97.7%	-0.0027	-0.0013	100.1%	0.0081	0.0070	0.0070
2	12:51:06	98.3%	0.0034	0.0040	101.8%	0.0096	0.0106	0.0086
3	12:51:43	98.5%	0.0036	0.0040	102.2%	0.0079	0.0093	0.0093
x		98.1%	0.0015	0.0022	101.4%	0.0085	0.0090	0.0083
σ		0.4%	0.0036	0.0031	1.1%	0.0010	0.0018	0.0012
%RSD		0.4	242.7339	136.9929	1.1	11.3145	19.9029	13.8756

KQ1607936-02 8/3/2016 1:06:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	105.3%	2.4012	97.2%	25.4300	25.7931	12.6477	12.7929	25.5417
2	13:06:40	101.2%	2.4695	96.0%	25.4468	25.3819	12.6981	12.9161	25.6474
3	13:07:17	94.7%	2.6176	95.5%	25.1108	25.1650	12.6703	12.6215	25.3035
x		100.4%	2.4961	96.2%	25.3292	25.4467	12.6720	12.7769	25.4975
σ		5.4%	0.1106	0.9%	0.1893	0.3190	0.0253	0.1479	0.1761
%RSD		5.4	4.4322	0.9	0.7475	1.2536	0.1993	1.1577	0.6907

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	29.5367	27.8183	98.1%	50.3137	51.2640	50.5695	49.4048	98.4%
2	13:06:40	30.0013	28.0722	97.3%	51.4177	50.9710	51.6469	50.3160	99.7%
3	13:07:17	29.0291	28.0459	98.1%	50.5450	51.2706	50.0453	48.4183	98.3%
x		29.5224	27.9788	97.8%	50.7588	51.1685	50.7539	49.3797	98.8%
σ		0.4863	0.1396	0.4%	0.5822	0.1711	0.8166	0.9491	0.8%
%RSD		1.6471	0.4990	0.4	1.1470	0.3344	1.6089	1.9221	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	98.1%	50.7364	50.5130	101.5%	50.2519	51.6037	50.9776
2	13:06:40	99.7%	50.7681	50.1603	102.7%	50.4259	51.9127	51.3935
3	13:07:17	98.2%	51.6057	51.1017	102.9%	50.6085	52.2601	51.7411
x		98.7%	51.0367	50.5917	102.4%	50.4288	51.9255	51.3707
σ		0.9%	0.4930	0.4756	0.7%	0.1783	0.3284	0.3823
%RSD		0.9	0.9660	0.9401	0.7	0.3535	0.6324	0.7441

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	95.0%	2.5619	95.9%	26.0268	25.4634	12.7333	12.8741	25.7640
2	13:10:38	94.0%	2.5442	96.3%	25.5635	25.3786	12.6549	12.7855	26.2329
3	13:11:15	91.4%	2.5815	94.4%	25.4087	25.1575	12.7694	12.6487	25.6944
x		93.5%	2.5625	95.5%	25.6663	25.3331	12.7192	12.7695	25.8971
σ		1.8%	0.0187	1.0%	0.3216	0.1579	0.0586	0.1135	0.2929
%RSD		2.0	0.7279	1.0	1.2531	0.6234	0.4605	0.8892	1.1310

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	29.3930	28.5213	97.0%	51.2213	52.3733	48.9912	51.8164	98.6%
2	13:10:38	29.7539	28.5697	96.2%	51.2684	52.0815	50.2762	49.8779	98.0%
3	13:11:15	28.8391	28.3598	96.9%	51.7714	51.1347	48.6731	52.3780	98.5%
x		29.3287	28.4836	96.7%	51.4204	51.8632	49.3135	51.3574	98.4%
σ		0.4608	0.1099	0.4%	0.3049	0.6475	0.8487	1.3117	0.3%
%RSD		1.5711	0.3859	0.4	0.5929	1.2485	1.7211	2.5540	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	98.3%	51.6857	51.1157	101.1%	50.9121	52.2340	51.8083
2	13:10:38	99.1%	51.6491	51.2691	103.2%	50.7410	52.2848	51.7386
3	13:11:15	99.3%	51.9209	51.4271	102.6%	51.2400	52.7772	52.1288
x		98.9%	51.7519	51.2706	102.3%	50.9644	52.4320	51.8919
σ		0.5%	0.1475	0.1557	1.1%	0.2536	0.3000	0.2081
%RSD		0.5	0.2850	0.3037	1.1	0.4975	0.5722	0.4011

K1606832-006 8/3/2016 1:14:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.7%	0.0026	94.9%	0.0341	0.0555	0.0838	0.0925	1.2994
2	13:15:32	95.6%	-0.0008	93.3%	0.0434	0.0808	0.0920	0.0932	1.3435
3	13:16:09	98.6%	0.0012	93.6%	0.0474	0.0723	0.1028	0.0945	1.2021
x		97.0%	0.0010	93.9%	0.0416	0.0695	0.0929	0.0934	1.2817
σ		1.5%	0.0017	0.8%	0.0068	0.0129	0.0096	0.0010	0.0723
%RSD		1.6	174.3820	0.9	16.2806	18.4912	10.2963	1.0567	5.6436

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	1.3125	1.1663	95.8%	0.0330	1.8212	-0.3612	0.0322	96.2%
2	13:15:32	1.3162	1.1964	96.3%	0.0359	1.7280	-0.1651	0.0914	97.1%
3	13:16:09	1.1767	1.2310	94.9%	0.0173	1.9458	-0.2334	-0.0072	96.6%
x		1.2684	1.1979	95.7%	0.0287	1.8317	-0.2533	0.0388	96.6%
σ		0.0795	0.0324	0.7%	0.0100	0.1093	0.0995	0.0496	0.5%
%RSD		6.2666	2.7064	0.8	34.8797	5.9655	39.3030	127.9914	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.2%	0.0152	0.0168	97.8%	0.0311	0.0269	0.0279
2	13:15:32	96.8%	0.0216	0.0182	99.0%	0.0318	0.0332	0.0299
3	13:16:09	95.9%	0.0211	0.0168	99.7%	0.0309	0.0316	0.0324
x		96.3%	0.0193	0.0173	98.9%	0.0312	0.0306	0.0301
σ		0.5%	0.0035	0.0008	1.0%	0.0005	0.0033	0.0023
%RSD		0.5	18.3656	4.6145	1.0	1.5558	10.6389	7.6294

K1606832-006L 8/3/2016 1:18:30 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	105.5%	0.0015	94.6%	-0.0014	0.0012	0.0180	0.0234	0.2083
2	13:19:06	98.6%	0.0007	96.0%	-0.0132	0.0061	0.0165	0.0240	0.2564
3	13:19:43	97.2%	0.0030	96.2%	-0.0033	-0.0153	0.0211	0.0021	0.2383
x		100.4%	0.0017	95.6%	-0.0060	-0.0027	0.0186	0.0165	0.2343
σ		4.4%	0.0012	0.8%	0.0063	0.0112	0.0024	0.0125	0.0243
%RSD		4.4	67.1444	0.9	106.1766	420.4207	12.6811	75.8328	10.3608

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	0.2409	0.2264	96.6%	0.1141	0.2841	-0.2150	0.2385	96.2%
2	13:19:06	0.2969	0.2335	98.0%	0.0442	0.4606	-0.1752	0.1882	96.9%
3	13:19:43	0.1546	0.2749	96.2%	0.0019	0.4979	-0.1567	0.0904	97.8%
x		0.2308	0.2449	96.9%	0.0534	0.4142	-0.1823	0.1724	96.9%
σ		0.0717	0.0262	0.9%	0.0566	0.1142	0.0298	0.0753	0.8%
%RSD		31.0668	10.6856	1.0	106.0825	27.5687	16.3219	43.6889	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	96.5%	-0.0131	-0.0083	96.7%	0.0093	0.0059	0.0078
2	13:19:06	97.8%	-0.0077	-0.0049	99.0%	0.0101	0.0095	0.0081
3	13:19:43	97.7%	-0.0072	-0.0075	99.8%	0.0099	0.0119	0.0096
x		97.4%	-0.0093	-0.0069	98.5%	0.0097	0.0091	0.0085
σ		0.7%	0.0033	0.0018	1.6%	0.0004	0.0030	0.0010
%RSD		0.7	35.2388	25.9221	1.6	4.4386	33.2716	11.2575

K1606832-006A 8/3/2016 1:22:03 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	99.2%	20.4433	96.8%	21.1936	21.0694	21.2988	21.4634	22.3573
2	13:22:40	98.9%	20.2169	92.0%	21.8326	21.3973	21.5108	21.4226	22.3424
3	13:23:17	99.1%	20.1481	95.6%	21.2707	21.1500	21.2476	20.9309	22.5631
x		99.1%	20.2694	94.8%	21.4323	21.2055	21.3524	21.2723	22.4209
σ		0.2%	0.1545	2.5%	0.3488	0.1709	0.1395	0.2964	0.1233
%RSD		0.2	0.7621	2.7	1.6275	0.8059	0.6534	1.3932	0.5501

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	22.5175	22.2216	96.0%	21.1216	22.2181	20.4610	21.6878	96.2%
2	13:22:40	22.3645	22.2692	96.4%	21.0818	22.6540	20.4815	20.6758	96.2%
3	13:23:17	21.6850	21.9754	95.7%	21.2072	21.7388	19.4586	20.9449	96.6%
x		22.1890	22.1554	96.0%	21.1369	22.2036	20.1337	21.1028	96.4%
σ		0.4431	0.1577	0.4%	0.0641	0.4578	0.5847	0.5242	0.2%
%RSD		1.9970	0.7117	0.4	0.3031	2.0617	2.9042	2.4838	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	97.2%	21.4180	21.3357	98.5%	21.2632	21.1367	21.1585
2	13:22:40	96.3%	21.7266	21.6745	100.7%	21.1525	21.1633	21.2366
3	13:23:17	97.2%	21.5013	21.5065	100.0%	21.3760	21.3954	21.4088
x		96.9%	21.5486	21.5056	99.8%	21.2639	21.2318	21.2680
σ		0.5%	0.1596	0.1694	1.1%	0.1117	0.1423	0.1280
%RSD		0.5	0.7408	0.7877	1.1	0.5253	0.6700	0.6020

K1606956-012 8/3/2016 1:25:52 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	99.5%	0.0096	94.7%	0.1052	0.0923	0.1495	0.1523	1.2404
2	13:26:29	90.0%	0.0186	93.0%	0.1238	0.1109	0.1700	0.1785	1.1736
3	13:27:06	90.9%	0.0092	93.0%	0.0989	0.0953	0.1575	0.1547	1.2130
x		93.5%	0.0124	93.6%	0.1093	0.0995	0.1590	0.1618	1.2090
σ		5.2%	0.0054	1.0%	0.0130	0.0100	0.0103	0.0145	0.0336
%RSD		5.6	43.0305	1.1	11.8497	10.0192	6.5060	8.9429	2.7774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	1.1149	1.2133	95.7%	0.1412	1.6068	-0.3806	0.1715	96.5%
2	13:26:29	1.0217	1.1553	95.4%	0.0321	2.0865	-0.2696	0.1732	96.0%
3	13:27:06	1.1759	1.1377	95.1%	-0.0166	2.0111	-0.3613	-0.1070	96.2%
x		1.1042	1.1688	95.4%	0.0522	1.9015	-0.3372	0.0793	96.2%
σ		0.0776	0.0396	0.3%	0.0808	0.2580	0.0593	0.1613	0.2%
%RSD		7.0296	3.3879	0.3	154.7012	13.5669	17.5914	203.4871	0.2

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	94.8%	0.0103	0.0106	97.7%	0.0700	0.0694	0.0693
2	13:26:29	95.0%	0.0210	0.0178	99.3%	0.0792	0.0804	0.0784
3	13:27:06	95.7%	0.0123	0.0106	99.7%	0.0714	0.0722	0.0719
x		95.2%	0.0145	0.0130	98.9%	0.0735	0.0740	0.0732
σ		0.4%	0.0057	0.0041	1.1%	0.0050	0.0057	0.0047
%RSD		0.5	39.2414	31.8788	1.1	6.7977	7.7116	6.4348

K1607019-010 8/3/2016 1:29:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	96.3%	0.0035	94.2%	0.1593	0.1657	0.1542	0.1753	1.3872
2	13:30:19	96.2%	0.0027	92.3%	0.1589	0.1450	0.1548	0.1583	1.4792
3	13:30:56	91.8%	0.0072	93.3%	0.1815	0.1338	0.1533	0.1538	1.4574
x		94.8%	0.0045	93.2%	0.1666	0.1481	0.1541	0.1625	1.4413
σ		2.6%	0.0024	1.0%	0.0129	0.0162	0.0007	0.0113	0.0481
%RSD		2.7	54.1311	1.0	7.7662	10.9315	0.4604	6.9716	3.3353

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	1.3825	1.3779	95.3%	-0.0471	2.1025	-0.1488	-0.0176	95.7%
2	13:30:19	1.4152	1.3839	96.5%	-0.0230	1.9154	0.0007	0.0314	96.1%
3	13:30:56	1.4258	1.4140	94.6%	-0.0776	2.1817	-0.0423	-0.0873	96.5%
x		1.4078	1.3919	95.5%	-0.0492	2.0665	-0.0635	-0.0245	96.1%
σ		0.0225	0.0193	1.0%	0.0274	0.1367	0.0770	0.0597	0.4%
%RSD		1.6014	1.3890	1.0	55.5913	6.6169	121.2961	243.4976	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	94.8%	0.0015	0.0023	97.6%	0.0298	0.0244	0.0268
2	13:30:19	96.3%	-0.0009	0.0045	99.9%	0.0337	0.0316	0.0295
3	13:30:56	96.1%	0.0032	0.0013	99.7%	0.0342	0.0312	0.0294
x		95.7%	0.0013	0.0027	99.1%	0.0326	0.0291	0.0286
σ		0.8%	0.0021	0.0017	1.2%	0.0024	0.0040	0.0015
%RSD		0.8	163.3964	61.8161	1.3	7.3886	13.8609	5.2801

K1607034-011 8/3/2016 1:33:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	101.7%	0.0030	95.0%	0.0994	0.0948	0.0722	0.0665	0.5486
2	13:33:58	98.2%	0.0008	93.9%	0.0850	0.0696	0.0706	0.0772	0.4684
3	13:34:35	91.5%	0.0049	94.2%	0.0909	0.1020	0.0773	0.0808	0.5383
x		97.1%	0.0029	94.4%	0.0918	0.0888	0.0734	0.0749	0.5184
σ		5.1%	0.0021	0.6%	0.0072	0.0170	0.0035	0.0075	0.0436
%RSD		5.3	72.2323	0.6	7.8586	19.1852	4.7857	9.9715	8.4150

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	0.5158	0.5268	94.8%	-0.2155	2.4683	0.0106	-0.2166	95.4%
2	13:33:58	0.4752	0.4553	94.4%	0.0041	2.0244	-0.1542	-0.0086	96.3%
3	13:34:35	0.5166	0.5355	94.8%	0.0081	1.9358	-0.1252	-0.0674	96.0%
x		0.5025	0.5059	94.7%	-0.0678	2.1429	-0.0896	-0.0975	95.9%
σ		0.0237	0.0440	0.2%	0.1279	0.2853	0.0880	0.1072	0.5%
%RSD		4.7171	8.6997	0.3	188.7278	13.3154	98.1413	109.9461	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	95.4%	-0.0022	-0.0062	97.8%	0.0093	0.0128	0.0102
2	13:33:58	96.4%	-0.0030	-0.0004	99.4%	0.0100	0.0097	0.0099
3	13:34:35	96.3%	-0.0070	-0.0017	100.0%	0.0119	0.0131	0.0113
x		96.1%	-0.0041	-0.0028	99.1%	0.0104	0.0118	0.0104
σ		0.5%	0.0026	0.0030	1.2%	0.0013	0.0019	0.0007
%RSD		0.6	63.1923	108.8738	1.2	12.7849	15.9757	7.0552

CCV2 8/3/2016 1:36:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	94.9%	25.1550	96.4%	25.0082	25.0840	25.3274	24.9542	26.0927
2	13:37:32	96.5%	25.0253	94.9%	25.2027	25.0816	25.1350	25.2209	25.3994
3	13:38:08	92.5%	25.6392	94.4%	25.1441	25.2254	25.2308	25.5684	25.9205
x		94.6%	25.2732	95.2%	25.1183	25.1303	25.2311	25.2478	25.8042
σ		2.0%	0.3235	1.0%	0.0998	0.0824	0.0962	0.3080	0.3609
%RSD		2.1	1.2802	1.1	0.3973	0.3277	0.3812	1.2200	1.3988

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	26.0432	25.3710	96.3%	25.4587	24.8189	25.3277	24.9381	97.9%
2	13:37:32	25.0095	25.0716	97.0%	25.2400	24.7289	24.8517	24.8204	99.1%
3	13:38:08	25.3300	25.7157	96.3%	24.7102	24.8569	25.0834	24.0360	99.1%
x		25.4609	25.3861	96.5%	25.1363	24.8016	25.0876	24.5982	98.7%
σ		0.5291	0.3223	0.4%	0.3849	0.0657	0.2380	0.4904	0.7%
%RSD		2.0782	1.2698	0.4	1.5311	0.2651	0.9488	1.9936	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	97.7%	25.0925	24.8617	100.0%	25.3336	25.0709	25.3316
2	13:37:32	99.2%	25.0185	25.1465	102.0%	25.2907	25.2712	25.3645
3	13:38:08	99.7%	25.0802	25.1635	102.2%	25.4072	25.2456	25.4113
x		98.9%	25.0637	25.0572	101.4%	25.3439	25.1959	25.3692
σ		1.0%	0.0397	0.1696	1.2%	0.0589	0.1090	0.0400
%RSD		1.1	0.1582	0.6768	1.2	0.2324	0.4326	0.1578

CCB2 8/3/2016 1:44:43 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	100.0%	0.0065	99.6%	0.0123	0.0145	0.0076	0.0089	0.0073
2	13:45:19	99.0%	0.0092	99.1%	-0.0092	0.0211	0.0157	0.0092	0.0079
3	13:45:56	98.3%	0.0093	96.6%	0.0025	0.0131	0.0171	0.0187	0.0238
x		99.1%	0.0083	98.4%	0.0019	0.0162	0.0134	0.0123	0.0130
σ		0.8%	0.0016	1.6%	0.0107	0.0043	0.0051	0.0056	0.0094
%RSD		0.9	19.1081	1.6	574.8117	26.2100	38.1735	45.3779	71.9169

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	-0.0133	0.0043	96.9%	-0.0960	0.1204	-0.1028	-0.2724	98.7%
2	13:45:19	0.0217	0.0237	98.5%	0.0864	-0.0562	-0.0657	0.1947	99.3%
3	13:45:56	-0.0259	-0.0173	97.9%	-0.0730	-0.0021	-0.0763	-0.3099	99.0%
x		-0.0059	0.0035	97.7%	-0.0275	0.0207	-0.0816	-0.1292	99.0%
σ		0.0247	0.0205	0.8%	0.0993	0.0905	0.0191	0.2811	0.3%
%RSD		421.2734	578.2496	0.8	360.6172	437.2982	23.4582	217.6102	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	97.7%	0.0147	0.0160	98.0%	0.0098	0.0065	0.0058
2	13:45:19	99.5%	0.0153	0.0220	100.3%	0.0112	0.0108	0.0093
3	13:45:56	99.4%	0.0215	0.0214	101.3%	0.0077	0.0154	0.0091
x		98.9%	0.0172	0.0198	99.8%	0.0096	0.0109	0.0081
σ		1.0%	0.0038	0.0033	1.7%	0.0017	0.0044	0.0020
%RSD		1.0	21.8507	16.7311	1.7	18.1065	40.5944	24.5837

K1607146-009 8/3/2016 1:48:33 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	103.7%	0.0003	98.8%	0.0889	0.1072	0.2164	0.2181	2.4863
2	13:49:11	101.8%	0.0034	95.3%	0.0803	0.0691	0.2130	0.2280	2.4779
3	13:49:48	97.9%	0.0038	93.9%	0.0778	0.0921	0.2088	0.2014	2.4588
x		101.1%	0.0025	96.0%	0.0823	0.0895	0.2127	0.2159	2.4744
σ		3.0%	0.0019	2.5%	0.0058	0.0192	0.0038	0.0135	0.0141
%RSD		2.9	75.1372	2.6	7.0419	21.4774	1.7907	6.2367	0.5702

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	2.3237	2.3520	95.8%	-0.1079	2.1956	-0.1327	-0.1158	96.7%
2	13:49:11	2.2439	2.3731	95.2%	-0.0226	1.8031	-0.1323	-0.0868	96.8%
3	13:49:48	2.3458	2.3726	96.2%	-0.0453	1.9041	-0.0042	-0.0369	97.0%
x		2.3045	2.3659	95.7%	-0.0586	1.9676	-0.0897	-0.0799	96.9%
σ		0.0536	0.0121	0.5%	0.0442	0.2039	0.0741	0.0399	0.1%
%RSD		2.3260	0.5106	0.5	75.4141	10.3604	82.5619	49.9653	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	96.4%	0.0024	0.0082	97.3%	0.0185	0.0170	0.0167
2	13:49:11	97.5%	0.0145	0.0169	99.9%	0.0159	0.0195	0.0172
3	13:49:48	96.8%	0.0089	0.0126	99.7%	0.0171	0.0149	0.0156
x		96.9%	0.0086	0.0126	99.0%	0.0172	0.0171	0.0165
σ		0.6%	0.0060	0.0044	1.4%	0.0013	0.0023	0.0008
%RSD		0.6	69.9296	34.5970	1.4	7.5594	13.2104	4.8907

K1607207-006 8/3/2016 1:52:16 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	99.2%	0.0066	95.9%	0.0715	0.0592	0.2383	0.2227	0.7695
2	13:52:53	97.4%	0.0086	93.6%	0.0664	0.0850	0.2498	0.2235	0.8533
3	13:53:30	96.2%	0.0071	91.9%	0.0567	0.0650	0.2336	0.2272	0.8118
x		97.6%	0.0074	93.8%	0.0649	0.0697	0.2406	0.2245	0.8115
σ		1.6%	0.0010	2.0%	0.0075	0.0135	0.0083	0.0024	0.0419
%RSD		1.6	14.1099	2.1	11.5789	19.4325	3.4545	1.0820	5.1579

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	0.8830	0.8188	95.7%	-0.0446	1.7181	-0.3807	-0.1660	95.7%
2	13:52:53	0.8312	0.8032	95.6%	0.0293	1.8337	0.0318	0.0230	97.3%
3	13:53:30	0.7752	0.7330	94.3%	0.0521	1.9053	-0.0592	0.1821	95.9%
x		0.8298	0.7850	95.2%	0.0122	1.8190	-0.1360	0.0130	96.3%
σ		0.0539	0.0457	0.8%	0.0506	0.0944	0.2167	0.1743	0.9%
%RSD		6.4968	5.8228	0.8	412.6956	5.1917	159.3228	1335.8151	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	95.1%	0.0020	-0.0004	96.8%	0.0152	0.0218	0.0167
2	13:52:53	96.4%	0.0029	0.0009	98.4%	0.0194	0.0162	0.0168
3	13:53:30	96.1%	-0.0003	0.0036	98.2%	0.0163	0.0206	0.0164
x		95.9%	0.0015	0.0014	97.8%	0.0170	0.0196	0.0166
σ		0.7%	0.0017	0.0021	0.9%	0.0022	0.0029	0.0002
%RSD		0.7	109.9564	151.1583	0.9	12.8493	14.9866	1.3734

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	105.1%	0.0027	98.4%	0.0568	0.0272	0.0975	0.1110	0.8500
2	13:56:34	100.1%	0.0019	96.1%	0.0697	0.0428	0.0974	0.1062	0.7501
3	13:57:11	98.5%	0.0024	97.2%	0.0751	0.0768	0.1096	0.0910	0.7711
x		101.3%	0.0023	97.2%	0.0672	0.0489	0.1015	0.1028	0.7904
σ		3.4%	0.0004	1.1%	0.0094	0.0254	0.0070	0.0104	0.0526
%RSD		3.4	17.8069	1.2	14.0002	51.8746	6.9108	10.1564	6.6610

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	0.8154	0.7149	94.4%	-0.0029	1.8903	-0.1729	0.0232	95.8%
2	13:56:34	0.6830	0.6675	95.8%	-0.1513	2.0905	-0.2512	-0.3247	96.2%
3	13:57:11	0.7910	0.6553	95.3%	-0.0626	1.9548	-0.0321	-0.0864	95.7%
x		0.7631	0.6792	95.2%	-0.0723	1.9786	-0.1521	-0.1293	95.9%
σ		0.0705	0.0314	0.7%	0.0746	0.1022	0.1110	0.1779	0.3%
%RSD		9.2341	4.6303	0.7	103.2671	5.1649	72.9896	137.5526	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	94.7%	0.0008	-0.0034	95.6%	0.0340	0.0340	0.0341
2	13:56:34	95.7%	0.0003	0.0008	97.5%	0.0356	0.0359	0.0327
3	13:57:11	95.6%	-0.0043	0.0024	98.0%	0.0295	0.0284	0.0310
x		95.3%	-0.0011	-0.0001	97.0%	0.0330	0.0328	0.0326
σ		0.5%	0.0028	0.0030	1.2%	0.0032	0.0039	0.0015
%RSD		0.6	257.8440	5433.1638	1.3	9.5936	11.7821	4.7405

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	108.2%	0.0098	98.1%	0.0672	0.0691	0.1303	0.1244	1.2645
2	14:00:13	99.6%	0.0044	96.7%	0.0595	0.0767	0.1134	0.1096	1.2753
3	14:00:50	97.9%	0.0068	94.9%	0.0752	0.0875	0.1319	0.1077	1.2561
x		101.9%	0.0070	96.6%	0.0673	0.0777	0.1252	0.1139	1.2653
σ		5.5%	0.0027	1.6%	0.0078	0.0093	0.0102	0.0091	0.0096
%RSD		5.4	38.6144	1.7	11.6520	11.9063	8.1837	8.0315	0.7572

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	1.1837	1.2131	95.6%	-0.0157	1.9058	-0.4390	-0.0971	96.1%
2	14:00:13	1.2721	1.1492	96.2%	0.0581	1.5030	0.0306	-0.1451	96.8%
3	14:00:50	1.1378	1.2129	94.7%	0.0235	1.8931	-0.2047	0.0630	96.8%
x		1.1979	1.1917	95.5%	0.0219	1.7673	-0.2044	-0.0597	96.6%
σ		0.0683	0.0369	0.8%	0.0369	0.2290	0.2348	0.1090	0.4%
%RSD		5.7021	3.0931	0.8	168.1549	12.9579	114.8950	182.3737	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	94.6%	-0.0013	-0.0010	96.0%	0.0322	0.0323	0.0330
2	14:00:13	95.4%	-0.0025	-0.0022	97.7%	0.0330	0.0332	0.0329
3	14:00:50	96.5%	0.0009	-0.0004	97.6%	0.0337	0.0356	0.0313
x		95.5%	-0.0010	-0.0012	97.1%	0.0330	0.0337	0.0324
σ		0.9%	0.0017	0.0009	0.9%	0.0007	0.0017	0.0010
%RSD		1.0	176.6463	76.7616	0.9	2.2075	5.0381	2.9697

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	104.5%	0.0108	95.1%	0.1194	0.1402	0.2111	0.2064	1.7380
2	14:03:54	98.5%	0.0046	95.8%	0.1303	0.1311	0.2088	0.2136	1.7289
3	14:04:30	100.5%	0.0077	93.4%	0.1323	0.0981	0.2321	0.2024	1.7849
x		101.2%	0.0077	94.8%	0.1273	0.1231	0.2173	0.2075	1.7506
σ		3.1%	0.0031	1.2%	0.0069	0.0221	0.0129	0.0057	0.0301
%RSD		3.0	40.6853	1.3	5.4438	17.9721	5.9172	2.7237	1.7185

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	1.8054	1.6954	95.7%	0.0497	1.8817	-0.1014	0.0409	95.3%
2	14:03:54	1.6991	1.8204	95.6%	0.0979	1.7309	-0.3085	0.2311	96.3%
3	14:04:30	1.8083	1.6960	96.2%	-0.1613	2.3790	-0.1119	-0.1457	95.9%
x		1.7710	1.7373	95.8%	-0.0046	1.9972	-0.1739	0.0421	95.9%
σ		0.0622	0.0720	0.3%	0.1379	0.3392	0.1166	0.1884	0.5%
%RSD		3.5137	4.1421	0.3	3018.6515	16.9816	67.0601	447.9371	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	94.2%	0.0037	-0.0036	96.1%	0.0885	0.0774	0.0858
2	14:03:54	96.2%	0.0025	0.0006	98.3%	0.0851	0.0835	0.0830
3	14:04:30	96.4%	0.0011	-0.0010	98.3%	0.0926	0.0857	0.0863
x		95.6%	0.0024	-0.0013	97.6%	0.0887	0.0822	0.0850
σ		1.2%	0.0013	0.0021	1.3%	0.0038	0.0043	0.0018
%RSD		1.3	52.7622	160.0935	1.3	4.2331	5.1992	2.0749

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	103.7%	0.0020	97.7%	0.0783	0.1060	0.0630	0.0625	1.2312
2	14:07:40	97.5%	0.0004	93.4%	0.0808	0.0539	0.0687	0.0647	1.2511
3	14:08:17	98.9%	0.0003	94.7%	0.0825	0.0568	0.0729	0.0631	1.3434
x		100.0%	0.0009	95.3%	0.0806	0.0722	0.0682	0.0634	1.2752
σ		3.2%	0.0010	2.2%	0.0021	0.0293	0.0050	0.0012	0.0598
%RSD		3.2	109.3727	2.3	2.6230	40.5345	7.2790	1.8416	4.6911

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	1.1812	1.1795	95.9%	0.0003	2.2113	-0.1459	0.1625	95.8%
2	14:07:40	1.3525	1.1847	94.9%	-0.0506	1.9848	-0.2805	-0.0069	96.7%
3	14:08:17	1.1885	1.2042	95.8%	0.0713	1.7641	-0.3432	0.1212	97.1%
x		1.2407	1.1895	95.5%	0.0070	1.9867	-0.2565	0.0923	96.5%
σ		0.0968	0.0130	0.6%	0.0612	0.2236	0.1008	0.0883	0.7%
%RSD		7.8036	1.0915	0.6	874.0161	11.2546	39.2927	95.6913	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	95.4%	-0.0040	-0.0048	95.6%	0.0141	0.0158	0.0136
2	14:07:40	96.4%	-0.0065	-0.0066	99.0%	0.0170	0.0125	0.0142
3	14:08:17	95.7%	-0.0026	-0.0049	98.7%	0.0150	0.0149	0.0140
x		95.8%	-0.0044	-0.0054	97.8%	0.0154	0.0144	0.0139
σ		0.5%	0.0020	0.0010	1.8%	0.0015	0.0017	0.0003
%RSD		0.5	45.7093	19.0705	1.9	9.8077	11.5867	2.1741

K1607636-007 8/3/2016 2:10:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	95.2%	0.0027	96.1%	0.1303	0.1453	0.1095	0.1068	0.4891
2	14:11:13	99.7%	0.0023	93.2%	0.1592	0.1649	0.1256	0.0987	0.4937
3	14:11:49	93.5%	0.0025	93.5%	0.1477	0.1328	0.1085	0.1162	0.5063
x		96.1%	0.0025	94.3%	0.1457	0.1477	0.1145	0.1072	0.4964
σ		3.2%	0.0002	1.6%	0.0145	0.0162	0.0096	0.0088	0.0089
%RSD		3.4	7.8230	1.7	9.9584	10.9394	8.3850	8.1675	1.7960

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	0.5249	0.4575	95.2%	0.0704	1.7255	-0.2164	-0.0672	95.8%
2	14:11:13	0.5409	0.4395	96.3%	0.0956	1.9053	-0.1627	0.1605	96.6%
3	14:11:49	0.5638	0.3880	95.5%	-0.0047	2.0711	-0.1985	-0.0856	96.1%
x		0.5432	0.4283	95.7%	0.0538	1.9007	-0.1926	0.0026	96.2%
σ		0.0195	0.0361	0.5%	0.0521	0.1728	0.0274	0.1371	0.4%
%RSD		3.5978	8.4249	0.6	96.9549	9.0939	14.2074	5290.3657	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	94.8%	-0.0063	-0.0068	97.1%	0.0085	0.0116	0.0097
2	14:11:13	96.4%	-0.0055	-0.0034	100.0%	0.0110	0.0126	0.0110
3	14:11:49	96.4%	-0.0065	-0.0060	100.3%	0.0094	0.0098	0.0090
x		95.9%	-0.0061	-0.0054	99.1%	0.0097	0.0113	0.0099
σ		0.9%	0.0005	0.0018	1.7%	0.0013	0.0014	0.0011
%RSD		0.9	8.7059	32.9320	1.7	13.1644	12.5821	10.7389

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	99.1%	0.0037	94.5%	0.2330	0.2037	0.2100	0.2283	1.0785
2	14:14:53	93.7%	0.0056	93.7%	0.2201	0.2079	0.2288	0.2036	1.1158
3	14:15:30	94.7%	0.0068	91.7%	0.2319	0.2026	0.2311	0.2194	1.1516
x		95.8%	0.0053	93.3%	0.2283	0.2047	0.2233	0.2171	1.1153
σ		2.9%	0.0016	1.4%	0.0072	0.0028	0.0116	0.0125	0.0365
%RSD		3.0	29.6000	1.5	3.1357	1.3836	5.1805	5.7466	3.2764

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	0.9382	1.1112	94.7%	-0.0584	2.0225	-0.0253	-0.1979	95.4%
2	14:14:53	1.0840	1.0958	94.7%	-0.0112	2.0443	-0.1775	-0.2476	96.5%
3	14:15:30	0.9445	1.0518	94.5%	0.0329	1.8158	-0.1423	0.0327	96.7%
x		0.9889	1.0863	94.6%	-0.0122	1.9609	-0.1150	-0.1376	96.2%
σ		0.0824	0.0309	0.1%	0.0457	0.1261	0.0796	0.1495	0.7%
%RSD		8.3337	2.8413	0.1	373.7535	6.4302	69.2326	108.6710	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	95.4%	-0.0084	-0.0065	97.1%	0.0263	0.0225	0.0234
2	14:14:53	96.5%	-0.0055	-0.0037	98.9%	0.0285	0.0299	0.0285
3	14:15:30	96.8%	-0.0081	-0.0041	100.0%	0.0272	0.0207	0.0247
x		96.2%	-0.0073	-0.0048	98.7%	0.0273	0.0244	0.0255
σ		0.7%	0.0016	0.0015	1.5%	0.0011	0.0049	0.0026
%RSD		0.8	21.7863	31.7039	1.5	3.8975	20.0326	10.3483

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	98.5%	0.0037	95.6%	0.0975	0.1161	0.0832	0.0928	0.3106
2	14:18:28	95.9%	0.0014	93.1%	0.0974	0.0783	0.0709	0.0724	0.3306
3	14:19:05	98.3%	0.0012	93.9%	0.1066	0.0695	0.0749	0.0721	0.3600
x		97.6%	0.0021	94.2%	0.1005	0.0880	0.0763	0.0791	0.3337
σ		1.4%	0.0014	1.3%	0.0053	0.0248	0.0063	0.0119	0.0248
%RSD		1.5	67.7052	1.4	5.2257	28.1370	8.2119	15.0095	7.4326

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	0.4035	0.3121	94.6%	0.0393	2.0771	0.0549	0.1540	95.8%
2	14:18:28	0.3922	0.3426	94.8%	0.1663	1.5294	-0.0809	0.0335	96.1%
3	14:19:05	0.3501	0.3209	95.7%	0.0884	1.6205	-0.0148	-0.1474	96.6%
x		0.3819	0.3252	95.0%	0.0980	1.7424	-0.0136	0.0134	96.2%
σ		0.0281	0.0157	0.6%	0.0641	0.2935	0.0679	0.1517	0.4%
%RSD		7.3646	4.8263	0.6	65.3836	16.8444	498.4866	1134.1936	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	94.4%	-0.0057	-0.0077	97.1%	0.0097	0.0092	0.0090
2	14:18:28	96.3%	-0.0067	-0.0112	98.5%	0.0146	0.0134	0.0110
3	14:19:05	96.5%	-0.0070	-0.0080	99.3%	0.0107	0.0125	0.0112
x		95.7%	-0.0065	-0.0090	98.3%	0.0117	0.0117	0.0104
σ		1.1%	0.0007	0.0020	1.1%	0.0026	0.0022	0.0012
%RSD		1.2	10.7266	21.8614	1.1	22.5106	18.6742	11.9651

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	103.4%	24.6848	97.2%	25.8973	25.3909	25.4026	25.9189	25.6806
2	14:22:00	101.0%	24.8784	97.4%	25.4249	25.1996	25.0559	24.9735	25.4780
3	14:22:37	102.0%	24.5257	98.1%	25.2934	24.9972	24.9115	25.4667	25.2623
x		102.1%	24.6963	97.5%	25.5385	25.1959	25.1233	25.4531	25.4736
σ		1.2%	0.1766	0.5%	0.3176	0.1968	0.2524	0.4729	0.2092
%RSD		1.2	0.7152	0.5	1.2435	0.7813	1.0048	1.8578	0.8212

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	24.8011	25.5555	97.1%	25.6419	24.9977	25.1826	25.8178	97.5%
2	14:22:00	25.1232	24.8745	98.6%	25.2047	24.8743	24.5652	25.3155	97.9%
3	14:22:37	24.5761	25.0287	98.5%	25.1401	25.4988	24.7982	25.4012	99.1%
x		24.8335	25.1529	98.1%	25.3289	25.1236	24.8487	25.5115	98.2%
σ		0.2750	0.3571	0.9%	0.2729	0.3307	0.3118	0.2687	0.8%
%RSD		1.1072	1.4198	0.9	1.0776	1.3164	1.2546	1.0534	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	96.9%	24.9602	24.7514	97.8%	25.1074	25.1317	25.1583
2	14:22:00	98.1%	25.0018	24.8196	100.0%	25.1121	24.9996	24.9430
3	14:22:37	98.8%	24.7085	24.7473	99.6%	25.2657	25.0152	25.2027
x		97.9%	24.8902	24.7728	99.1%	25.1617	25.0488	25.1013
σ		1.0%	0.1587	0.0406	1.1%	0.0901	0.0722	0.1389
%RSD		1.0	0.6377	0.1639	1.1	0.3580	0.2882	0.5533

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	106.1%	0.0097	100.6%	0.0182	0.0061	0.0157	0.0200	0.0268
2	14:31:08	101.9%	0.0186	99.4%	0.0005	0.0468	0.0168	0.0166	0.0232
3	14:31:45	103.7%	0.0105	100.4%	0.0076	0.0087	0.0105	0.0097	0.0095
x		103.9%	0.0129	100.1%	0.0088	0.0205	0.0143	0.0154	0.0198
σ		2.1%	0.0049	0.7%	0.0089	0.0228	0.0034	0.0052	0.0091
%RSD		2.0	38.1260	0.7	102.0424	110.8877	23.3548	33.7771	45.8437

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	0.0030	0.0204	98.8%	-0.0503	0.1655	-0.2904	-0.1131	98.3%
2	14:31:08	-0.0156	0.0170	99.8%	0.0251	0.0958	-0.1217	0.1446	99.4%
3	14:31:45	0.0033	0.0026	98.6%	-0.0651	-0.0046	-0.0427	-0.2981	99.9%
x		-0.0031	0.0133	99.0%	-0.0301	0.0856	-0.1516	-0.0889	99.2%
σ		0.0108	0.0095	0.6%	0.0484	0.0855	0.1265	0.2223	0.8%
%RSD		347.0159	71.1854	0.6	160.6724	99.9414	83.4676	250.2364	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	97.8%	0.0092	0.0069	96.3%	0.0130	0.0135	0.0129
2	14:31:08	99.2%	0.0157	0.0168	98.8%	0.0110	0.0151	0.0133
3	14:31:45	98.9%	0.0113	0.0075	99.0%	0.0145	0.0138	0.0134
x		98.6%	0.0121	0.0104	98.0%	0.0128	0.0142	0.0132
σ		0.7%	0.0033	0.0055	1.5%	0.0018	0.0009	0.0003
%RSD		0.8	27.4597	53.1143	1.5	13.8869	6.0311	2.0834

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	102.4%	0.0070	99.8%	0.0039	0.0144	0.0147	0.0137	0.0342
2	14:34:56	103.5%	0.0113	99.4%	-0.0019	0.0361	0.0130	0.0184	0.0258
3	14:35:33	106.5%	0.0081	98.4%	0.0119	0.0162	0.0123	0.0201	0.0002
x		104.2%	0.0088	99.2%	0.0046	0.0222	0.0133	0.0174	0.0201
σ		2.1%	0.0023	0.7%	0.0069	0.0120	0.0012	0.0033	0.0177
%RSD		2.0	25.6081	0.7	150.4790	54.1205	9.0138	19.0341	88.3850

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	0.0095	0.0158	98.4%	-0.0281	-0.0693	-0.0859	-0.1826	99.4%
2	14:34:56	-0.0218	-0.0013	100.1%	-0.0644	0.0806	-0.1019	-0.1896	100.9%
3	14:35:33	-0.0163	0.0337	101.0%	-0.0151	0.0901	-0.2698	0.0108	101.3%
x		-0.0095	0.0160	99.8%	-0.0359	0.0338	-0.1526	-0.1205	100.5%
σ		0.0167	0.0175	1.3%	0.0256	0.0894	0.1019	0.1138	1.0%
%RSD		175.4036	109.2396	1.3	71.3260	264.6664	66.7625	94.4279	1.0

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	99.0%	0.0017	0.0027	97.3%	0.0080	0.0053	0.0061
2	14:34:56	100.4%	0.0048	0.0091	99.2%	0.0076	0.0084	0.0084
3	14:35:33	99.9%	0.0044	0.0019	99.4%	0.0084	0.0081	0.0070
x		99.8%	0.0036	0.0045	98.7%	0.0080	0.0073	0.0072
σ		0.7%	0.0017	0.0039	1.2%	0.0004	0.0017	0.0012
%RSD		0.7	47.1398	86.4013	1.2	5.4158	23.6269	16.4987

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	105.8%	0.0225	100.4%	0.1481	0.1856	0.0977	0.0962	0.5535
2	14:38:35	101.6%	0.0261	99.8%	0.1763	0.1981	0.1051	0.0887	0.5176
3	14:39:11	102.5%	0.0156	98.5%	0.1670	0.1653	0.0999	0.0853	0.4696
x		103.3%	0.0214	99.6%	0.1638	0.1830	0.1009	0.0901	0.5136
σ		2.2%	0.0053	1.0%	0.0144	0.0166	0.0038	0.0056	0.0421
%RSD		2.1	24.9043	1.0	8.7793	9.0511	3.7360	6.1868	8.1904

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	0.3758	0.4672	98.7%	0.4774	1.0626	1.2671	0.9370	100.4%
2	14:38:35	0.4632	0.4731	99.4%	0.5283	0.8462	0.9208	0.8838	101.1%
3	14:39:11	0.5736	0.5037	99.1%	0.5500	1.0556	1.1144	1.2166	101.2%
x		0.4709	0.4813	99.1%	0.5186	0.9882	1.1007	1.0125	100.9%
σ		0.0991	0.0196	0.3%	0.0373	0.1230	0.1735	0.1788	0.4%
%RSD		21.0487	4.0760	0.3	7.1837	12.4433	15.7658	17.6574	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	98.7%	0.0496	0.0418	98.3%	0.0181	0.0173	0.0198
2	14:38:35	101.1%	0.0511	0.0486	99.6%	0.0215	0.0205	0.0197
3	14:39:11	100.9%	0.0480	0.0486	100.3%	0.0242	0.0199	0.0217
x		100.2%	0.0496	0.0463	99.4%	0.0213	0.0192	0.0204
σ		1.4%	0.0015	0.0039	1.1%	0.0031	0.0017	0.0011
%RSD		1.3	3.1022	8.4938	1.1	14.5127	8.9172	5.5793

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	103.5%	-0.0025	98.9%	-0.0268	0.0147	0.0041	0.0037	0.0043
2	14:42:12	107.0%	0.0009	98.4%	-0.0224	-0.0291	0.0025	0.0039	0.0756
3	14:42:49	99.2%	0.0028	96.4%	-0.0212	-0.0005	0.0083	0.0096	0.0604
x		103.2%	0.0004	97.9%	-0.0235	-0.0050	0.0050	0.0057	0.0467
σ		3.9%	0.0027	1.3%	0.0030	0.0222	0.0030	0.0033	0.0376
%RSD		3.8	656.2734	1.4	12.6680	446.8010	59.7810	58.3608	80.3875

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	0.1760	0.0226	97.1%	-0.0807	1.9501	0.2267	-0.0669	98.0%
2	14:42:12	0.1290	0.0759	99.3%	0.0119	1.8419	0.0796	0.0498	98.5%
3	14:42:49	0.0715	0.0588	97.9%	-0.0292	1.6712	-0.0548	-0.1614	97.8%
x		0.1255	0.0525	98.1%	-0.0327	1.8211	0.0838	-0.0595	98.1%
σ		0.0523	0.0272	1.1%	0.0464	0.1406	0.1408	0.1058	0.4%
%RSD		41.7013	51.8588	1.1	141.9717	7.7217	167.9589	177.8220	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	96.9%	-0.0055	-0.0050	96.3%	0.0075	0.0086	0.0045
2	14:42:12	98.1%	-0.0075	-0.0062	98.6%	0.0090	0.0065	0.0091
3	14:42:49	97.9%	-0.0049	-0.0033	99.1%	0.0065	0.0128	0.0077
x		97.6%	-0.0060	-0.0048	98.0%	0.0076	0.0093	0.0071
σ		0.6%	0.0013	0.0015	1.5%	0.0013	0.0032	0.0024
%RSD		0.7	22.1856	30.6343	1.5	16.7291	34.6926	33.1868

8/4/16

DNR Zn LCW out of control

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	104.6%	2.5384	99.9%	25.5074	25.4862	12.9593	12.7608	34.8915
2	14:45:45	102.0%	2.5837	99.0%	25.0479	24.8492	12.6384	12.5448	35.4127
3	14:46:21	101.3%	2.5224	97.8%	25.7277	25.1693	12.9701	13.0005	35.9762
x		102.6%	2.5482	98.9%	25.4277	25.1682	12.8559	12.7687	35.4268
σ		1.7%	0.0318	1.1%	0.3469	0.3185	0.1885	0.2280	0.5425
%RSD		1.7	1.2472	1.1	1.3641	1.2655	1.4659	1.7854	1.5312

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	38.3469	37.0963	99.2%	50.6793	50.2530	50.1731	50.5431	99.9%
2	14:45:45	37.9095	37.4868	100.1%	49.4681	51.3486	49.0890	49.6194	98.9%
3	14:46:21	39.3934	37.7582	98.1%	50.6486	51.0318	50.9848	50.5353	99.6%
x		38.5499	37.4471	99.1%	50.2653	50.8778	50.0823	50.2326	99.5%
σ		0.7625	0.3327	1.0%	0.6906	0.5638	0.9511	0.5310	0.5%
%RSD		1.9780	0.8886	1.0	1.3739	1.1082	1.8991	1.0571	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	97.4%	50.5366	50.1233	98.0%	49.5263	50.4561	50.1429
2	14:45:45	99.2%	49.7170	49.7333	99.5%	49.9081	51.4302	50.9050
3	14:46:21	99.8%	49.8135	49.5506	99.9%	49.9816	51.2589	50.6962
x		98.8%	50.0224	49.8024	99.1%	49.8053	51.0484	50.5814
σ		1.2%	0.4479	0.2925	1.0%	0.2444	0.5200	0.3938
%RSD		1.2	0.8954	0.5874	1.0	0.4908	1.0187	0.7786

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	106.7%	2.4560	97.8%	25.8863	25.2367	12.6671	12.9210	25.4538
2	14:50:52	97.8%	2.5326	96.8%	25.4817	25.1756	12.6830	12.7855	25.5581
3	14:51:29	98.6%	2.4679	97.3%	25.4445	25.1684	12.6283	12.4873	25.2749
x		101.0%	2.4855	97.3%	25.6042	25.1936	12.6594	12.7313	25.4273
σ		4.9%	0.0412	0.5%	0.2451	0.0375	0.0282	0.2219	0.1410
%RSD		4.8	1.6584	0.5	0.9571	0.1489	0.2224	1.7428	0.5544

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	30.0122	27.7241	98.0%	51.3104	52.0132	50.2698	49.5731	98.4%
2	14:50:52	30.0582	27.9650	97.4%	51.1673	53.1600	50.0804	50.8574	99.2%
3	14:51:29	29.3583	27.8699	98.0%	50.8767	52.7403	51.4413	50.2583	97.9%
x		29.8096	27.8530	97.8%	51.1181	52.6378	50.5972	50.2296	98.5%
σ		0.3915	0.1214	0.3%	0.2210	0.5803	0.7371	0.6426	0.7%
%RSD		1.3134	0.4357	0.3	0.4323	1.1024	1.4569	1.2793	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	96.6%	51.0810	50.5821	97.9%	50.2172	51.8771	51.3157
2	14:50:52	98.1%	50.9856	50.8394	99.2%	50.7402	52.1238	51.8103
3	14:51:29	98.0%	50.8107	50.7637	99.9%	50.8752	52.6546	51.8684
x		97.6%	50.9591	50.7284	99.0%	50.6109	52.2185	51.6648
σ		0.8%	0.1371	0.1322	1.0%	0.3475	0.3973	0.3037
%RSD		0.9	0.2690	0.2606	1.1	0.6866	0.7609	0.5879

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	106.3%	0.0026	97.4%	0.1534	0.1293	0.1154	0.1164	1.2748
2	14:56:17	101.2%	0.0026	98.0%	0.1289	0.1411	0.1238	0.1147	1.2274
3	14:56:53	102.2%	0.0025	96.1%	0.1347	0.1180	0.1106	0.1273	1.2581
x		103.2%	0.0026	97.2%	0.1390	0.1295	0.1166	0.1195	1.2534
σ		2.7%	0.0000	1.0%	0.0128	0.0115	0.0067	0.0069	0.0241
%RSD		2.6	1.4056	1.0	9.2171	8.9164	5.7353	5.7563	1.9188

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	1.1626	1.1121	97.1%	0.0692	1.8763	-0.2635	0.2386	96.6%
2	14:56:17	1.2155	1.2356	96.6%	0.1086	1.9315	0.2903	0.3660	98.1%
3	14:56:53	1.3858	1.1323	97.1%	0.0364	1.8666	-0.4020	0.2357	98.8%
x		1.2546	1.1600	96.9%	0.0714	1.8915	-0.1251	0.2801	97.9%
σ		0.1166	0.0663	0.3%	0.0361	0.0350	0.3663	0.0744	1.1%
%RSD		9.2972	5.7112	0.3	50.6259	1.8512	292.8757	26.5530	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	95.2%	0.0097	0.0102	96.2%	0.0296	0.0314	0.0336
2	14:56:17	97.6%	0.0120	0.0131	98.5%	0.0372	0.0375	0.0365
3	14:56:53	98.4%	0.0160	0.0132	98.0%	0.0453	0.0385	0.0394
x		97.1%	0.0126	0.0122	97.5%	0.0374	0.0358	0.0365
σ		1.7%	0.0032	0.0017	1.2%	0.0079	0.0038	0.0029
%RSD		1.7	25.4551	13.7139	1.2	21.0107	10.7407	7.9786

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	102.6%	0.0017	98.5%	0.0018	0.0182	0.0240	0.0290	0.2348
2	14:59:53	94.6%	0.0019	95.9%	0.0184	0.0481	0.0307	0.0135	0.2514
3	15:00:29	98.5%	-0.0018	96.1%	0.0087	0.0153	0.0208	0.0253	0.2359
x		98.6%	0.0006	96.8%	0.0096	0.0272	0.0251	0.0226	0.2407
σ		4.0%	0.0021	1.5%	0.0084	0.0182	0.0051	0.0081	0.0083
%RSD		4.0	368.5036	1.5	86.9956	66.7941	20.1807	35.7776	3.8612

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	0.2645	0.2526	96.2%	0.0163	0.5377	0.1869	0.1394	98.0%
2	14:59:53	0.2482	0.2585	98.0%	0.0014	0.3789	0.1310	-0.0479	98.6%
3	15:00:29	0.2777	0.2596	96.4%	-0.0290	0.3223	0.0823	-0.2240	98.5%
x		0.2635	0.2569	96.9%	-0.0038	0.4130	0.1334	-0.0442	98.4%
σ		0.0148	0.0038	1.0%	0.0231	0.1117	0.0524	0.1817	0.3%
%RSD		5.6054	1.4659	1.0	613.2491	27.0406	39.2474	411.4784	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	97.5%	-0.0109	-0.0149	97.3%	0.0062	0.0058	0.0063
2	14:59:53	98.2%	-0.0117	-0.0140	98.7%	0.0087	0.0082	0.0065
3	15:00:29	98.3%	-0.0068	-0.0111	100.0%	0.0088	0.0076	0.0074
x		98.0%	-0.0098	-0.0133	98.7%	0.0079	0.0072	0.0067
σ		0.5%	0.0027	0.0020	1.3%	0.0015	0.0012	0.0006
%RSD		0.5	27.2225	14.9429	1.3	18.7627	17.2984	8.6277

K1608011-007A 8/3/2016 3:02:51 PM

8/4/16

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	104.0%	21.0841	97.0%	21.8657	21.6656	21.8976	22.7613	23.1381
2	15:03:27	99.5%	21.2583	97.4%	21.5899	21.1094	21.3516	21.3418	22.4052
3	15:04:04	97.3%	20.7809	94.0%	21.8576	22.0342	21.8697	22.3049	23.0866
x		100.3%	21.0411	96.1%	21.7711	21.6031	21.7063	22.1360	22.8767
σ		3.4%	0.2416	1.9%	0.1570	0.4656	0.3075	0.7247	0.4091
%RSD		3.4	1.1482	1.9	0.7210	2.1552	1.4167	3.2736	1.7881

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	22.6908	22.8828	96.2%	21.5424	23.2691	21.4486	20.2022	97.8%
2	15:03:27	22.0119	22.3463	97.6%	21.4800	23.4551	20.7177	20.9757	97.2%
3	15:04:04	22.6792	22.5721	95.7%	21.8317	22.1326	20.1640	21.1168	97.7%
x		22.4607	22.6004	96.5%	21.6181	22.9523	20.7768	20.7649	97.6%
σ		0.3887	0.2694	1.0%	0.1877	0.7159	0.6444	0.4924	0.3%
%RSD		1.7305	1.1919	1.0	0.8681	3.1192	3.1013	2.3711	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	98.1%	21.5526	21.4968	97.3%	21.5098	21.2928	21.4356
2	15:03:27	98.7%	21.7927	21.5765	99.6%	21.4689	21.4438	21.5211
3	15:04:04	98.4%	21.7961	21.6420	99.5%	21.5373	21.3620	21.5330
x		98.4%	21.7138	21.5718	98.8%	21.5053	21.3662	21.4966
σ		0.3%	0.1396	0.0727	1.3%	0.0345	0.0756	0.0531
%RSD		0.3	0.6430	0.3371	1.3	0.1602	0.3538	0.2471

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8/4/16

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	100.9%	0.0043	95.4%	0.1810	0.1602	0.1479	0.1467	1.2657
2	15:07:28	98.3%	0.0029	96.4%	0.1754	0.1575	0.1425	0.1495	1.3052
3	15:08:04	97.3%	0.0142	96.8%	0.1714	0.1879	0.1461	0.1647	1.2784
x		98.8%	0.0071	96.2%	0.1759	0.1686	0.1455	0.1536	1.2831
σ		1.8%	0.0062	0.7%	0.0048	0.0168	0.0027	0.0097	0.0201
%RSD		1.9	86.4837	0.8	2.7413	9.9881	1.8610	6.3049	1.5703

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	1.2254	1.2172	95.2%	0.0589	1.9261	-0.0769	0.3208	96.5%
2	15:07:28	1.3036	1.1996	96.8%	-0.0027	2.0088	-0.1439	0.1591	98.2%
3	15:08:04	1.2007	1.0761	97.1%	0.0358	1.8064	-0.1342	0.0027	97.5%
x		1.2432	1.1643	96.3%	0.0307	1.9138	-0.1183	0.1609	97.4%
σ		0.0537	0.0769	1.0%	0.0311	0.1017	0.0362	0.1590	0.9%
%RSD		4.3214	6.6053	1.0	101.3181	5.3167	30.6327	98.8747	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	95.8%	-0.0010	0.0001	97.1%	0.0334	0.0345	0.0319
2	15:07:28	97.4%	0.0019	0.0066	98.7%	0.0319	0.0320	0.0347
3	15:08:04	97.5%	0.0160	0.0092	99.4%	0.0482	0.0531	0.0485
x		96.9%	0.0056	0.0053	98.4%	0.0378	0.0399	0.0384
σ		1.0%	0.0091	0.0047	1.2%	0.0090	0.0115	0.0089
%RSD		1.0	161.0468	88.4407	1.2	23.7618	28.9550	23.1407

K1608209-015 8/3/2016 3:10:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	99.9%	0.0002	97.7%	0.0513	0.0455	0.0709	0.0796	0.7691
2	15:11:03	97.9%	0.0068	95.0%	0.0661	0.0528	0.0937	0.0755	0.7749
3	15:11:38	97.8%	0.0025	96.3%	0.0495	0.0414	0.0793	0.0650	0.7587
x		98.5%	0.0032	96.3%	0.0556	0.0466	0.0813	0.0734	0.7642
σ		1.2%	0.0034	1.3%	0.0091	0.0058	0.0116	0.0075	0.0092
%RSD		1.2	106.3219	1.4	16.3658	12.4257	14.2082	10.2612	1.2068

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	0.9145	0.7674	96.0%	0.0143	2.0034	0.0450	0.2189	96.7%
2	15:11:03	0.7813	0.7692	96.1%	0.0345	1.8136	-0.0358	0.2003	96.6%
3	15:11:38	0.6904	0.7818	97.4%	-0.0508	1.8843	-0.1655	-0.1250	96.6%
x		0.7954	0.7728	96.5%	-0.0007	1.9004	-0.0521	0.0981	96.6%
σ		0.1127	0.0079	0.8%	0.0446	0.0959	0.1062	0.1934	0.1%
%RSD		14.1651	1.0160	0.8	6322.1316	5.0455	203.8613	197.1959	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	96.3%	-0.0062	-0.0076	96.6%	0.0169	0.0166	0.0159
2	15:11:03	96.8%	-0.0022	0.0005	98.7%	0.0168	0.0231	0.0192
3	15:11:38	96.8%	-0.0048	-0.0028	98.7%	0.0229	0.0185	0.0185
x		96.6%	-0.0044	-0.0033	98.0%	0.0189	0.0194	0.0179
σ		0.3%	0.0020	0.0041	1.2%	0.0035	0.0033	0.0018
%RSD		0.3	45.6438	124.5802	1.3	18.5656	17.1083	9.8436

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	101.7%	0.0034	94.3%	0.1444	0.1385	0.0779	0.0659	0.4126
2	15:14:40	98.7%	0.0003	95.3%	0.1518	0.1189	0.0723	0.0609	0.4439
3	15:15:16	98.2%	0.0008	93.3%	0.1439	0.1163	0.0699	0.0778	0.4227
x		99.6%	0.0015	94.3%	0.1467	0.1246	0.0734	0.0682	0.4264
σ		1.9%	0.0017	1.0%	0.0044	0.0121	0.0041	0.0087	0.0160
%RSD		1.9	113.9226	1.1	3.0200	9.7491	5.5900	12.7489	3.7439

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	0.5037	0.4309	94.9%	0.0078	1.7269	-0.0468	-0.1872	97.1%
2	15:14:40	0.4221	0.4553	96.0%	0.0245	1.9123	-0.1676	0.0430	96.0%
3	15:15:16	0.4868	0.4175	94.7%	0.0093	1.8659	0.2679	0.0534	97.0%
x		0.4709	0.4346	95.2%	0.0139	1.8350	0.0179	-0.0303	96.7%
σ		0.0431	0.0192	0.7%	0.0092	0.0964	0.2248	0.1360	0.6%
%RSD		9.1475	4.4117	0.8	66.7038	5.2554	1259.1868	449.6678	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	96.0%	-0.0072	-0.0089	96.6%	0.0194	0.0205	0.0194
2	15:14:40	96.8%	-0.0055	-0.0064	98.2%	0.0203	0.0217	0.0190
3	15:15:16	96.4%	-0.0068	-0.0070	98.9%	0.0172	0.0220	0.0182
x		96.4%	-0.0065	-0.0074	97.9%	0.0190	0.0214	0.0189
σ		0.4%	0.0009	0.0013	1.2%	0.0016	0.0008	0.0006
%RSD		0.4	13.2764	17.7479	1.2	8.3234	3.5657	3.3810

CCV4 8/3/2016 3:17:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	102.6%	24.9203	98.1%	25.6534	25.1509	25.3747	25.8305	25.9470
2	15:18:15	98.0%	24.6290	97.4%	25.4612	25.3587	25.6593	25.7221	25.6369
3	15:18:51	94.4%	25.4136	98.0%	25.1892	25.1400	24.7310	24.8971	25.0410
x		98.3%	24.9876	97.9%	25.4346	25.2165	25.2550	25.4832	25.5416
σ		4.1%	0.3966	0.4%	0.2333	0.1233	0.4756	0.5105	0.4605
%RSD		4.2	1.5873	0.4	0.9171	0.4889	1.8831	2.0033	1.8028

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	25.6209	25.0331	97.6%	25.4513	24.5401	24.6699	24.5473	98.3%
2	15:18:15	25.5059	25.2442	96.9%	24.6204	26.1055	25.0593	24.3395	99.6%
3	15:18:51	25.5154	25.1255	98.8%	24.9823	24.9418	24.9622	25.0573	99.6%
x		25.5474	25.1343	97.7%	25.0180	25.1958	24.8972	24.6480	99.2%
σ		0.0638	0.1058	1.0%	0.4166	0.8130	0.2027	0.3693	0.7%
%RSD		0.2498	0.4210	1.0	1.6651	3.2269	0.8141	1.4984	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	98.7%	24.6793	24.5092	99.0%	25.4580	25.1410	25.2942
2	15:18:15	99.2%	25.2342	24.9597	100.1%	25.3748	25.2297	25.3759
3	15:18:51	100.4%	25.0373	24.9185	101.0%	25.3920	25.4493	25.4656
x		99.4%	24.9836	24.7958	100.0%	25.4083	25.2733	25.3785
σ		0.9%	0.2813	0.2491	1.0%	0.0439	0.1587	0.0857
%RSD		0.9	1.1260	1.0046	1.0	0.1729	0.6280	0.3378

CCB4 8/3/2016 3:27:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	108.2%	0.0071	99.9%	0.0079	0.0410	0.0139	0.0080	-0.0094
2	15:27:36	102.9%	0.0159	100.0%	0.0015	0.0350	0.0193	0.0202	0.0293
3	15:28:13	99.3%	0.0133	99.5%	0.0167	0.0286	0.0199	0.0192	0.0118
x		103.5%	0.0121	99.8%	0.0087	0.0348	0.0177	0.0158	0.0106
σ		4.5%	0.0045	0.3%	0.0076	0.0062	0.0033	0.0068	0.0194
%RSD		4.3	37.5054	0.3	87.4039	17.7926	18.8768	42.8159	183.3938

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	0.0343	0.0190	97.9%	0.0184	0.1422	-0.0608	0.1570	99.4%
2	15:27:36	0.0758	0.0054	98.4%	-0.0513	0.1776	0.2733	-0.0750	101.2%
3	15:28:13	0.0264	0.0017	99.5%	-0.0090	0.0563	-0.2014	-0.0748	101.4%
x		0.0455	0.0087	98.6%	-0.0140	0.1254	0.0037	0.0024	100.6%
σ		0.0266	0.0091	0.9%	0.0351	0.0624	0.2438	0.1338	1.1%
%RSD		58.3615	104.6443	0.9	251.7587	49.7524	6596.4383	5548.1478	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	98.1%	0.0144	0.0143	96.5%	0.0107	0.0059	0.0078
2	15:27:36	99.9%	0.0209	0.0168	98.9%	0.0188	0.0184	0.0176
3	15:28:13	100.3%	0.0153	0.0189	99.4%	0.0120	0.0186	0.0143
x		99.4%	0.0169	0.0167	98.3%	0.0138	0.0143	0.0132
σ		1.2%	0.0035	0.0023	1.6%	0.0044	0.0073	0.0049
%RSD		1.2	20.8043	13.7617	1.6	31.5971	50.7832	37.3659

CCB4 8/3/2016 3:30:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	108.7%	0.0062	101.8%	-0.0018	0.0258	0.0109	0.0142	0.0230
2	15:31:19	104.4%	0.0116	100.9%	0.0060	-0.0072	0.0088	0.0117	0.0279
3	15:31:55	106.1%	0.0085	99.1%	0.0018	0.0171	0.0096	0.0093	0.0070
x		106.4%	0.0088	100.6%	0.0020	0.0119	0.0097	0.0118	0.0193
σ		2.1%	0.0027	1.3%	0.0039	0.0171	0.0010	0.0025	0.0109
%RSD		2.0	30.4824	1.3	193.1700	143.8878	10.7334	21.0180	56.5385

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	-0.0341	0.0007	100.4%	0.0466	0.0673	-0.0750	0.2006	100.2%
2	15:31:19	0.0014	0.0083	100.5%	-0.0643	0.1050	-0.1601	-0.1603	100.8%
3	15:31:55	-0.0162	0.0263	100.6%	0.0363	0.1040	0.0262	0.1709	101.2%
x		-0.0163	0.0118	100.5%	0.0062	0.0921	-0.0696	0.0704	100.7%
σ		0.0178	0.0132	0.1%	0.0613	0.0215	0.0932	0.2003	0.5%
%RSD		108.9689	111.8443	0.1	989.8106	23.3586	133.9037	284.5408	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	99.2%	0.0078	0.0030	97.2%	0.0090	0.0074	0.0076
2	15:31:19	99.9%	0.0071	-0.0004	99.3%	0.0100	0.0069	0.0079
3	15:31:55	100.1%	0.0048	0.0063	99.6%	0.0073	0.0109	0.0072
x		99.7%	0.0066	0.0030	98.7%	0.0088	0.0084	0.0076
σ		0.5%	0.0016	0.0033	1.3%	0.0014	0.0022	0.0004
%RSD		0.5	23.7421	111.7805	1.3	15.6539	26.0911	4.6858

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	103.0%	-0.0000	98.5%	-0.0214	0.0028	0.0304	0.0402	1.6206
2	15:34:52	100.4%	0.0014	98.4%	-0.0143	-0.0077	0.0401	0.0297	1.5946
3	15:35:28	98.2%	0.0012	96.4%	-0.0139	-0.0282	0.0363	0.0664	1.5833
x		100.5%	0.0009	97.8%	-0.0166	-0.0110	0.0356	0.0454	1.5995
σ		2.4%	0.0008	1.2%	0.0042	0.0157	0.0049	0.0189	0.0191
%RSD		2.4	89.5441	1.2	25.3399	142.5530	13.7154	41.5484	1.1969

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	1.5201	1.4835	97.6%	0.0298	1.7316	0.0148	0.1282	97.4%
2	15:34:52	1.7741	1.5529	97.7%	0.0474	1.5537	-0.5381	-0.0070	98.5%
3	15:35:28	1.6583	1.5407	97.3%	0.0058	1.8377	0.0001	0.0800	98.6%
x		1.6508	1.5257	97.5%	0.0276	1.7077	-0.1744	0.0670	98.2%
σ		0.1272	0.0370	0.2%	0.0208	0.1435	0.3151	0.0685	0.7%
%RSD		7.7034	2.4270	0.2	75.3796	8.4019	180.6745	102.2155	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	96.7%	0.0006	-0.0010	96.6%	0.0045	0.0041	0.0037
2	15:34:52	97.8%	0.0024	0.0036	98.4%	0.0045	0.0031	0.0039
3	15:35:28	98.5%	-0.0035	0.0015	99.2%	0.0056	0.0061	0.0048
x		97.7%	-0.0002	0.0013	98.0%	0.0048	0.0045	0.0041
σ		0.9%	0.0030	0.0023	1.3%	0.0006	0.0015	0.0006
%RSD		1.0	1708.4396	172.3995	1.4	12.8052	34.3843	14.4127

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	106.2%	2.4815	99.0%	24.8782	24.9328	12.3757	12.6020	25.2201
2	15:38:24	102.7%	2.4700	98.0%	25.1597	24.6731	12.4229	12.5285	24.9248
3	15:39:01	100.4%	2.5132	95.8%	24.9560	25.0916	12.3734	12.5413	24.8817
x		103.1%	2.4883	97.6%	24.9979	24.8992	12.3907	12.5573	25.0089
σ		2.9%	0.0224	1.7%	0.1454	0.2113	0.0279	0.0393	0.1842
%RSD		2.8	0.8986	1.7	0.5816	0.8485	0.2255	0.3127	0.7366

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	28.5358	27.7279	96.9%	50.0927	51.7695	49.7783	49.6564	98.6%
2	15:38:24	28.6691	27.0726	99.0%	50.2693	50.7710	49.6180	49.7230	99.4%
3	15:39:01	28.4961	27.1119	98.3%	49.8056	49.9465	48.5312	48.2904	99.4%
x		28.5670	27.3042	98.0%	50.0559	50.8290	49.3092	49.2233	99.1%
σ		0.0906	0.3675	1.1%	0.2341	0.9129	0.6785	0.8086	0.5%
%RSD		0.3172	1.3459	1.1	0.4676	1.7960	1.3760	1.6427	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	97.8%	50.6951	50.3160	97.8%	49.3112	50.7057	49.9530
2	15:38:24	99.6%	49.9623	49.9085	99.5%	49.1451	51.1618	50.2489
3	15:39:01	99.0%	50.5094	50.1641	99.8%	49.1562	50.7982	50.0637
x		98.8%	50.3889	50.1295	99.0%	49.2042	50.8886	50.0885
σ		0.9%	0.3810	0.2059	1.1%	0.0929	0.2411	0.1495
%RSD		0.9	0.7560	0.4108	1.1	0.1888	0.4738	0.2985

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	103.7%	2.5332	99.5%	25.0041	24.8065	12.4984	12.5503	24.7139
2	15:44:04	105.5%	2.4331	98.9%	25.3712	24.8044	12.5344	12.5670	24.9566
3	15:44:41	99.0%	2.5841	98.2%	24.2516	25.0867	12.6905	12.8397	24.8597
x		102.7%	2.5168	98.9%	24.8756	24.8992	12.5744	12.6523	24.8434
σ		3.4%	0.0769	0.7%	0.5708	0.1624	0.1021	0.1625	0.1221
%RSD		3.3	3.0538	0.7	2.2944	0.6523	0.8122	1.2842	0.4917

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	28.9598	27.6713	97.8%	49.6937	50.7125	47.7390	49.6992	98.0%
2	15:44:04	29.4333	27.8009	97.6%	50.2713	50.4056	49.0552	49.6964	98.3%
3	15:44:41	28.5876	27.1096	97.8%	49.6636	49.6851	49.1311	49.2629	99.6%
x		28.9936	27.5273	97.8%	49.8762	50.2677	48.6418	49.5528	98.6%
σ		0.4239	0.3675	0.1%	0.3425	0.5274	0.7828	0.2511	0.9%
%RSD		1.4621	1.3350	0.1	0.6867	1.0491	1.6092	0.5067	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	97.2%	50.3360	49.8830	95.7%	48.6040	50.0634	49.4156
2	15:44:04	97.8%	50.5638	49.9847	98.1%	48.3624	49.6911	49.2465
3	15:44:41	99.0%	50.1785	49.3890	98.5%	48.6843	50.3444	49.6146
x		98.0%	50.3594	49.7522	97.4%	48.5502	50.0330	49.4256
σ		0.9%	0.1937	0.3187	1.5%	0.1675	0.3277	0.1843
%RSD		0.9	0.3847	0.6405	1.6	0.3451	0.6549	0.3728

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	100.2%	0.0031	96.4%	0.0898	0.0723	0.1194	0.1227	0.5078
2	15:50:20	101.3%	0.0001	95.7%	0.0546	0.0812	0.1367	0.1254	0.4501
3	15:50:57	102.7%	-0.0008	95.7%	0.0608	0.0575	0.1281	0.1369	0.4489
x		101.4%	0.0008	95.9%	0.0684	0.0704	0.1281	0.1283	0.4689
σ		1.3%	0.0021	0.4%	0.0188	0.0120	0.0087	0.0076	0.0337
%RSD		1.2	253.6509	0.4	27.4689	17.0282	6.7621	5.8887	7.1884

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	0.5364	0.4670	96.5%	0.0726	1.6492	-0.4006	0.1902	96.2%
2	15:50:20	0.4899	0.4238	97.2%	-0.0654	1.8829	-0.1967	-0.1544	97.6%
3	15:50:57	0.4212	0.4675	97.5%	-0.0231	1.7430	-0.2282	-0.1248	98.4%
x		0.4825	0.4528	97.0%	-0.0053	1.7584	-0.2752	-0.0297	97.4%
σ		0.0579	0.0251	0.5%	0.0707	0.1176	0.1098	0.1910	1.1%
%RSD		12.0035	5.5394	0.5	1336.5650	6.6874	39.8850	643.5585	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	95.9%	0.0172	0.0078	94.6%	0.0168	0.0171	0.0164
2	15:50:20	96.6%	0.0215	0.0167	97.2%	0.0247	0.0282	0.0257
3	15:50:57	96.5%	0.0169	0.0125	97.5%	0.0274	0.0211	0.0229
x		96.3%	0.0185	0.0123	96.4%	0.0230	0.0221	0.0217
σ		0.4%	0.0025	0.0045	1.6%	0.0055	0.0056	0.0048
%RSD		0.4	13.6978	36.3160	1.6	23.8465	25.4513	21.9716

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	100.6%	0.0010	98.5%	-0.0184	-0.0095	0.0236	0.0311	0.0865
2	15:53:58	101.0%	-0.0011	98.1%	-0.0127	0.0074	0.0214	0.0122	0.0793
3	15:54:35	101.7%	-0.0004	99.1%	-0.0108	0.0144	0.0249	0.0091	0.0682
x		101.1%	-0.0002	98.6%	-0.0140	0.0041	0.0233	0.0175	0.0780
σ		0.6%	0.0011	0.5%	0.0040	0.0123	0.0017	0.0119	0.0092
%RSD		0.6	621.5486	0.5	28.4476	298.2166	7.5038	68.0863	11.8513

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	0.0574	0.0932	94.6%	0.0491	0.3340	-0.0369	0.1420	97.4%
2	15:53:58	0.0230	0.0632	97.4%	0.1128	0.3019	0.3517	0.3516	99.8%
3	15:54:35	0.0815	0.0817	98.8%	-0.0179	0.3469	-0.0938	-0.1719	99.4%
x		0.0540	0.0794	96.9%	0.0480	0.3276	0.0736	0.1072	98.8%
σ		0.0294	0.0151	2.1%	0.0654	0.0232	0.2424	0.2635	1.3%
%RSD		54.4248	19.0549	2.2	136.2832	7.0768	329.1971	245.7661	1.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	96.7%	-0.0080	-0.0089	96.1%	0.0036	0.0062	0.0042
2	15:53:58	98.7%	-0.0060	-0.0063	98.5%	0.0070	0.0072	0.0060
3	15:54:35	99.0%	-0.0026	-0.0082	98.6%	0.0058	0.0085	0.0068
x		98.1%	-0.0056	-0.0078	97.8%	0.0055	0.0073	0.0057
σ		1.3%	0.0027	0.0014	1.4%	0.0017	0.0011	0.0013
%RSD		1.3	49.4488	17.6897	1.5	31.6713	15.6197	23.6181

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	107.3%	20.8468	97.7%	21.7826	22.2098	22.1827	22.2289	21.7910
2	15:57:31	102.7%	21.8622	97.3%	21.7803	21.7440	21.8801	22.1210	22.3106
3	15:58:08	104.6%	21.4130	97.3%	22.0259	22.0099	22.4107	21.9345	22.3823
x		104.9%	21.3740	97.5%	21.8629	21.9879	22.1578	22.0948	22.1680
σ		2.3%	0.5088	0.2%	0.1412	0.2336	0.2661	0.1489	0.3275
%RSD		2.2	2.3806	0.2	0.6457	1.0626	1.2011	0.6740	1.4772

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	21.4202	21.8789	98.1%	21.6554	23.0374	21.1609	21.5495	97.7%
2	15:57:31	22.4016	22.0767	98.4%	22.0880	22.2971	21.3282	21.6736	97.2%
3	15:58:08	22.3866	21.9625	98.2%	21.9778	22.2335	21.4875	21.6853	98.3%
x		22.0695	21.9727	98.2%	21.9070	22.5227	21.3255	21.6361	97.8%
σ		0.5623	0.0993	0.1%	0.2248	0.4469	0.1633	0.0752	0.6%
%RSD		2.5481	0.4519	0.1	1.0263	1.9843	0.7659	0.3478	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	97.2%	21.8650	21.6409	96.4%	21.6222	21.5079	21.6232
2	15:57:31	98.6%	22.0165	21.6764	98.2%	21.7017	21.5448	21.6748
3	15:58:08	99.3%	21.7283	21.7217	99.1%	21.6012	21.6257	21.6991
x		98.4%	21.8700	21.6797	97.9%	21.6417	21.5595	21.6657
σ		1.1%	0.1442	0.0405	1.4%	0.0530	0.0602	0.0388
%RSD		1.1	0.6592	0.1867	1.4	0.2451	0.2794	0.1791

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	108.5%	-0.0007	99.0%	0.0387	0.0378	0.1323	0.1544	1.0409
2	16:01:28	103.7%	0.0122	95.9%	0.0410	0.0463	0.1470	0.1291	1.0761
3	16:02:04	101.3%	0.0113	98.1%	0.0398	0.0622	0.1485	0.1551	1.0481
x		104.5%	0.0076	97.7%	0.0398	0.0488	0.1426	0.1462	1.0550
σ		3.7%	0.0072	1.6%	0.0012	0.0124	0.0090	0.0148	0.0186
%RSD		3.5	95.1604	1.6	2.9163	25.4485	6.2800	10.1232	1.7604

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	1.1043	0.9774	97.7%	0.0758	1.7817	-0.4598	0.0700	97.7%
2	16:01:28	0.8953	0.9381	95.7%	-0.0495	2.1015	-0.0503	0.0216	97.2%
3	16:02:04	1.0311	0.9898	97.9%	-0.0586	1.9633	0.0138	-0.0574	97.6%
x		1.0103	0.9684	97.1%	-0.0107	1.9488	-0.1655	0.0114	97.5%
σ		0.1061	0.0270	1.2%	0.0751	0.1604	0.2570	0.0643	0.2%
%RSD		10.4978	2.7850	1.2	698.8406	8.2292	155.3050	564.9467	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	96.3%	0.0045	0.0040	95.9%	0.0309	0.0347	0.0290
2	16:01:28	96.9%	0.0079	0.0041	97.5%	0.0348	0.0361	0.0358
3	16:02:04	98.2%	0.0066	0.0142	98.4%	0.0363	0.0383	0.0387
x		97.1%	0.0063	0.0074	97.3%	0.0340	0.0364	0.0345
σ		1.0%	0.0017	0.0059	1.2%	0.0028	0.0018	0.0050
%RSD		1.0	26.8441	78.5456	1.3	8.2579	5.0458	14.5020

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	105.8%	24.7363	98.2%	25.7545	25.5584	25.1315	25.2519	25.7840
2	16:05:10	102.3%	24.6868	99.0%	25.4905	25.1486	24.7635	25.2669	25.5505
3	16:05:46	100.3%	24.6146	99.6%	25.2665	24.8390	24.8028	25.0468	25.1354
x		102.8%	24.6792	98.9%	25.5038	25.1820	24.8993	25.1885	25.4900
σ		2.8%	0.0612	0.7%	0.2443	0.3609	0.2021	0.1230	0.3285
%RSD		2.7	0.2479	0.7	0.9578	1.4330	0.8115	0.4883	1.2888

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	26.1223	25.3570	97.8%	25.1775	25.0620	25.8392	24.6146	98.6%
2	16:05:10	25.5515	25.3126	99.9%	25.3752	24.5947	24.9429	25.3141	99.0%
3	16:05:46	24.7302	24.7583	99.7%	24.9276	24.8762	25.1789	25.6995	99.5%
x		25.4680	25.1427	99.1%	25.1601	24.8443	25.3204	25.2094	99.0%
σ		0.6998	0.3336	1.2%	0.2243	0.2353	0.4646	0.5500	0.4%
%RSD		2.7478	1.3267	1.2	0.8915	0.9471	1.8347	2.1816	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	97.5%	24.8641	24.8259	98.2%	25.0333	24.8530	25.0661
2	16:05:10	99.8%	24.8740	24.6630	100.0%	25.1072	25.0653	25.1607
3	16:05:46	100.0%	24.8833	24.7352	100.2%	25.1722	25.2481	25.1943
x		99.1%	24.8738	24.7414	99.5%	25.1043	25.0555	25.1404
σ		1.4%	0.0096	0.0816	1.1%	0.0695	0.1977	0.0665
%RSD		1.4	0.0386	0.3300	1.1	0.2768	0.7892	0.2646

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	110.7%	0.0026	101.7%	-0.0038	0.0442	0.0095	0.0100	0.0267
2	16:14:10	105.0%	0.0031	101.3%	0.0035	0.0326	0.0055	0.0025	0.0219
3	16:14:47	102.8%	0.0024	101.5%	0.0003	0.0239	0.0168	0.0140	0.0041
x		106.1%	0.0027	101.5%	-0.0000	0.0335	0.0106	0.0088	0.0176
σ		4.1%	0.0003	0.2%	0.0037	0.0102	0.0057	0.0058	0.0119
%RSD		3.8	12.0980	0.2	26642.8290	30.3808	54.0039	65.7423	67.6377

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	-0.0158	0.0219	99.6%	-0.0428	0.1741	-0.1056	-0.0371	99.3%
2	16:14:10	0.0390	0.0192	98.7%	0.0639	-0.0051	0.3906	0.1930	100.1%
3	16:14:47	-0.0229	0.0164	101.3%	0.0114	0.1907	-0.1284	0.1882	101.5%
x		0.0001	0.0192	99.9%	0.0108	0.1199	0.0522	0.1147	100.3%
σ		0.0339	0.0028	1.3%	0.0533	0.1086	0.2933	0.1315	1.1%
%RSD		28273.6860	14.4764	1.3	492.8990	90.5581	561.7553	114.6503	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	98.7%	0.0088	0.0135	95.3%	0.0078	0.0097	0.0061
2	16:14:10	99.5%	0.0115	0.0113	97.6%	0.0055	0.0058	0.0055
3	16:14:47	99.9%	0.0133	0.0128	97.7%	0.0071	0.0094	0.0069
x		99.3%	0.0112	0.0125	96.9%	0.0068	0.0083	0.0062
σ		0.6%	0.0023	0.0011	1.3%	0.0012	0.0022	0.0007
%RSD		0.6	20.4867	9.1484	1.4	17.5686	26.3555	11.5269

LLCCVW2 8/3/2016 4:17:12 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	111.8%	0.0229	102.0%	0.1743	0.1905	0.1063	0.1049	0.4778
2	16:17:49	104.0%	0.0222	100.0%	0.1824	0.2020	0.1002	0.0967	0.4777
3	16:18:26	106.4%	0.0231	101.5%	0.1656	0.1986	0.1063	0.1163	0.4734
x		107.4%	0.0227	101.1%	0.1741	0.1970	0.1043	0.1060	0.4763
σ		4.0%	0.0005	1.0%	0.0084	0.0059	0.0035	0.0098	0.0025
%RSD		3.7	2.1680	1.0	4.8449	3.0015	3.3565	9.2836	0.5279

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	0.4323	0.4966	100.5%	0.4621	1.1062	0.9738	0.8781	100.4%
2	16:17:49	0.4907	0.4686	101.0%	0.5552	1.0625	0.7480	1.1965	100.3%
3	16:18:26	0.3776	0.4669	102.4%	0.4937	1.0171	1.0332	0.9922	101.9%
x		0.4335	0.4774	101.3%	0.5037	1.0619	0.9183	1.0223	100.9%
σ		0.0565	0.0167	1.0%	0.0473	0.0446	0.1505	0.1614	0.9%
%RSD		13.0374	3.4921	1.0	9.3968	4.1963	16.3868	15.7840	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	99.4%	0.0477	0.0534	96.8%	0.0223	0.0267	0.0221
2	16:17:49	100.9%	0.0599	0.0576	99.1%	0.0259	0.0250	0.0260
3	16:18:26	100.5%	0.0517	0.0613	99.4%	0.0209	0.0259	0.0229
x		100.3%	0.0531	0.0574	98.4%	0.0231	0.0259	0.0237
σ		0.8%	0.0062	0.0039	1.4%	0.0026	0.0009	0.0020
%RSD		0.8	11.6343	6.8667	1.4	11.1832	3.3896	8.5979

Service Request # K1608210 (Redigest Zn)_____
Calibration _____080516AMS03_____
QC in calibration__080516AMS03_____
QC Service Request # K1608011_____
STARLIMS run # 508566_____
Cal Std: MS20-75F ICSA Std: MS20-68H
ICV Std: MS20-75G ICSAB Std: MS20-68I
LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD 5.0 limit?	X		
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb.

Primary Review by _____ Date 8/5/16
Secondary Review by _____ Date 8/5/16

R:\icp\misc\data review forms\6020 DoD Review Checklist

Data Review Form

Service Request #:	**K1608210**
Instrument ID#:	**K-ICP-MS-03**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080516AMS03.csv**
RUNNO:	**508566**

There are no issues to report.

Primary Approver: 8/5/16

Secondary Approver: 8/5/16

Sample List

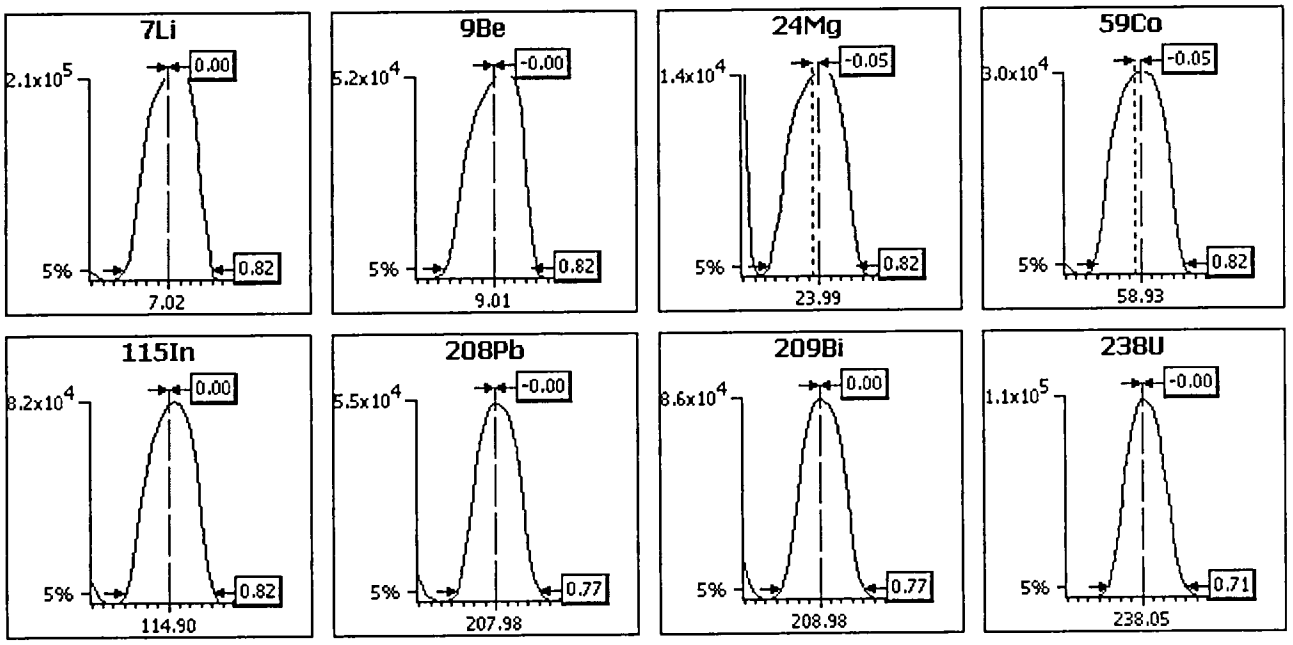
No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal. Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	CCB1	Unknown	1.000	0	1	1	145
7	LLICVW	Unknown	1.000	0	1	4	145
8	LRSTD	Unknown	1.000	1	1	1	145
9	ICSA	Unknown	1.000	0	1	5	145
10	ICSAB	Unknown	1.000	0	1	6	145
11	KQ1609201-01	Unknown	1.000	1	1	2	145
12	KQ1609201-02	Unknown	1.000	1	1	3	145
13	KQ1609201-03	Unknown	1.000	1	1	4	145
14	K1608011-007	Unknown	1.000	1	1	5	145
15	K1608011-007L	Unknown	1.000	1	1	6	145
16	K1608011-007A	Unknown	1.000	1	1	7	145
17	CCV2	Unknown	1.000	0	1	2	145
18	CCB2	Unknown	1.000	0	1	1	145
19	K1608207-015	Unknown	1.000	1	1	8	145
20	K1608209-015	Unknown	1.000	1	1	9	145
21	K1608210-015	Unknown	1.000	1	1	10	145
22	K1608325-014	Unknown	1.000	1	1	11	145
23	K1608344-013	Unknown	1.000	1	1	12	145
24	CCV3	Unknown	1.000	0	1	2	145
25	CCB3	Unknown	1.000	0	1	1	145
26	LLCCVW	Unknown	1.000	0	1	4	145

Performance Report

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.82	0.00
9Be	0.90	0.60	0.10	0.82	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.82	-0.05
115In	0.90	0.60	0.10	0.82	0.00
208Pb	0.90	0.60	0.10	0.77	-0.00
209Bi	0.90	0.60	0.10	0.77	0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	4.7
Focus	23.3
D1	-36.1
Pole Bias	0.3
Hexapole Bias	0.5
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-18.8
Lens 3	-200.0
Forward power	1357
Horizontal	150
Vertical	376
D2	-155
DA	-32.2
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	5:30:15 AM	0.250	219395.58	53374.477	14441.211	31635.198	85381.324	92278.225	1774.173	56833.348
2	5:31:28 AM	0.000	216799.65	52320.376	14251.662	31323.371	86029.139	93384.435	1717.412	57698.774
3	5:32:41 AM	0.000	212527.02	51402.663	14162.774	30968.157	85969.579	93441.517	1725.164	58051.257
4	5:33:53 AM	0.000	213919.62	51531.137	14088.158	31135.226	85938.285	93292.751	1749.168	58103.338
5	5:35:06 AM	0.000	216540.33	51523.343	13862.561	30871.830	85756.582	93084.886	1729.665	58561.766
x		0.050	215836.44	52030.400	14161.273	31186.756	85814.982	93096.363	1739.116	57849.697
σ		0.11	2679.42	835.32	212.79	303.88	262.89	477.01	22.83	645.71
%RSD		223.607	1.241	1.605	1.503	0.974	0.306	0.512	1.313	1.116

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	5:30:15 AM	88868.506	0.000	111865.05
2	5:31:28 AM	89567.314	0.000	113541.39
3	5:32:41 AM	90686.578	0.000	114116.27
4	5:33:53 AM	90799.699	0.000	114493.72
5	5:35:06 AM	90896.408	0.000	115034.49
x		90163.701	0.000	113810.18
σ		901.11	0.00	1216.10
%RSD		0.999	0.000	1.069

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	5:30:15 AM	0.019
2	5:31:28 AM	0.018
3	5:32:41 AM	0.018
4	5:33:53 AM	0.019
5	5:35:06 AM	0.019
x		0.0187
σ		0.00
%RSD		1.7832

Result : The performance report passed.

Dilution Corrected Concentrations

Cal. Blk 8/5/2016 5:39:58 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:39:58	-0.0118	0.0254	-0.0079	101.3%
2	05:40:09	0.0042	-0.0069	0.0063	100.9%
3	05:40:20	0.0075	-0.0185	0.0016	97.8%
x		-0.0000	-0.0000	0.0000	100.0%
σ		0.0103	0.0227	0.0073	1.9%
%RSD		0.0000	0.0000	0.0000	1.9

Cal. Stn 8/5/2016 5:42:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:42:12	25.0514	25.1194	24.6140	101.9%
2	05:42:22	25.2973	24.9918	25.3554	101.4%
3	05:42:33	24.6514	24.8888	25.0306	101.5%
x		25.0000	25.0000	25.0000	101.6%
σ		0.3260	0.1155	0.3717	0.3%
%RSD		1.3040	0.4619	1.4866	0.2

ICV1 8/5/2016 5:44:25 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:44:25	25.6702	29.6890	28.0159	100.5%
2	05:44:36	25.8448	29.9538	28.2114	100.4%
3	05:44:46	24.8765	28.5581	27.7659	101.1%
x		25.4638	29.4003	27.9977	100.7%
σ		0.5161	0.7412	0.2233	0.4%
%RSD		2.0267	2.5212	0.7976	0.4

CCV1 8/5/2016 5:46:39 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:46:39	25.3786	25.3760	25.4165	101.3%
2	05:46:50	25.0295	25.0916	24.9740	100.3%
3	05:47:00	25.2207	25.0019	24.5342	101.7%
x		25.2096	25.1565	24.9749	101.1%
σ		0.1748	0.1953	0.4411	0.7%
%RSD		0.6934	0.7763	1.7663	0.7

ICB1 8/5/2016 5:48:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:48:52	0.0726	0.0641	0.0891	101.6%
2	05:49:03	0.0731	0.1062	0.0653	99.7%
3	05:49:14	0.0719	0.0523	0.0796	100.5%
x		0.0725	0.0742	0.0780	100.6%
σ		0.0006	0.0283	0.0120	1.0%
%RSD		0.8264	38.1977	15.3424	1.0

CCB1 8/5/2016 5:57:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:57:26	-0.0388	-0.0200	-0.0370	101.0%
2	05:57:36	-0.0361	-0.0190	-0.0263	98.8%
3	05:57:47	-0.0478	0.0079	-0.0433	98.5%
x		-0.0409	-0.0104	-0.0355	99.4%
σ		0.0061	0.0158	0.0086	1.3%
%RSD		14.9863	152.7485	24.2370	1.3

LLICVW 8/5/2016 5:59:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:59:40	0.4505	0.4323	0.4425	99.2%
2	05:59:50	0.4367	0.4668	0.4864	97.7%
3	06:00:01	0.4301	0.3869	0.5136	97.5%
x		0.4391	0.4287	0.4808	98.2%
σ		0.0104	0.0401	0.0359	0.9%
%RSD		2.3645	9.3553	7.4625	0.9

LRSTD 8/5/2016 6:01:54 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:01:54	206.0177	206.6226	202.9570	98.5%
2	06:02:05	204.4385	201.2339	200.8658	99.6%
3	06:02:16	202.8644	204.3904	203.1290	99.2%
x		204.4402	204.0823	202.3173	99.1%
σ		1.5766	2.7075	1.2599	0.5%
%RSD		0.7712	1.3267	0.6228	0.5

ICSA 8/5/2016 6:05:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:05:52	2.0193	5.1031	1.7801	93.1%
2	06:06:03	2.0224	5.0883	1.7642	93.3%
3	06:06:14	2.0764	4.7413	1.8605	93.3%
x		2.0394	4.9776	1.8016	93.2%
σ		0.0321	0.2048	0.0516	0.2%
%RSD		1.5751	4.1136	2.8656	0.2

ICSAB 8/5/2016 6:08:08 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:08:08	26.6336	28.2492	24.3451	91.8%
2	06:08:19	26.4267	28.1931	24.7238	93.0%
3	06:08:29	26.2232	28.9694	24.6132	93.1%
x		26.4278	28.4705	24.5607	92.6%
σ		0.2052	0.4329	0.1947	0.7%
%RSD		0.7765	1.5205	0.7928	0.8

KQ1609201-01 8/5/2016 6:10:22 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:10:22	-0.0214	-0.0032	-0.0109	94.9%
2	06:10:32	-0.0145	0.0598	-0.0137	94.6%
3	06:10:43	-0.0069	0.0617	-0.0219	93.1%
x		-0.0143	0.0394	-0.0155	94.2%
σ		0.0073	0.0369	0.0057	1.0%
%RSD		50.9433	93.6065	36.6097	1.0

KQ1609201-02 8/5/2016 6:12:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:12:34	24.0525	27.2375	26.8497	95.6%
2	06:12:45	23.8612	28.1148	26.3448	94.9%
3	06:12:55	23.7234	27.8112	26.8798	94.1%
x		23.8790	27.7212	26.6914	94.9%
σ		0.1653	0.4456	0.3006	0.7%
%RSD		0.6923	1.6073	1.1260	0.8

KQ1609201-03 8/5/2016 6:14:46 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:14:46	24.0373	28.3844	27.0564	95.8%
2	06:14:57	24.2141	27.4928	26.8380	96.2%
3	06:15:08	24.8982	28.6710	26.4043	94.0%
x		24.3832	28.1827	26.7663	95.4%
σ		0.4547	0.6145	0.3319	1.2%
%RSD		1.8647	2.1803	1.2401	1.2

K1608011-007 8/5/2016 6:16:59 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:16:59	0.2927	0.3545	0.2731	95.7%
2	06:17:10	0.3067	0.3661	0.2769	94.6%
3	06:17:21	0.2960	0.3294	0.3064	95.1%
x		0.2985	0.3500	0.2855	95.1%
σ		0.0074	0.0188	0.0182	0.5%
%RSD		2.4652	5.3692	6.3785	0.6

K1608011-007L 8/5/2016 6:19:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:19:12	0.3974	0.3297	0.3730	96.7%
2	06:19:23	0.4467	0.4764	0.4205	94.8%
3	06:19:34	0.4724	0.4728	0.4131	94.2%
x		0.4388	0.4263	0.4022	95.2%
σ		0.0381	0.0837	0.0255	1.3%
%RSD		8.6846	19.6320	6.3415	1.3

K1608011-007A 8/5/2016 6:21:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:21:26	22.7930	23.0239	22.6704	95.8%
2	06:21:37	22.3784	22.8072	22.2122	94.6%
3	06:21:48	22.2870	22.4722	21.8112	95.7%
x		22.4861	22.7678	22.2313	95.4%
σ		0.2696	0.2780	0.4299	0.7%
%RSD		1.1991	1.2208	1.9339	0.7

CCV2 8/5/2016 6:23:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:23:40	24.5378	25.0376	24.9515	96.2%
2	06:23:51	24.7700	25.0390	24.9692	95.0%
3	06:24:02	25.0346	25.3246	24.7635	95.1%
x		24.7808	25.1337	24.8947	95.4%
σ		0.2486	0.1653	0.1140	0.6%
%RSD		1.0032	0.6576	0.4580	0.7

CCB2 8/5/2016 6:25:53 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:25:53	-0.0169	0.0107	-0.0213	94.9%
2	06:26:04	-0.0268	-0.0249	-0.0298	97.1%
3	06:26:15	-0.0110	-0.0167	0.0014	94.3%
x		-0.0182	-0.0103	-0.0166	95.4%
σ		0.0080	0.0187	0.0161	1.5%
%RSD		43.7226	180.9580	97.4558	1.5

K1608207-015 8/5/2016 6:28:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:28:06	0.3308	0.3330	0.2859	94.2%
2	06:28:17	0.2970	0.3973	0.3275	93.9%
3	06:28:28	0.3259	0.3241	0.3013	93.0%
x		0.3179	0.3514	0.3049	93.7%
σ		0.0182	0.0399	0.0210	0.7%
%RSD		5.7386	11.3615	6.8975	0.7

K1608209-015 8/5/2016 6:30:20 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:30:20	0.4010	0.4068	0.4051	93.4%
2	06:30:31	0.3375	0.3609	0.3307	94.2%
3	06:30:42	0.3547	0.4690	0.3844	93.6%
x		0.3644	0.4122	0.3734	93.8%
σ		0.0328	0.0543	0.0384	0.4%
%RSD		9.0135	13.1705	10.2791	0.4

K1608210-015 8/5/2016 6:32:36 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:32:36	0.2816	0.2995	0.2888	93.8%
2	06:32:47	0.2743	0.3900	0.2807	94.0%
3	06:32:57	0.2887	0.3743	0.2547	92.8%
x		0.2815	0.3546	0.2748	93.6%
σ		0.0072	0.0484	0.0178	0.6%
%RSD		2.5706	13.6407	6.4898	0.7

K1608325-014 8/5/2016 6:34:51 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:34:51	0.4234	0.5461	0.4245	92.6%
2	06:35:02	0.3883	0.4967	0.3946	93.7%
3	06:35:13	0.4344	0.4484	0.3683	92.3%
x		0.4153	0.4971	0.3958	92.9%
σ		0.0241	0.0488	0.0281	0.8%
%RSD		5.8036	9.8213	7.1022	0.8

K1608344-013 8/5/2016 6:37:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:37:06	0.5489	0.4987	0.4725	94.6%
2	06:37:17	0.5154	0.5805	0.5625	93.8%
3	06:37:28	0.5511	0.5989	0.5334	93.2%
x		0.5385	0.5594	0.5228	93.9%
σ		0.0200	0.0533	0.0459	0.7%
%RSD		3.7174	9.5304	8.7855	0.7

CCV3 8/5/2016 6:39:21 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:39:21	25.2609	25.7288	24.8825	94.6%
2	06:39:32	24.4702	24.7630	24.3337	95.1%
3	06:39:43	24.5560	24.4272	23.9673	96.2%
x		24.7624	24.9730	24.3945	95.3%
σ		0.4339	0.6757	0.4606	0.8%
%RSD		1.7522	2.7057	1.8882	0.9

CCB3 8/5/2016 6:41:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:41:34	-0.0182	-0.0102	-0.0126	95.1%
2	06:41:45	-0.0234	0.0042	-0.0016	94.4%
3	06:41:56	-0.0090	-0.0239	-0.0079	94.8%
x		-0.0169	-0.0100	-0.0074	94.7%
σ		0.0073	0.0141	0.0055	0.4%
%RSD		43.0510	140.4253	74.6547	0.4

LLCCVW 8/5/2016 6:43:50 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:43:50	0.4768	0.3745	0.4139	95.8%
2	06:44:00	0.4794	0.4953	0.4537	96.3%
3	06:44:12	0.4501	0.4373	0.4428	95.6%
x		0.4687	0.4357	0.4368	95.9%
σ		0.0162	0.0604	0.0206	0.4%
%RSD		3.4595	13.8632	4.7129	0.4

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 26, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on September 12, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37049:

SDG #	**Fraction:**
K1608207 K160820, K1608210, K1608325, K1608344	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #37049 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	(4) Metals (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	K1608207	09/12/16	09/26/16	1	4																														
A	K1608207	09/12/16	09/26/16	0	5																														
B	K1608209	09/12/16	09/26/16	1	9																														
C	K1608210	09/12/16	09/26/16	1	9																														
D	K1608325	09/12/16	09/26/16	1	13																														
E	K1608344	09/12/16	09/26/16	1	9																														
Total	J/PG			5	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\37049ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDGs: K1608207, K1608209, K1608210, K1608325, K1608344

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 23, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the July 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilution, laboratory control sample (LCS), field duplicate samples, split samples, and internal standards. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, split samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the method were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the method blanks reviewed by ADR with the exception of copper, lead, and zinc. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608207/ 6020A	ICB/CCB	Antimony Lead	0.020 ug/L 0.008 ug/L	All water samples in SDG K1608207
K1608207/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816
K1608209/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FTBL-SS-B34-0-6-071916
K1608209/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608209
K1608210/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608210

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608325/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B03-0-6-072116 FD072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116
K1608325/ 6020A	ICB/CCB	Antimony Lead	0.013 ug/L 0.008 ug/L	All water samples in SDG K1608325
K1608344/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FD072016
K1608344/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	EB072016

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1608207/ 6020A	EB071816	Lead	0.038 ug/L	0.038U ug/L
K1608209/ 6020A	EB071916	Lead	0.018 ug/L	0.018U ug/L
K1608210/ 6020A	EB071516	Lead	0.019 ug/L	0.019U ug/L
K1608325/ 6020A	FD072116	Antimony	0.093 mg/Kg	0.093U mg/Kg
K1608325/ 6020A	EB072116	Antimony Lead	0.012 ug/L 0.022 ug/L	0.012U ug/L 0.022U ug/L
K1608344/ 6020A	FD072016	Antimony	0.152 mg/Kg	0.152U mg/Kg
K1608344/ 6020A	EB072016	Antimony Lead	0.007 ug/L 0.034 ug/L	0.007U ug/L 0.034U ug/L

VI. Field Blanks

Ten equipment blanks were collected and analyzed for metals. One equipment blank had detections for copper, lead, and zinc. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of four MS/MSD pairs for antimony and lead. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R or serial dilution %R were within QC limits. The details are provided in Enclosures I and II.

X. Duplicate Sample Analysis/Triplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) and triplicate (TRP) analyses specified for the samples in these SDGs, and therefore duplicate and triplicate analyses were not performed for these SDGs.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XIII. Field Duplicates

Five field duplicate pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of antimony, copper, and lead in three duplicate pairs. The associated sample results were qualified as detected estimated (J). The field duplicate result comparisons are provided in Enclosure I.

Four split sample pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of lead in one split sample pair. The associated sample results were qualified as detected estimated (J). No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The split sample comparisons are provided in Enclosures I and II.

XIV. Internal Standards

All internal standard areas percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to field duplicate RPD and results reported below the LOQ, data were qualified as estimated in eight samples.

Due to split sample RPD, data were qualified as estimated in two samples.

Due to method blank contamination, data were qualified as not detected in four samples.

Due to calibration blank contamination, data were qualified as not detected in seven samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2016	FD071516	K1608210-012	FD	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B27-0-6-071516	K1608210-003	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B28-0-6-071516	K1608210-004	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B29-0-6-071516	K1608210-005	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B30-0-6-071516	K1608210-006	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B39-0-6-071516	K1608210-010	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B40-0-6-071516	K1608210-011	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B41-0-6-071516	K1608210-014	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B42-0-6-071516	K1608210-013	N	EPA 3050B	6020A	III
15-Jul-2016	EB071516	K1608210-015	EB	CLFAA	6020A	III
15-Jul-2016	EB071516RE	K1608210-015RE	EB	CLFAA	6020A	III
18-Jul-2016	FD071816	K1608207-014	FD	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B60-0-6-071816	K1608207-006	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B59-0-6-071816	K1608207-005	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B58-0-6-071816	K1608207-004	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816	K1608207-003	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	MS	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MSD	K1608207-003SD	MSD	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B52-0-6-071816	K1608207-011	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B51-0-6-071816	K1608207-010	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B53-0-6-071816	K1608207-012	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B54-0-6-071816	K1608207-013	N	EPA 3050B	6020A	III
18-Jul-2016	EB071816	K1608207-015	EB	CLFAA	6020A	III
18-Jul-2016	EB071816RE	K1608207-015RE	EB	CLFAA	6020A	III
19-Jul-2016	FD071916	K1608209-014	FD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B33-0-6-071916	K1608209-004	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Jul-2016	FTBL-SS-B34-0-6-071916	K1608209-005	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B35-0-6-071916	K1608209-006	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B36-0-6-071916	K1608209-007	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916	K1608209-010	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	MS	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MSD	K1608209-010SD	MSD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B46-0-6-071916	K1608209-011	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B47-0-6-071916	K1608209-012	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B48-0-6-071916	K1608209-013	N	EPA 3050B	6020A	III
19-Jul-2016	EB071916	K1608209-015	EB	CLFAA	6020A	III
19-Jul-2016	EB071916RE	K1608209-015RE	EB	CLFAA	6020A	III
20-Jul-2016	FD072016	K1608344-012	FD	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B21-0-6-072016	K1608344-002	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B22-0-6-072016	K1608344-003	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B23-0-6-072016	K1608344-004	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B24-0-6-072016	K1608344-005	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B15-0-6-072016	K1608344-008	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B16-0-6-072016	K1608344-009	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B17-0-6-072016	K1608344-010	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016	K1608344-011	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	MS	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MSD	K1608344-011SD	MSD	EPA 3050B	6020A	III
20-Jul-2016	EB072016	K1608344-013	EB	CLFAA	6020A	III
20-Jul-2016	EB072016RE	K1608344-013RE	EB	CLFAA	6020A	III
21-Jul-2016	FD072116	K1608325-010	FD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B09-0-6-072116	K1608325-003	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-Jul-2016	FTBL-SS-B11-0-6-072116	K1608325-005	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B10-0-6-072116	K1608325-004	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B12-0-6-072116	K1608325-006	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B07-0-12-072116	K1608325-001	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B08-0-12-072116	K1608325-002	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116	K1608325-009	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	MS	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MSD	K1608325-009SD	MSD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116	K1608325-011	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116RE	K1608325-011RE	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B05-0-6-072116	K1608325-012	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B06-0-6-072116	K1608325-013	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B01-0-12-072116	K1608325-007	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B02-0-12-072116	K1608325-008	N	EPA 3050B	6020A	III
21-Jul-2016	EB072116	K1608325-014	EB	CLFAA	6020A	III
21-Jul-2016	EB072116RE	K1608325-014RE	EB	CLFAA	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608207

Method Category: METALS

Method: 6020A **Matrix:** Soil

Sample ID: FD071816 **Collected:** 7/18/2016 12:00:00 AM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.166	J	0.021	LOD	0.043	LOQ	mg/Kg	J	Fd
COPPER	9.95	=	0.043	LOD	0.085	LOQ	mg/Kg	J	Fd
LEAD	21.2	J	0.011	LOD	0.043	LOQ	mg/Kg	J	Fd

Sample ID: FTBL-SS-B54-0-6-071816 **Collected:** 7/18/2016 12:20:00 PM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	2.16	J	0.023	LOD	0.046	LOQ	mg/Kg	J	Fd
COPPER	40.1	=	0.046	LOD	0.091	LOQ	mg/Kg	J	Fd
LEAD	330	J	0.011	LOD	0.046	LOQ	mg/Kg	J	Fd

Method Category: METALS

Method: 6020A **Matrix:** Water

Sample ID: EB071816 **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Initial/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.038	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Sample ID: EB071816RE **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Reanalysis-1/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608209

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608209

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/19/2016 12:00:00

Sample ID: FD071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.957	J	0.019	LOD	0.038	LOQ	mg/Kg	J	Fd
LEAD	169	J	0.009	LOD	0.038	LOQ	mg/Kg	J	Fd

7/19/2016 11:25:00

Sample ID: FTBL-SS-B45-0-6-071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.543	J	0.018	LOD	0.036	LOQ	mg/Kg	J	Fd
LEAD	56.0	J	0.009	LOD	0.036	LOQ	mg/Kg	J	Fd, ProfJudg

Method Category: METALS

Method: 6020A **Matrix:** Water

7/19/2016 1:50:00

Sample ID: EB071916 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.018	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/19/2016 1:50:00

Sample ID: EB071916RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608210

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/15/2016 12:00:00

Sample ID: FD071516 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.353	J	0.020	LOD	0.041	LOQ	mg/Kg	J	Fd

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608210

Method Category: METALS **Method:** 6020A **Matrix:** Soil

7/15/2016 12:20:00

Sample ID: FTBL-SS-B42-0-6-071516 *Collected:* PM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.894	J	0.019	LOD	0.039	LOQ	mg/Kg	J	Fd

Method Category: METALS **Method:** 6020A **Matrix:** Water

7/15/2016 3:15:00

Sample ID: EB071516 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.019	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/15/2016 3:15:00

Sample ID: EB071516RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608325

Method Category: METALS **Method:** 6020A **Matrix:** Soil

7/21/2016 12:00:00

Sample ID: FD072116 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.093	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS **Method:** 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.012	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608325

Method Category: METALS

Method: 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.13	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.022	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

7/21/2016 1:50:00

Sample ID: EB072116RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608344

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/20/2016 12:00:00

Sample ID: FD072016 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.152	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A **Matrix:** Water

7/20/2016 1:50:00

Sample ID: EB072016 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.007	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
COPPER	0.15	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.034	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Fd	Field Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

K1608207

Method Blank Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071816 FTBL-SS-B51-0-6-071816 FTBL-SS-B52-0-6-071816 FTBL-SS-B53-0-6-071816 FTBL-SS-B54-0-6-071816 FTBL-SS-B57-0-6-071816 FTBL-SS-B58-0-6-071816 FTBL-SS-B59-0-6-071816 FTBL-SS-B60-0-6-071816

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071816

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B57-0-6-071816MS (Dry) FTBL-SS-B57-0-6-071816MSD (Dry) (FTBL-SS-B57-0-6-071816)	ANTIMONY LEAD	38 -	38 83	72.00-124.00 84.00-118.00	- -	ANTIMONY LEAD	No Qual, Sb, Post Spike = 102% Pb, Serial Dilution OK

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B54-0-6-071816 (Dry)	FD071816 (Dry)			
ZINC	67.3	110	48	50.00	No Qualifiers Applied
ANTIMONY	2.16	0.166	171	50.00	J(all detects)
COPPER	40.1	9.95	120	50.00	
LEAD	330	21.2	176	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071816RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049A4a
SDG #: K1608207
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR~~/IV~~
SD

Date: 9/15/18
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. MSD = %Rec out; PB ok, %RPD ok, SER ok = NA
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	SER=(-)
X.	Laboratory control samples	N	Not reviewed for ADR validation.
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	FTBL-SS-B52-0-6-071816	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	EB071816	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 31049A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: 3D
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DUP-11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.020	0.1										
Pb			0.008	0.04	0.038									

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Quality Control
Outlier Reports

K1608209

Method Blank Outlier Report

Lab Reporting Batch ID: K1608209 Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609300-03	8/24/2016 9:32:00 PM	LEAD	0.006 mg/Kg	FD071916 FTBL-SS-B33-0-6-071916 FTBL-SS-B34-0-6-071916 FTBL-SS-B35-0-6-071916 FTBL-SS-B36-0-6-071916 FTBL-SS-B45-0-6-071916 FTBL-SS-B46-0-6-071916 FTBL-SS-B47-0-6-071916 FTBL-SS-B48-0-6-071916

Method: 6020A
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071916

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071916(Initial/TOT)	LEAD	0.018 ug/L	0.018U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	LEAD	123	134	84.00-118.00	-	LEAD	No Qual, Serial Dilution OK
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	ANTIMONY	42	41	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 98%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B45-0-6-071916 (Dry)	FD071916 (Dry)			
COPPER	18.7	24.0	25	50.00	No Qualifiers Applied
ZINC	54.7	61.6	12	50.00	
ANTIMONY	0.543	0.957	55	50.00	J(all detects)
LEAD	56.0	169	100	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071916	COPPER LEAD	J J	0.07 0.018	0.10 0.020	LOQ LOQ	ug/L ug/L	J (all detects)
EB071916RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049B4a
SDG #: K1608209
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/8/17
Page: 1 of 1
Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD: Sb out; Ba ok; SER ok = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (5)
X.	Laboratory control samples	N	
XI.	~~Field~~ Split Duplicates	SW	SD = (5, FTBL-SS-B45-0-6-071916-QA) (SDG: FA355653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B33-0-6-071916	K1608209-004	Soil	07/19/16
2	FTBL-SS-B34-0-6-071916	K1608209-005	Soil	07/19/16
3	FTBL-SS-B35-0-6-071916	K1608209-006	Soil	07/19/16
4	FTBL-SS-B36-0-6-071916	K1608209-007	Soil	07/19/16
5	FTBL-SS-B45-0-6-071916	K1608209-010	Soil	07/19/16
6	FTBL-SS-B46-0-6-071916	K1608209-011	Soil	07/19/16
7	FTBL-SS-B47-0-6-071916	K1608209-012	Soil	07/19/16
8	FTBL-SS-B48-0-6-071916	K1608209-013	Soil	07/19/16
9	FD071916	K1608209-014	Soil	07/19/16
10	EB071916	K1608209-015	Water	07/19/16
11	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	Soil	07/19/16
12	FTBL-SS-B45-0-6-071916MSD	K1608209-010MSD	Soil	07/19/16
13				
14				
15				

LDC #: 37044A8H

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: JD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, (Co) (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co (Cu) Fe (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC:11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Comments: Mercury by CVAA if performed

LDC #: 37049B4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 2

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.092	0.23										

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.018									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049B4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Page: 1 of
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	5	FTBL-SS-B45-0-6-071916-QA (SDG: FA35653)		
Antimony	0.543	2.1	118	NQ
Copper	18.7	17.3	8	
Lead	56.0	215	117	Jdet/A (det)
Zinc	54.7	48.1	13	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049B4a.wpd

Quality Control
Outlier Reports

K1608210

Method Blank Outlier Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071516 FTBL-SS-B27-0-6-071516 FTBL-SS-B28-0-6-071516 FTBL-SS-B29-0-6-071516 FTBL-SS-B30-0-6-071516 FTBL-SS-B39-0-6-071516 FTBL-SS-B40-0-6-071516 FTBL-SS-B41-0-6-071516 FTBL-SS-B42-0-6-071516

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071516

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071516(Initial/TOT)	LEAD	0.019 ug/L	0.019U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071516	COPPER LEAD	J J	0.07 0.019	0.10 0.020	LOQ LOQ	ug/L ug/L	J (all detects)
EB071516RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B42-0-6-071516 (Dry)	FD071516 (Dry)			
COPPER	24.1	23.3	3	50.00	No Qualifiers Applied
LEAD	122	110	10	50.00	
ZINC	68.8	76.6	11	50.00	
ANTIMONY	0.894	0.353	87	50.00	J(all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049C4a
SDG #: K1608210
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (B, FTBL-SS-B27-0-6-071516-DA) (SDG: FA35653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B27-0-6-071516	K1608210-003	Soil	07/15/16
2	FTBL-SS-B28-0-6-071516	K1608210-004	Soil	07/15/16
3	FTBL-SS-B29-0-6-071516	K1608210-005	Soil	07/15/16
4	FTBL-SS-B30-0-6-071516	K1608210-006	Soil	07/15/16
5	FTBL-SS-B39-0-6-071516	K1608210-010	Soil	07/15/16
6	FTBL-SS-B40-0-6-071516	K1608210-011	Soil	07/15/16
7	FD071516	K1608210-012	Soil	07/15/16
8	FTBL-SS-B42-0-6-071516	K1608210-013	Soil	07/15/16
9	FTBL-SS-B41-0-6-071516	K1608210-014	Soil	07/15/16
10	EB071516	K1608210-015	Water	07/15/16
11	FTBL-SS-B27-0-6-071516MS	K1608210-003MS	Soil	07/15/16
12	FTBL-SS-B27-0-6-071516MSD	K1608210-003MSD	Soil	07/15/16
13				
14				
15				

LDC #: 37046C4A

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049C4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.019									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049C4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: 3D
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y/N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B42-0-6-071516-QA (SDG: FA35653)		
Antimony	0.894	0.83U	7	
Copper	24.1	24.4	1	
Lead	122	102	18	
Zinc	68.8	61.8	11	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049C4a.wpd

Quality Control
Outlier Reports

K1608325

Method Blank Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609275-03	8/24/2016 5:38:00 PM	COPPER LEAD ZINC	0.035 mg/Kg 0.038 mg/Kg 0.36 mg/Kg	FD072116 FTBL-SS-B01-0-12-072116 FTBL-SS-B02-0-12-072116 FTBL-SS-B03-0-6-072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B04-0-6-072116RE FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116 FTBL-SS-B07-0-12-072116 FTBL-SS-B08-0-12-072116 FTBL-SS-B09-0-6-072116 FTBL-SS-B10-0-6-072116 FTBL-SS-B11-0-6-072116 FTBL-SS-B12-0-6-072116

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072116

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072116(Initial/TOT)	COPPER	0.13 ug/L	0.13U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B03-0-6-072116MS (Dry) FTBL-SS-B03-0-6-072116MSD (Dry) (FTBL-SS-B03-0-6-072116)	ANTIMONY	50	50	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 101%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072116	ANTIMONY	J	0.012	0.050	LOQ	ug/L	J (all detects)
EB072116RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B03-0-6-072116 (Dry)	FD072116 (Dry)			
ANTIMONY	0.136	0.093	38	50.00	No Qualifiers Applied
COPPER	9.48	7.54	23	50.00	
LEAD	23.6	15.0	45	50.00	
ZINC	45.5	47.2	4	50.00	

LDC #: 37049D4a
SDG #: K1608325
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16

Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D = SB out; PS in = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (9)
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (9, FTBL-SS-B03-0-6-072116-2A)
XII.	Internal Standard (ICP-MS)	A	(SD6: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B07-0-12-072116	K1608325-001	Soil	07/21/16
2	FTBL-SS-B08-0-12-072116	K1608325-002	Soil	07/21/16
3	FTBL-SS-B09-0-6-072116	K1608325-003	Soil	07/21/16
4	FTBL-SS-B10-0-6-072116	K1608325-004	Soil	07/21/16
5	FTBL-SS-B11-0-6-072116	K1608325-005	Soil	07/21/16
6	FTBL-SS-B12-0-6-072116	K1608325-006	Soil	07/21/16
7	FTBL-SS-B01-0-12-072116	K1608325-007	Soil	07/21/16
8	FTBL-SS-B02-0-12-072116	K1608325-008	Soil	07/21/16
9	FTBL-SS-B03-0-6-072116	K1608325-009	Soil	07/21/16
10	FD072116	K1608325-010	Soil	07/21/16
11	FTBL-SS-B04-0-6-072116	K1608325-011	Soil	07/21/16
12	FTBL-SS-B05-0-6-072116	K1608325-012	Soil	07/21/16
13	FTBL-SS-B06-0-6-072116	K1608325-013	Soil	07/21/16
14	EB072116	K1608325-014	Water	07/21/16
15	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	Soil	07/21/16

LDC #: 37049D4a

SDG #: K1608325

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/16

Reviewer: JD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

	Client ID	Lab ID	Matrix	Date
16	FTBL-SS-B03-0-6-072116MSD	K1608325-009MSD	Soil	07/21/16
17				
18				
19				
20				
21				

Notes:

LDC #: 31045D4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-13	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
14	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
QC-15-10	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049D4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9-13

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.048	0.12	0.093									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	14									
Sb			0.013	0.065	0.012									
Pb			0.008	0.04	0.022									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049D4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: SB
2nd Reviewer: [signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	9	FTBL-SS-B03-0-6-072116-QA (SDG: FA35653)		
Antimony	0.136	2.8U	181	NQ
Copper	9.48	9.8	3	
Lead	23.6	25.7	9	
Zinc	45.5	52.3	14	

NQ = No qual because one or both samples < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049D4a.wpd

Quality Control
Outlier Reports

K1608344

Method Blank Outlier Report

Lab Reporting Batch ID: K1608344 **Laboratory:** ALS_K

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name:** Arcadis_FtBliss_ALS_160627

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609920-03	8/24/2016 8:29:00 PM	LEAD ZINC	0.007 mg/Kg 0.14 mg/Kg	FD072016 FTBL-SS-B15-0-6-072016 FTBL-SS-B16-0-6-072016 FTBL-SS-B17-0-6-072016 FTBL-SS-B18-0-6-072016 FTBL-SS-B21-0-6-072016 FTBL-SS-B22-0-6-072016 FTBL-SS-B23-0-6-072016 FTBL-SS-B24-0-6-072016

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072016(Initial/TOT)	COPPER	0.15 ug/L	0.15U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B18-0-6-072016MS (Dry) FTBL-SS-B18-0-6-072016MSD (Dry) (FTBL-SS-B18-0-6-072016)	ANTIMONY	38	38	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 103%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072016	ANTIMONY	J	0.007	0.050	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B18-0-6-072016 (Dry)	FD072016 (Dry)			
ANTIMONY	0.126	0.152	19	50.00	No Qualifiers Applied
COPPER	16.8	14.2	17	50.00	
LEAD	25.2	20.2	22	50.00	
ZINC	51.6	42.6	19	50.00	

LDC #: 37049E4a (9 of 30)

SDG #: K1608344

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/17

Page: 1 of 1

Reviewer: SD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = Sb out = PS ok = NC
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(8)
X.	Laboratory control samples	N	
XI.	~~Field Duplicates~~ Split	N	SD=(8, FTBL-SS-B18-0-6-072016-DA)
XII.	Internal Standard (ICP-MS)	A	(SDG: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B21-0-6-072016	K1608344-002	Soil	07/20/16
2	FTBL-SS-B22-0-6-072016	K1608344-003	Soil	07/20/16
3	FTBL-SS-B23-0-6-072016	K1608344-004	Soil	07/20/16
4	FTBL-SS-B24-0-6-072016	K1608344-005	Soil	07/20/16
5	FTBL-SS-B15-0-6-072016	K1608344-008	Soil	07/20/16
6	FTBL-SS-B16-0-6-072016	K1608344-009	Soil	07/20/16
7	FTBL-SS-B17-0-6-072016	K1608344-010	Soil	07/20/16
8	FTBL-SS-B18-0-6-072016	K1608344-011	Soil	07/20/16
9	FD072016	K1608344-012	Soil	07/20/16
10	EB072016	K1608344-013	Water	07/20/16
11	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	Soil	07/20/16
12	FTBL-SS-B18-0-6-072016MSD	K1608344-011MSD	Soil	07/20/16
13				
14				
15				

LDC #: 37042EV4 (9 of 50)

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DC, 11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37042E4a (30)

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	9									
Sb			0.092	0.23	0.152									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 10

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06	0.007									
Pb			0.008	0.04	0.034									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049E4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: SD
2nd Reviewer: CL

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B18-0-6-072016-QA (SDG: FA35653)		
Antimony	0.126	0.74U	142	NQ
Copper	16.8	14.6	14	
Lead	25.2	22.4	12	
Zinc	51.6	39.3	27	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049E4a.wpd

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 21, 2016

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1608207

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-SS-B57-0-6-071816	K1608207-003	Soil	07/18/16
FTBL-SS-B58-0-6-071816	K1608207-004	Soil	07/18/16
FTBL-SS-B59-0-6-071816	K1608207-005	Soil	07/18/16
FTBL-SS-B60-0-6-071816	K1608207-006	Soil	07/18/16
FTBL-SS-B51-0-6-071816	K1608207-010	Soil	07/18/16
FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Copper, Lead, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Lead Zinc	0.026 mg/Kg 0.19 mg/Kg	All samples in SDG K1608207
ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

Sample EB071816 was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
EB071816	07/18/16	Copper Lead Zinc	0.15 ug/L 0.038 ug/L 0.3 ug/L	All soil samples in SDG K1608207

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For FTBL-SS-B57-0-6-071816MS/MSD, no data were qualified for Antimony and Lead percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

LDC #: 37049A4a

SDG #: K1608207

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~/IV

SD

Date: 9/15/16

Page: 1 of 1

Reviewer: SD

2nd Reviewer: A

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	7/18/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	EB=(10)
VII.	Matrix Spike/Matrix Spike Duplicates	SW	MSD=(11,12)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(1)
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	~~FTBL-SS-B52-0-6-071816~~	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	~~EB071816~~	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 37049A6

VALIDATION FINDINGS CHECKLIST

Reviewer: SD
2nd Reviewer: MC

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?	✓			
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.				
Target analytes were detected in the field duplicates.				
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 37048A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: JD
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-S	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
QC 11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: All

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Pb	0.026			0.13										
Zn	0.19			0.95										

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 3D
2nd Reviewer: JL

METHOD: Trace Metals (EPA Method 200.7/200.8)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 07/18/16
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All

Analyte	Blank ID	Sample Identification											
[redacted]	10	Action Limit	No Qual.										
Cu	0.15	0.000750											
Pb	0.038	0.000190											
Zn	0.3	0.001500											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: SO
2nd Reviewer: M

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	11/12	S	Sb	38 (72-124)	38 (72-124)		1	No Qual. (PS ok)
			Pb		83 (84-118)			No Qual. (SER ok)

Comments:

LDC #: 37049A6

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: JD
2nd Reviewer:

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV 17:17	ICP/MS (Initial calibration)	Cu	12.9 ug/L	12.5 ug/L	103%R	103%R	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV 19:20	ICP/MS (Continuing calibration)	Pb	24.99 ug/L	25 ug/L	100%R	100%R	Y
	CVAA (Contining calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: _____

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: JO
2nd Reviewer: JC

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICS AB 17:35	ICP interference check	Zn	21.67 ug/L	25 ug/L	87%R	87%R	Y
LCS 19:17	Laboratory control sample	Cu	484.15 ug/L	500 ug/L	97%R	97%R	
MS 19:11	Matrix spike	Pb	(SSR-SR) 79.24 mg/kg	87.20 mg/kg	91%R	91%R	
MSD 19:14	Duplicate	Zn	139.83 mg/kg	139.09 mg/kg	0.5%RPD	0.5%RPD	
SER 19:05	ICP serial dilution	Cu	44.66 ug/L	41.93 ug/L	7%D	7%D	

Comments: *SER results = before 5x D:1 / 25x D:1 applied.

LDC #: 57049A4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JD
2nd reviewer: SJ

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

M N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for (1) Sb were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)(%solids)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

%solids: 0.94
RD = 0.455335 ug/L
FV = 100ml
In. W = 1.25g
Dil = 5

Recalculation: $\frac{(0.455335\ ug/L)(100ml)(5)}{(1.25g)(0.94)} \times \frac{1mg}{1000ug} = 0.193\ mg/kg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Sb	0.193	0.193	Y
	2	Cu	24.0	24.0	
	3	Pb	49.9	49.9	
	4	Zn	39.6	39.6	
	5	Sb	0.822	0.822	

Note:

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www.alsglobal.com

September 08, 2016

Analytical Report for Service Request No: K1608325

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

RE: Closed Castner Firing Range / 06261038.0001.00400

Dear (b) (6)

Enclosed are the results of the sample(s) submitted to our laboratory July 22, 2016
For your reference, these analyses have been assigned our service request number **K1608325.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at gregory.salata@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

(b) (6)
Senior Project
Manager

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
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Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
Chain of Custody
Total Solids
Metals
Raw Data
    Total Solids
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1608325
Project:	Closed Castner Firing Range/ 06261038.0001.00400	**Date Received:**	07/2216
Sample Matrix:	Soil and Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Fourteen samples were received for analysis at ALS Environmental on 07/22/16. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:
Antimony recoveries are generally low for soil and sediment samples when digested using EPA Method 3050B. Despite anticipated low recoveries, the method is still generally prescribed because of its versatility for general metals analysis. Antimony results (in conjunction with the matrix spike recovery) from this procedure should only be used as indicators to estimate concentrations. The matrix spike recoveries of Antimony for sample FTBL-SS-B03-0-6-072116 were below the DoD QSM control criterion. Since low recoveries resulted from a method defect and were possibly magnified by certain matrix components, no corrective action was appropriate. Alternative procedures that specifically target Antimony are available but were not specified for this project. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control.

No other anomalies associated with the analysis of these samples were observed.

Approved by___ (b) (6) _____

TRRP

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Appendix A ALS Kelso-Laboratory Data Package Signature Page

This data package consists of:

☒ This signature page, the laboratory review checklist, and the following reportable data:

☒ R1 Field chain-of-custody documentation;

☒ R2 Sample identification cross-reference;

☒ R3 Test reports (analytical data sheets) for each environmental sample that includes:

a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

☒ R4 Surrogate recovery data including:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

☒ R5 Test reports/summary forms for blank samples;

☒ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c) The laboratory's LCS QC limits.

☒ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits

☒ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

☒ R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;

☒ R10 Other problems or anomalies.

☒ The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable:] [This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

[redacted] (b) (6)	[redacted] (b) (6)	Senior Project Mgr	09/08/16
Name (Printed)	Sign	Official Title (printed)	Date

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608325				
Reviewer Name: [redacted]			Prep Batch Number(s): Various				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X1			
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608325				
Reviewer Name: [redacted]			Prep Batch Number(s): Various				
#[1]	**A[2]**	**Description**	**Yes**	**No**	**NA[3]**	**NR[4]**	**ER#[5]**
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 09/08/2016
Project Name: Closed Castner Firing Range	Laboratory Job Number: K1608325
Reviewer Name: [redacted]	Prep Batch Number(s): Various

ER#[5]	Description
X1	See Total Metals Matrix Spike Recovery Exceptions narrative notes.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
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Chain of Custody

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Chain of Custody

K1608335

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.:

Project Manager:	(b) (6)	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
Send copy to:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):				Temp Blank Present	
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

REQUESTED ANALYSIS

TAT

- ■ Standard 15 day
- ☐ Same Day ' 100%
- ☐ Next Day ***
- ☐ 3 Day
- ■ EDD

Surcharges. Please call for availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Explosives	TCLP Lead	Comments
FTBL-SS-B07-0-12-072116	S	072116	0945		2	X		X	Hold
FTBL-SS-B08-0-12-072116	S	072116	1045		2	X		X	Hold
FTBL-SS-B09-0-6-072116	S	072116	0900		1	X			
FTBL-SS-B10-0-6-072116	S	072116	0935		1	X			
FTBL-SS-B11-0-6-072116	S	072116	0925		1	X			
FTBL-SS-B12-0-6-072116	S	072116	0935		1	X			
FTBL-SS-B01-0-12-072116	S	072116	1250		2	X		X	Hold
FTBL-SS-B02-0-12-072116	S	072116	1330		2	X		X	Hold
FTBL-SS-B03-0-6-072116	S	072116	1210		1	X			
FD072116	S	072116	—		1	X			
FTBL-SS-B03-0-6-072116-MS	S	072116	1210		1	X			

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6)		072116/1400	(b) (6)	(b) (6)	7/22/16 1000

* Contact (b) (6) for running TCLP Pb.

Revised: 10/19/2016

Chain of Custody

K1608375

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.:

Project Manager:	(b) (6)	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:	[redacted]		
Project Number:			
Send copy to:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):			Temp Blank Present		
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

REQUESTED ANALYSIS

TAT

- ■ Standard 15 day
- ☐ Same Day * 100%
- ☐ Next Day ***
- ☐ 3 Day
- ■ EDD

Surcharges. Please call for availability

Due Date:

	Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Explosives	TCLP Lead	Comments
11	FTBL-SS-B03-C-6-072116-MSD	S	072116	1210		1	X			
12	FTBL-SS-B04-C-6-072116-	S	072116	1220		1	X			
13	FTBL-SS-B05-C-6-072116	S	072116	1235		1	X			
14	FTBL-SS-B06-C-6-072116	S	072116	1245		1	X			
	FB072116	W	072116	1350		1	X			

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6) [redacted]		072116/1400	(b) (6) [redacted]		7/22/16 1100

Revised: 10/20/2016

PC Greg

Cooler Receipt and Preservation Form

Client Arcadis Service Request *K16* 08326

Received: 7/22/16 Opened: 7/22/16 By: [illegible] Unloaded: 7/22/16 By: [illegible]

1. Samples were received via? *Mail* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? one, front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
-0.5	-0.9			0	360		7836 3706 3173	

4. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Page ____ *of* ____

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/21/16
Sample Matrix:	Soil	**Date Received:**	07/22/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	Air Dried

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
FTBL-SS-B07-0-12-072116	K1608325-001	**91.0**	-	-	1	08/03/16 13:03	
FTBL-SS-B08-0-12-072116	K1608325-002	**97.0**	-	-	1	08/03/16 13:03	
FTBL-SS-B09-0-6-072116	K1608325-003	**91.8**	-	-	1	08/03/16 13:03	
FTBL-SS-B10-0-6-072116	K1608325-004	**87.7**	-	-	1	08/03/16 13:03	
FTBL-SS-B11-0-6-072116	K1608325-005	**90.6**	-	-	1	08/03/16 13:03	
FTBL-SS-B12-0-6-072116	K1608325-006	**90.9**	-	-	1	08/03/16 13:03	
FTBL-SS-B01-0-12-072116	K1608325-007	**98.8**	-	-	1	08/03/16 13:03	
FTBL-SS-B02-0-12-072116	K1608325-008	**97.4**	-	-	1	08/03/16 13:03	
FTBL-SS-B03-0-6-072116	K1608325-009	**87.9**	-	-	1	08/03/16 13:03	
FD072116	K1608325-010	**82.5**	-	-	1	08/03/16 13:03	
FTBL-SS-B04-0-6-072116	K1608325-011	**91.0**	-	-	1	08/03/16 13:03	
FTBL-SS-B05-0-6-072116	K1608325-012	**92.1**	-	-	1	08/03/16 13:03	
FTBL-SS-B06-0-6-072116	K1608325-013	**90.6**	-	-	1	08/03/16 13:03	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/21/16
Sample Matrix:	Soil	**Date Received:**	07/22/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	Air Dried

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
FTBL-SS-B03-0-6-072116	K1608325-009DUP	-	87.9	87.2	87.6	<1	20	08/03/16

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Biosolids Solids	**Date Received:**	NA
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1608410-001DUP	-	25.2	25.3	25.3	<1	20	08/03/16

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608325
Date Collected: 7/21/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B07-0-12-072116 **Lab Code:** K1608325-001

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.039	0.019	0.015	5.0	08/05/16	08/24/16	0.146		J
Copper	6020A	0.077	0.039	0.015	5.0	08/05/16	08/24/16	8.86		
Lead	6020A	0.039	0.010	0.004	5.0	08/05/16	08/24/16	24.9		
Zinc	6020A	0.39	0.19	0.08	5.0	08/05/16	08/24/16	55.5		

% Solids: 91.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project No.:	06261038.0001.00400	**Date Collected:**	7/21/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B08-0-12-072116** **Lab Code:** **K1608325-002**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.042	0.021	0.017	5.0	08/05/16	08/24/16	0.320		J
Copper	6020A	0.084	0.042	0.017	5.0	08/05/16	08/24/16	9.72		
Lead	6020A	0.042	0.010	0.004	5.0	08/05/16	08/24/16	78.9		
Zinc	6020A	0.42	0.21	0.08	5.0	08/05/16	08/24/16	41.2		

% Solids: **97.0**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608325
Date Collected: 7/21/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B09-0-6-072116 **Lab Code:** K1608325-003

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.042	0.021	0.017	5.0	08/05/16	08/24/16	0.201		J
Copper	6020A	0.084	0.042	0.017	5.0	08/05/16	08/24/16	27.2		
Lead	6020A	0.042	0.011	0.004	5.0	08/05/16	08/24/16	53.7		
Zinc	6020A	0.42	0.21	0.08	5.0	08/05/16	08/24/16	47.9		

% Solids: 91.8

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608325
Date Collected: 7/21/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B10-0-6-072116 **Lab Code:** K1608325-004

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.037	0.019	0.015	5.0	08/05/16	08/24/16	0.193		J
Copper	6020A	0.074	0.037	0.015	5.0	08/05/16	08/24/16	14.0		
Lead	6020A	0.037	0.009	0.004	5.0	08/05/16	08/24/16	43.9		
Zinc	6020A	0.37	0.19	0.07	5.0	08/05/16	08/24/16	41.4		

% Solids: 87.7

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608325
Date Collected: 7/21/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B11-0-6-072116 **Lab Code:** K1608325-005

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.021	0.017	5.0	08/05/16	08/24/16	0.128		J
Copper	6020A	0.086	0.043	0.017	5.0	08/05/16	08/24/16	15.8		
Lead	6020A	0.043	0.011	0.004	5.0	08/05/16	08/24/16	26.1		
Zinc	6020A	0.43	0.21	0.09	5.0	08/05/16	08/24/16	58.8		

% Solids: 90.6

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project No.:	06261038.0001.00400	**Date Collected:**	7/21/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B12-0-6-072116** **Lab Code:** **K1608325-006**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.040	0.020	0.016	5.0	08/05/16	08/24/16	0.193		J
Copper	6020A	0.079	0.040	0.016	5.0	08/05/16	08/24/16	14.8		
Lead	6020A	0.040	0.010	0.004	5.0	08/05/16	08/24/16	55.2		
Zinc	6020A	0.40	0.20	0.08	5.0	08/05/16	08/24/16	44.2		

% Solids: **90.9**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project No.:	06261038.0001.00400	**Date Collected:**	7/21/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B01-0-12-072116** **Lab Code:** **K1608325-007**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.021	0.017	5.0	08/05/16	08/24/16	0.271		J
Copper	6020A	0.085	0.043	0.017	5.0	08/05/16	08/24/16	6.89		
Lead	6020A	0.043	0.011	0.004	5.0	08/05/16	08/24/16	39.9		
Zinc	6020A	0.43	0.21	0.09	5.0	08/05/16	08/24/16	31.7		

% Solids: **98.8**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608325
Date Collected: 7/21/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B02-0-12-072116 **Lab Code:** K1608325-008

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.044	0.022	0.017	5.0	08/05/16	08/24/16	0.631		J
Copper	6020A	0.087	0.044	0.017	5.0	08/05/16	08/24/16	11.6		
Lead	6020A	0.044	0.011	0.004	5.0	08/05/16	08/24/16	109		
Zinc	6020A	0.44	0.22	0.09	5.0	08/05/16	08/24/16	33.5		

% Solids: 97.4

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608325
Date Collected: 7/21/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B03-0-6-072116 **Lab Code:** K1608325-009

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.047	0.023	0.019	5.0	08/05/16	08/24/16	0.136		J
Copper	6020A	0.093	0.047	0.019	5.0	08/05/16	08/24/16	9.48		
Lead	6020A	0.047	0.012	0.005	5.0	08/05/16	08/24/16	23.6		
Zinc	6020A	0.47	0.23	0.09	5.0	08/05/16	08/24/16	45.5		

% Solids: 87.9

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project No.:	06261038.0001.00400	**Date Collected:**	7/21/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FD072116** **Lab Code:** **K1608325-010**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.044	0.022	0.017	5.0	08/05/16	08/24/16	0.093		J
Copper	6020A	0.087	0.044	0.017	5.0	08/05/16	08/24/16	7.54		
Lead	6020A	0.044	0.011	0.004	5.0	08/05/16	08/24/16	15.0		
Zinc	6020A	0.44	0.22	0.09	5.0	08/05/16	08/24/16	47.2		

% Solids: **82.5**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608325
Date Collected: 7/21/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B04-0-6-072116 **Lab Code:** K1608325-011

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.041	0.021	0.017	5.0	08/05/16	08/24/16	4.23		J
Copper	6020A	0.083	0.041	0.017	5.0	08/05/16	08/24/16	33.0		
Lead	6020A	4.13	1.03	0.413	500.0	08/05/16	08/25/16	1240		
Zinc	6020A	0.41	0.21	0.08	5.0	08/05/16	08/24/16	49.6		

% Solids: 91.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project No.:	06261038.0001.00400	**Date Collected:**	7/21/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B05-0-6-072116** **Lab Code:** **K1608325-012**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.039	0.020	0.016	5.0	08/05/16	08/24/16	0.313		J
Copper	6020A	0.078	0.039	0.016	5.0	08/05/16	08/24/16	13.4		
Lead	6020A	0.039	0.010	0.004	5.0	08/05/16	08/24/16	61.9		
Zinc	6020A	0.39	0.20	0.08	5.0	08/05/16	08/24/16	35.4		

% Solids: **92.1**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608325
Date Collected: 7/21/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B06-0-6-072116 **Lab Code:** K1608325-013

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.042	0.021	0.017	5.0	08/05/16	08/24/16	0.417		J
Copper	6020A	0.084	0.042	0.017	5.0	08/05/16	08/24/16	25.2		
Lead	6020A	0.042	0.010	0.004	5.0	08/05/16	08/24/16	165		
Zinc	6020A	0.42	0.21	0.08	5.0	08/05/16	08/24/16	50.3		

% Solids: 90.6

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Service Request: K1608325
Project No.: 06261038.0001.00400
Date Collected:
Project Name: Closed Castner Firing Range
Date Received:
Matrix: SOIL
Units: mg/Kg
Basis: DRY

Sample Name: Method Blank
Lab Code: KQ1609275-03

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.025	0.020	5.0	08/05/16	08/24/16	0.025	U	J
Copper	6020A	0.100	0.050	0.020	5.0	08/05/16	08/24/16	0.035	J	
Lead	6020A	0.050	0.012	0.005	5.0	08/05/16	08/24/16	0.038	J	
Zinc	6020A	0.50	0.25	0.10	5.0	08/05/16	08/24/16	0.36	J	

% Solids: 100.0

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	25.1	100	25.0	24.6	98	24.8	99	6020A
Copper	12.5	12.9	103	25.0	25.2	101	25.5	102	6020A
Lead	25.0	25.7	103	25.0	25.1	100	24.8	99	6020A
Zinc	25.0	25.3	101	25.0	24.2	97	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	25.4	102	24.7	99	6020A
Copper				25.0	25.0	100	25.5	102	6020A
Lead				25.0	26.2	105	25.0	100	6020A
Zinc				25.0	24.8	99	24.6	98	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99			6020A
Copper				25.0	25.5	102			6020A
Lead				25.0	25.4	102			6020A
Zinc				25.0	24.6	98			6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Lead	25.0	25.6	102	25.0	24.6	98	24.3	97	6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608325

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVS1									
	Antimony	0.104	0.100	104	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Copper	0.178	0.200	89	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Lead	0.102	0.100	102	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Zinc	0.992	1.000	99	80.0 - 120.0	MS	8/24/2016	17:29	082416d
LLCCVS1									
	Antimony	0.129	0.100	129	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Copper	0.191	0.200	96	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Lead	0.108	0.100	108	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Zinc	0.848	1.000	85	70.0 - 130.0	MS	8/24/2016	18:47	082416d
LLCCVS2									
	Antimony	0.098	0.100	98	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Copper	0.202	0.200	101	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Lead	0.102	0.100	102	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Zinc	1.141	1.000	114	70.0 - 130.0	MS	8/24/2016	20:02	082416d
LLICVS1									
	Lead	0.101	0.100	101	80.0 - 120.0	MS	8/25/2016	13:04	082516a
LLCCVS1									
	Lead	0.095	0.100	95	70.0 - 130.0	MS	8/25/2016	13:41	082516a

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.040	U	0.040	U	0.040	U	0.048	J	6020A
Copper	0.040	U	0.040	U	0.040	U	0.040	U	6020A
Lead	0.010	U	0.010	U	0.010	U	0.010	U	6020A
Zinc	0.20	U	0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.040	U	0.040	U			6020A
Copper			0.040	U	0.040	U			6020A
Lead			0.010	U	0.010	U			6020A
Zinc			0.20	U	0.20	U			6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Lead	0.010	U	0.010	U	0.010	U			6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.0	0.0				
Copper	0.0	50.0	0.6	45.6	91			
Lead	0.0		0.1	0.1				
Zinc	0.0	25.0	0.2	21.7	87			

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Lead	0.0		0.1	0.1				

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 87.9

Sample Name: FTBL-SS-B03-0-6-072116S **Lab Code:** K1608325-009S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	46.298		0.136		91.746	50	J	6020A
Copper	84 - 119	51.433		9.478		45.87	91		6020A
Lead	84 - 118	103.170		23.578		91.75	87		6020A
Zinc	82 - 119	132.70		45.46		91.75	95		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 87.9

Sample Name: FTBL-SS-B03-0-6-072116SD **Lab Code:** K1608325-009SD

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	44.417		0.136		88.190	50	J	6020A
Copper	84 - 119	51.041		9.478		44.10	94		6020A
Lead	84 - 118	99.450		23.578		88.19	86		6020A
Zinc	82 - 119	130.63		45.46		88.19	97		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: WATER

Sample Name: FTBL-SS-B03-0-6-072116A **Lab Code:** K1608325-009A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	50.68		0.29		50.0	101		6020A
Copper	75 - 125	66.04		20.33		50.0	91		6020A
Lead	75 - 125	94.413		50.570		50.0	88		6020A
Zinc	75 - 125	142.01		97.50		50.0	89		6020A

Metals

- 6 -

DUPLICATES

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project No.:	06261038.0001.00400	**Units:**	MG/KG
Project Name:	Closed Castner Firing Range	**Basis:**	DRY
Matrix:	SOIL	**% Solids:**	87.9

Sample Name: **FTBL-SS-B03-0-6-072116SD** **Lab Code:** **K1608325-009SD**

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Antimony	20	46.298		44.417		4.1		6020A
Copper	20	51.433		51.041		0.8		6020A
Lead	20	103.170		99.450		3.7		6020A
Zinc	20	132.70		130.63		1.6		6020A

An empty field in the Control Limit column indicates the control limit is not applicable.

Form VI - IN

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	1000.0	1004.3	100					
Copper	500.0	511.4	102					
Lead	1000.0	984.0	98					
Zinc	1000.0	1019.8	102					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **FTBL-SS-B03-0-6-072116L** **Lab Code:** **K1608325-009L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	0.291		0.200	U	100.0		MS
Copper	20.33		21.63		6		MS
Lead	50.57		55.05		9		MS
Zinc	97.50		103.22		6		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-04**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.10	0.05	0.04	MS
Copper	65		0.20	0.10	0.04	MS
Lead	208		0.100	0.025	0.010	MS
Zinc	66		1.00	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	45.000	3000	6020A
Copper	45.000	3000	6020A
Lead	45.000	3000	6020A
Zinc	45.000	3000	6020A

Comments:

Metals

-13-

PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Weight (g)	Final Volume(mL)
K1608325-001	8/5/2016	1.42	100.0
K1608325-002	8/5/2016	1.23	100.0
K1608325-003	8/5/2016	1.29	100.0
K1608325-004	8/5/2016	1.54	100.0
K1608325-005	8/5/2016	1.29	100.0
K1608325-006	8/5/2016	1.39	100.0
K1608325-007	8/5/2016	1.19	100.0
K1608325-008	8/5/2016	1.18	100.0
K1608325-009	8/5/2016	1.22	100.0
K1608325-009S	8/5/2016	1.24	100.0
K1608325-009SD	8/5/2016	1.29	100.0
K1608325-010	8/5/2016	1.39	100.0
K1608325-011	8/5/2016	1.33	100.0
K1608325-012	8/5/2016	1.39	100.0
K1608325-013	8/5/2016	1.32	100.0
KQ1609275-03	8/5/2016	1.00	100.0
KQ1609275-04	8/5/2016	100.0	100.0

Metals
- 14 -
ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Blank	1.0	17:11			X								X		X										X	
Standard 1	1.0	17:14			X								X		X										X	
ICV1	1.0	17:17			X								X		X										X	
CCV1	1.0	17:20			X								X		X										X	
ICB1	1.0	17:23			X								X		X										X	
CCB1	1.0	17:26			X								X		X										X	
LLICVS1	1.0	17:29			X								X		X										X	
ICS-A1	1.0	17:32			X								X		X										X	
ICS-AB1	1.0	17:35			X								X		X										X	
KQ1609275-03	5.0	17:38			X								X		X										X	
K1608325-001	5.0	17:41			X								X		X										X	
K1608325-002	5.0	17:44			X								X		X										X	
K1608325-003	5.0	17:47			X								X		X										X	
K1608325-004	5.0	17:50			X								X		X										X	
K1608325-005	5.0	17:53			X								X		X										X	
K1608325-006	5.0	17:56			X								X		X										X	
K1608325-007	5.0	17:59			X								X		X										X	
K1608325-008	5.0	18:02			X								X		X										X	
CCV2	1.0	18:05			X								X		X										X	
CCB2	1.0	18:08			X								X		X										X	
K1608325-009	5.0	18:11			X								X		X										X	
K1608325-009L	5.0	18:14			X								X		X										X	
ZZZZZZ	1.0	18:17																								
ZZZZZZ	1.0	18:20																								
K1608325-009A	5.0	18:23			X								X		X										X	
K1608325-009S	5.0	18:26			X								X		X										X	
K1608325-009SD	5.0	18:29			X								X		X										X	
KQ1609275-04	5.0	18:32			X								X		X										X	
ZZZZZZ	1.0	18:35																								
K1608325-010	5.0	18:38			X								X		X										X	
CCV3	1.0	18:41			X								X		X										X	
CCB3	1.0	18:44			X								X		X										X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
LLCCVS1	1.0	18:47			X								X		X										X				
K1608325-011	5.0	18:50			X								X												X				
K1608325-012	5.0	18:53			X								X		X										X				
K1608325-013	5.0	18:56			X								X		X										X				
ZZZZZZ	5.0	18:59																												
ZZZZZZ	5.0	19:02																												
ZZZZZZ	5.0	19:05																												
ZZZZZZ	5.0	19:08																												
ZZZZZZ	5.0	19:11																												
ZZZZZZ	5.0	19:14																												
ZZZZZZ	5.0	19:17																												
CCV4	1.0	19:20			X								X		X										X				
CCB4	1.0	19:23			X								X		X										X				
ZZZZZZ	1.0	19:26																												
ZZZZZZ	5.0	19:29																												
ZZZZZZ	5.0	19:32																												
ZZZZZZ	5.0	19:35																												
ZZZZZZ	5.0	19:38																												
ZZZZZZ	5.0	19:41																												
ZZZZZZ	5.0	19:44																												
ZZZZZZ	5.0	19:47																												
ZZZZZZ	5.0	19:50																												
ZZZZZZ	5.0	19:53																												
CCV5	1.0	19:56			X								X		X										X				
CCB5	1.0	19:59			X								X		X										X				
LLCCVS2	1.0	20:02			X								X		X										X				

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Run Number:** 082516a

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/25/2016 **End Date:** 8/25/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
Blank	1.0	12:47													X															
Standard 1	1.0	12:49													X															
ICV2	1.0	12:52													X															
CCV1	1.0	12:55													X															
ICB2	1.0	12:58													X															
CCB1	1.0	13:01													X															
LLICVS1	1.0	13:04													X															
ICS-A1	1.0	13:07													X															
ICS-AB1	1.0	13:10													X															
ZZZZZZ	1.0	13:13																												
ZZZZZZ	1.0	13:16																												
ZZZZZZ	5.0	13:19																												
ZZZZZZ	5.0	13:22																												
K1608325-011	500.0	13:24													X															
CCV2	1.0	13:27													X															
CCB2	1.0	13:30													X															
ZZZZZZ	1.0	13:33																												
LLCCVS1	1.0	13:41													X															

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608325

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
Blank	Blank	1711	100		100		100							
Standard 1	Standard 1	1714	101		101		102							
ICV1	ICV	1717	101		103		100							
CCV1	CCV	1720	101		102		101							
ICB1	ICB	1723	101		102		99							
CCB1	CCB	1726	99		100		100							
LLICVS1	LLICVS1	1729	99		102		100							
ICS-A1	ICSA	1732	85		88		94							
ICS-AB1	ICSAB	1735	87		89		94							
KQ1609275-03	Method Blank	1738	91		93		94							
K1608325-001	FTBL-SS-B07-0-12	1741	90		90		98							
K1608325-002	FTBL-SS-B08-0-12	1744	86		89		97							
K1608325-003	FTBL-SS-B09-0-6-	1747	87		91		96							
K1608325-004	FTBL-SS-B10-0-6-	1750	83		88		96							
K1608325-005	FTBL-SS-B11-0-6-	1753	85		90		95							
K1608325-006	FTBL-SS-B12-0-6-	1756	85		88		96							
K1608325-007	FTBL-SS-B01-0-12	1759	101		99		106							
K1608325-008	FTBL-SS-B02-0-12	1802	102		99		108							
CCV2	CCV	1805	103		105		103							
CCB2	CCB	1808	102		102		101							
K1608325-009	FTBL-SS-B03-0-6-	1811	89		92		100							
K1608325-009L	FTBL-SS-B03-0-6-	1814	95		98		99							
ZZZZZZ	ZZZZZZ	1817												
ZZZZZZ	ZZZZZZ	1820												
K1608325-009A	FTBL-SS-B03-0-6-	1823	91		91		102							
K1608325-009S	FTBL-SS-B03-0-6-	1826	88		91		101							
K1608325-009SD	FTBL-SS-B03-0-6-	1829	87		92		103							
KQ1609275-04	Lab Control	1832	91		95		98							
ZZZZZZ	ZZZZZZ	1835												
K1608325-010	FD072116	1838	87		91		100							
CCV3	CCV	1841	98		95		94							
CCB3	CCB	1844	98		99		101							
LLCCVS1	LLCCVS1	1847	101		102		103							
K1608325-011	FTBL-SS-B04-0-6-	1850	102		102		110							
K1608325-012	FTBL-SS-B05-0-6-	1853	101		101		108							
K1608325-013	FTBL-SS-B06-0-6-	1856	103		101		107							
ZZZZZZ	ZZZZZZ	1859												
ZZZZZZ	ZZZZZZ	1902												
ZZZZZZ	ZZZZZZ	1905												
ZZZZZZ	ZZZZZZ	1908												
ZZZZZZ	ZZZZZZ	1911												
ZZZZZZ	ZZZZZZ	1914												
ZZZZZZ	ZZZZZZ	1917												
CCV4	CCV	1920	109		108		107							

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608325

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
CCB4	CCB	1923	108		109		106							
ZZZZZZ	ZZZZZZ	1926												
ZZZZZZ	ZZZZZZ	1929												
ZZZZZZ	ZZZZZZ	1932												
ZZZZZZ	ZZZZZZ	1935												
ZZZZZZ	ZZZZZZ	1938												
ZZZZZZ	ZZZZZZ	1941												
ZZZZZZ	ZZZZZZ	1944												
ZZZZZZ	ZZZZZZ	1947												
ZZZZZZ	ZZZZZZ	1950												
ZZZZZZ	ZZZZZZ	1953												
CCV5	CCV	1956	109		106		105							
CCB5	CCB	1959	108		107		106							
LLCCVS2	LLCCVS2	2002	107		108		108							

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608325

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/25/2016 End Date: 08/25/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Lu-K2_17	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
Blank	Blank	1247	100											
Standard 1	Standard 1	1249	100											
ICV2	ICV	1252	100											
CCV1	CCV	1255	101											
ICB2	ICB	1258	100											
CCB1	CCB	1301	100											
LLICVS1	LLICVS1	1304	100											
ICS-A1	ICSA	1307	94											
ICS-AB1	ICSAB	1310	94											
ZZZZZZ	ZZZZZZ	1313												
ZZZZZZ	ZZZZZZ	1316												
ZZZZZZ	ZZZZZZ	1319												
ZZZZZZ	ZZZZZZ	1322												
K1608325-011	FTBL-SS-B04-0-6-[illegible]	1324	97											
CCV2	CCV	1327	99											
CCB2	CCB	1330	97											
ZZZZZZ	ZZZZZZ	1333												
LLCCVS1	LLCCVS1	1341	99											

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project No.:	06261038.0001.00400	**Date Collected:**	7/21/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **EB072116** **Lab Code:** **K1608325-014**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	08/02/16	08/03/16	0.012	J	
Copper	6020A	0.10	0.05	0.02	1.0	08/02/16	08/03/16	0.13		
Lead	6020A	0.020	0.010	0.004	1.0	08/02/16	08/03/16	0.022		
Zinc	6020A	0.5	0.5	0.2	1.0	08/04/16	08/05/16	0.4	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: WATER

Service Request: K1608325
Date Collected:
Date Received:
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1609039-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	08/02/16	08/03/16	0.012	U	
Copper	6020A	0.10	0.05	0.02	1.0	08/02/16	08/03/16	0.05	J	
Lead	6020A	0.020	0.010	0.004	1.0	08/02/16	08/03/16	0.004	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608325
Project No.:	06261038.0001.00400	**Date Collected:**	
Project Name:	Closed Castner Firing Range	**Date Received:**	
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **Method Blank** **Lab Code:** **KQ1609201-01**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Zinc	**6020A**	**0.5**	**0.5**	**0.2**	**1.0**	**08/04/16**	**08/05/16**	**0.5**	**U**	

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	26.1	104	25.0	24.8	99	25.1	100	6020A
Copper	12.5	12.4	99	25.0	25.0	100	25.2	101	6020A
Lead	25.0	25.2	101	25.0	25.0	100	25.4	102	6020A
Zinc	25.0	25.5	102	25.0	25.2	101	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99	24.8	99	6020A
Copper				25.0	25.5	102	25.5	102	6020A
Lead				25.0	25.1	100	25.4	102	6020A
Zinc				25.0	24.8	99			6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.7	99			6020A
Copper				25.0	25.2	101			6020A
Lead				25.0	25.1	100			6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608325

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVW1									
	Antimony	0.051	0.05	102	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Copper	0.101	0.10	101	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Lead	0.020	0.02	100	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
LLCCVW1									
	Antimony	0.046	0.05	92	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Copper	0.090	0.10	90	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Lead	0.020	0.02	100	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
LLCCVW2									
	Antimony	0.057	0.05	114	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Copper	0.106	0.10	106	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Lead	0.024	0.02	120	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
LLICVW1									
	Zinc	0.44	0.50	88	80.0 - 120.0	MS	8/5/2016	05:59	080516AMS
LLCCVW1									
	Zinc	0.47	0.50	94	70.0 - 130.0	MS	8/5/2016	06:43	080516AMS

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.012	J	0.006	U	0.020	J	0.006	U	6020A
Copper	0.02	U	0.02	U	0.02	U	0.02	U	6020A
Lead	0.005	J	0.004	U	0.008	J	0.007	J	6020A
Zinc	0.2	U	0.2	U	0.2	U	0.2	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.006	U	0.013	J			6020A
Copper			0.02	U	0.02	U			6020A
Lead			0.008	J	0.006	J			6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.06	0.04				
Copper	0.0	50.0	2.38	47.7	95			
Lead	0.0		0.17	0.14				
Zinc	0.0	25.0	2.04	26.4	106			

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** NA

Matrix: WATER

Sample Name: Batch QC1A **Lab Code:** K1608011-007A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Zinc	75 - 125	22.49		0.30	J	20.0	111		6020A

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** NA

Matrix: WATER

Sample Name: EB072116A **Lab Code:** K1608325-014A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	21.680		0.012	J	20.0	108		6020A
Copper	75 - 125	22.09		0.13		20.0	110		6020A
Lead	75 - 125	21.666		0.022		20.0	108		6020A

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	50.1	100					
Copper	12.5	12.6	101					
Lead	50	50.1	100					
Zinc	25	23.9	96					

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	49.8	100					
Copper	12.5	12.7	102					
Lead	50	49.4	99					
Zinc	25	24.4	98					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **Batch QC1L** **Lab Code:** **K1608011-007L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Zinc	0.30	J	2.19	J	630		MS

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **EB072116L** **Lab Code:** **K1608325-014L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	0.012	J	0.030	U	100.0		MS
Copper	0.13		0.10	U	100.0		MS
Lead	0.022		0.029	J	32		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-03**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.050	0.013	0.006	MS
Copper	65		0.10	0.05	0.02	MS
Lead	208		0.020	0.010	0.004	MS
Zinc	66		0.50	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	15.000	2000	6020A
Copper	15.000	2000	6020A
Lead	15.000	2000	6020A
Zinc	15.000	2000	6020A

Comments:

Metals

-13-

PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608325-014	8/2/2016	25.0	25.0
KQ1609039-01	8/2/2016	25.0	25.0
KQ1609039-02	8/2/2016	25.0	25.0
KQ1609039-02Dup	8/2/2016	25.0	25.0

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608325-014	8/4/2016	25.0	25.0
KQ1609201-01	8/4/2016	25.0	25.0
KQ1609201-02	8/4/2016	25.0	25.0
KQ1609201-03	8/4/2016	25.0	25.0

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
Cal. Blk	1.0	11:58			X								X		X														
Cal. Stn	1.0	12:05			X								X		X														
ICV1	1.0	12:08			X								X		X														
CCV1	1.0	12:13			X								X		X														
ZZZZZZ	1.0	12:20																											
ICB1	1.0	12:24			X								X		X														
CCB1	1.0	12:28			X								X		X														
LLICVW1	1.0	12:32			X								X		X														
ZZZZZZ	1.0	12:35																											
ICS-A1	1.0	12:43			X								X		X														
ICS-AB1	1.0	12:46			X								X		X														
ZZZZZZ	1.0	12:50																											
ZZZZZZ	1.0	13:06																											
ZZZZZZ	1.0	13:10																											
ZZZZZZ	1.0	13:14																											
ZZZZZZ	5.0	13:18																											
ZZZZZZ	1.0	13:22																											
ZZZZZZ	1.0	13:25																											
ZZZZZZ	1.0	13:29																											
ZZZZZZ	1.0	13:33																											
CCV2	1.0	13:36			X								X		X														
CCB2	1.0	13:44			X								X		X														
ZZZZZZ	1.0	13:48																											
ZZZZZZ	1.0	13:52																											
ZZZZZZ	1.0	13:55																											
ZZZZZZ	1.0	13:59																											
ZZZZZZ	1.0	14:03																											
ZZZZZZ	1.0	14:07																											
ZZZZZZ	1.0	14:10																											
ZZZZZZ	1.0	14:14																											
ZZZZZZ	1.0	14:17																											
CCV3	1.0	14:21			X								X		X														

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
ZZZZZZ	1.0	14:30																												
CCB3	1.0	14:34			X								X		X															
LLCCVW1	1.0	14:37			X								X		X															
ZZZZZZ	1.0	14:41																												
ZZZZZZ	1.0	14:45																												
ZZZZZZ	1.0	14:50																												
ZZZZZZ	1.0	14:55																												
ZZZZZZ	5.0	14:59																												
ZZZZZZ	1.0	15:02																												
ZZZZZZ	1.0	15:06																												
ZZZZZZ	1.0	15:10																												
ZZZZZZ	1.0	15:14																												
CCV4	1.0	15:17			X								X		X															
ZZZZZZ	1.0	15:27																												
CCB4	1.0	15:30			X								X		X															
KQ1609039-01	1.0	15:34			X								X		X															
KQ1609039-02	1.0	15:37			X								X		X															
KQ1609039-02	1.0	15:43			X								X		X															
K1608325-014	1.0	15:49			X								X		X															
K1608325-014L	5.0	15:53			X								X		X															
K1608325-014A	1.0	15:56			X								X		X															
ZZZZZZ	1.0	16:00																												
CCV5	1.0	16:04			X								X		X															
CCB5	1.0	16:13			X								X		X															
LLCCVW2	1.0	16:17			X								X		X															

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608325

Project No.: 06261038.0001.00400 **Run Number:** 080516AMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/5/2016 **End Date:** 8/5/2016

Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Cal. Blk	1.0	05:39																							X	
Cal. Stn	1.0	05:42																							X	
ICV1	1.0	05:44																							X	
CCV1	1.0	05:46																							X	
ICB1	1.0	05:48																							X	
CCB1	1.0	05:57																							X	
LLICVW1	1.0	05:59																							X	
ZZZZZZ	1.0	06:01																								
ICS-A1	1.0	06:05																							X	
ICS-AB1	1.0	06:08																							X	
KQ1609201-01	1.0	06:10																							X	
KQ1609201-02	1.0	06:12																							X	
KQ1609201-03	1.0	06:14																							X	
ZZZZZZ	1.0	06:16																								
K1608011-007L	5.0	06:19																							X	
K1608011-007A	1.0	06:21																							X	
CCV2	1.0	06:23																							X	
CCB2	1.0	06:25																							X	
ZZZZZZ	1.0	06:28																								
ZZZZZZ	1.0	06:30																								
ZZZZZZ	1.0	06:32																								
K1608325-014	1.0	06:34																							X	
ZZZZZZ	1.0	06:37																								
CCV3	1.0	06:39																							X	
CCB3	1.0	06:41																							X	
LLCCVW1	1.0	06:43																							X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608325

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
Cal. Blk	Cal. Blk	1158	100		100		100		100		100		100	
Cal. Stn	Cal. Stn	1205	97		99		100		100		101		102	
ICV1	ICV1	1208	96		99		100		100		100		102	
CCV1	CCV1	1213	103		99		100		100		101		101	
ZZZZZZ	ZZZZZZ	1220												
ICB1	ICB1	1224	107		100		100		101		100		100	
CCB1	CCB1	1228	107		101		100		101		101		100	
LLICVW1	LLICVW1	1232	103		99		99		100		100		100	
ZZZZZZ	ZZZZZZ	1235												
ICS-A1	ICSA	1243	100		95		94		90		92		93	
ICS-AB1	ICSAB	1246	103		97		95		92		95		97	
ZZZZZZ	ZZZZZZ	1250												
ZZZZZZ	ZZZZZZ	1306												
ZZZZZZ	ZZZZZZ	1310												
ZZZZZZ	ZZZZZZ	1314												
ZZZZZZ	ZZZZZZ	1318												
ZZZZZZ	ZZZZZZ	1322												
ZZZZZZ	ZZZZZZ	1325												
ZZZZZZ	ZZZZZZ	1329												
ZZZZZZ	ZZZZZZ	1333												
CCV2	CCV2	1336	95		95		97		99		99		101	
CCB2	CCB2	1344	99		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1348												
ZZZZZZ	ZZZZZZ	1352												
ZZZZZZ	ZZZZZZ	1355												
ZZZZZZ	ZZZZZZ	1359												
ZZZZZZ	ZZZZZZ	1403												
ZZZZZZ	ZZZZZZ	1407												
ZZZZZZ	ZZZZZZ	1410												
ZZZZZZ	ZZZZZZ	1414												
ZZZZZZ	ZZZZZZ	1417												
CCV3	CCV3	1421	102		98		98		98		98		99	
ZZZZZZ	ZZZZZZ	1430												
CCB3	CCB3	1434	104		99		100		101		100		99	
LLCCVW1	LLCCVW1	1437	103		100		99		101		100		99	
ZZZZZZ	ZZZZZZ	1441												
ZZZZZZ	ZZZZZZ	1445												
ZZZZZZ	ZZZZZZ	1450												
ZZZZZZ	ZZZZZZ	1455												
ZZZZZZ	ZZZZZZ	1459												
ZZZZZZ	ZZZZZZ	1502												
ZZZZZZ	ZZZZZZ	1506												
ZZZZZZ	ZZZZZZ	1510												
ZZZZZZ	ZZZZZZ	1514												

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608325

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
CCV4	CCV4	1517	98		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1527												
CCB4	CCB4	1530	106		101		101		101		100		99	
KQ1609039-01	Method Blank	1534	101		98		98		98		98		98	
KQ1609039-02	Lab Control	1537	103		98		98		99		99		99	
KQ1609039-02Dup	Lab Control	1543	103		99		98		99		98		97	
K1608325-014	EB072116	1549	101		96		97		97		96		96	
K1608325-014L	EB072116L	1553	101		99		97		99		98		98	
K1608325-014A	EB072116A	1556	105		98		98		98		98		98	
ZZZZZZ	ZZZZZZ	1600												
CCV5	CCV5	1604	103		99		99		99		99		100	
CCB5	CCB5	1613	106		102		100		100		99		97	
LLCCVW2	LLCCVW2	1617	107		101		101		101		100		98	

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608325

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/05/2016 End Date: 08/05/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ga_71	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
Cal. Blk	Cal. Blk	0539	100											
Cal. Stn	Cal. Stn	0542	102											
ICV1	ICV1	0544	101											
CCV1	CCV1	0546	101											
ICB1	ICB1	0548	101											
CCB1	CCB1	0557	99											
LLICVW1	LLICVW1	0559	98											
ZZZZZZ	ZZZZZZ	0601												
ICS-A1	ICSA	0605	93											
ICS-AB1	ICSAB	0608	93											
KQ1609201-01	Method Blank	0610	94											
KQ1609201-02	Lab Control	0612	95											
KQ1609201-03	Duplicate Lab	0614	95											
ZZZZZZ	ZZZZZZ	0616												
K1608011-007L	Batch QC1L	0619	95											
K1608011-007A	Batch QC1A	0621	95											
CCV2	CCV2	0623	95											
CCB2	CCB2	0625	95											
ZZZZZZ	ZZZZZZ	0628												
ZZZZZZ	ZZZZZZ	0630												
ZZZZZZ	ZZZZZZ	0632												
K1608325-014	EB072116	0634	93											
ZZZZZZ	ZZZZZZ	0637												
CCV3	CCV3	0639	95											
CCB3	CCB3	0641	95											
LLCCVW1	LLCCVW1	0643	96											

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Benchsheet

Service Request #:	**K1608325, KQ1609163, K1608410, K1608625, K1608415**	**Run #:**	**508288**
Test:	**TS**	**Balance ID:**	**K-Balance-16**
Method:	**160.3 Modified**		

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1608325-001	1.31	10.00	10.41	9.10	91.0	
	K1608325-002	1.30	12.86	13.78	12.5	97.0	
	K1608325-003	1.30	12.83	13.08	11.8	91.8	
	K1608325-004	1.30	11.74	11.60	10.3	87.7	
	K1608325-005	1.31	11.42	11.66	10.4	90.6	
	K1608325-006	1.30	11.03	11.33	10.0	90.9	
	K1608325-007	1.30	12.39	13.54	12.2	98.8	
	K1608325-008	1.28	11.37	12.36	11.1	97.4	
	K1608325-009	1.30	12.86	12.60	11.3	87.9	
	K1608325-009DUP	1.31	11.91	11.70	10.4	87.2	<1
	K1608325-010	1.29	14.42	13.18	11.9	82.5	
	K1608325-011	1.29	14.33	14.33	13.0	91.0	
	K1608325-012	1.30	12.98	13.26	12.0	92.1	
	K1608325-013	1.31	10.97	11.25	9.94	90.6	
	K1608410-001	1.29	8.00	3.31	2.02	25.2	
	K1608410-001DUP	1.29	8.22	3.37	2.08	25.3	<1
	K1608625-001	1.29	16.98	2.49	1.20	7.07	
	K1608415-001	1.29	16.45	12.30	11.0	66.9	
	K1608415-002	1.30	15.70	13.99	12.7	80.8	
	K1608415-003	1.30	15.97	14.08	12.8	80.0	
	K1608415-004	1.30	15.38	12.76	11.5	74.5	
	K1608415-005	1.29	18.64	15.61	14.3	76.8	

	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
Oven1	**K-OVEN 07**	**105**	**105**	**8/3/2016**	**13:03**	**8/4/2016**	**08:29**	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	**K-Balance-16**	**1.00, 100.01**	**1.00, 100.01**	**8/3/2016**	**12:36**	**8/3/2016**	**13:03**
Calibration2	**K-Balance-16**	**1.00, 100.02**	**0.99, 100.01**	**8/4/2016**	**08:47**	**8/4/2016**	**08:53**

Comments: ZR Reviewed 8-4-16 L.J.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 267975 **Prep Workflow:** MetDigSICP **Status:** Prepped **Prep Date:** 08/05/2016 12:50
Team: Metals **Prep Method:** EPA 3050B **Current Step:** Digestion **Due Date:** 08/08/2016
Analyst: AURBAN **Rush/NPDES:** N/A **Hold Date:** 01/17/2017

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1609275-03	Method Blank		1.00 g	As Received.	100 mL			10% HNO3, 10% HCl
KQ1609275-04	Lab Control Sample		1.01 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608325-001	FTBL-SS-B07-0-12-072116	.01	1.42 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-002	FTBL-SS-B08-0-12-072116	.01	1.23 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-003	FTBL-SS-B09-0-6-072116	.01	1.29 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-004	FTBL-SS-B10-0-6-072116	.01	1.54 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-005	FTBL-SS-B11-0-6-072116	.01	1.29 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-006	FTBL-SS-B12-0-6-072116	.01	1.39 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-007	FTBL-SS-B01-0-12-072116	.01	1.19 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-008	FTBL-SS-B02-0-12-072116	.01	1.18 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-009	FTBL-SS-B03-0-6-072116	.01	1.22 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-009: KQ1609275-01	Matrix Spike	.01	1.24 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608325-009: KQ1609275-02	Duplicate Matrix Spike	.01	1.29 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174153 174221 174411 174614	10% HNO3, 10% HCl
K1608325-010	FD072116	.01	1.39 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-011	FTBL-SS-B04-0-6-072116	.01	1.33 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-012	FTBL-SS-B05-0-6-072116	.01	1.39 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608325-013	FTBL-SS-B06-0-6-072116	.01	1.32 g	As Received.	100 mL			10% HNO3, 10% HCl

17 Total Samples consisting of 13 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET SS1	Spike	174411	7/12/2017	K-MET SS4	Spike	174221	10/14/2016
K-MET SS3	Spike	174614	3/18/2017	K-MET SS5	Spike	174153	1/28/2017

Preparation Materials

Step	Name	ID
Digestion	Teflon Chips	69101
Digestion	K-MET HCL	87502
Digestion	K-MET HNO3	87968

Step	Name	ID
Digestion	K-MET 100ml Centrifuge Tube	172987
Digestion	K-MET H2O2	174426

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-Balance-02	Date Checked	8/5/16	
Digestion	K-BlockDigester-02	Corrected Temperature	95.0	deg C
Digestion	K-BlockDigester-02	Correction Factor	0.0	deg C

Step	Name	Property	Value	
Digestion	K-BlockDigester-02	Observed Temperature	95.0	deg C
Digestion	K-BlockDigester-02	Thermometer ID 1107973		NONE
Digestion	K-BlockDigester-02	Thermometer Location	31	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	05-AUG-16 12:50	05-AUG-16 14:57	AURBAN		N	

Comments

First reflux on at 1250 off at 1305. second reflux on at 1310 off at 1410. HCl reflux onat 1442 off at 1457.

Review

Reviewed by: _____ Date: 8/8/16

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
*** Add after HNO3	Mn	100*	1000ml	50	
and before ALS-S9	Ni	100*	1000ml	50	
when making the	Sb***	50	1000ml	50	
solution	V	100*	1000ml	50	
	Zn	100*	1000ml	50	
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	50	500ml	100	
	Mo	50	500ml	100	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	

K-MET GFLCSW	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.
** Denotes 10,000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

Service Request # K1608325
Calibration 082416DMS04
QC in calibration 082416DMS04
QC Service Request # K1608325
STARLIMS run # 511491

CAL STD	MS20-83-G	ICSA STD	MS20-83-H
ICV STD	MS20-72-E	ICSAB STD	MS20-83-I
LLICV STD	MS20-72-F		
Internal STD	MS20-58-A		

6020 DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD limit?	X		
12. Spikes within DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?		X	
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?	X		
21. Cd Correction Applied?		X	
22. Was run prematurely stopped, If so why?		X	

Comments: LRSTD : 1000ppb
#11 needs dilution for Pb.

Primary Review by JDB Date 3/25/16
Secondary Review by [signature] Date 5/25/16

Data Review Form

Service Request #: **K1608325**
Instrument ID#: **K-ICP-MS-04**
DataFile Name: **R:\ICP\WIP\DATA\K-ICP-MS-04 (NexION)\082416d.txt**
RUNNO: **511491**

K1608325-009MS - Metals T
MS Recovery
6020A/Metals T - Sb-KED2 - Recovery: 50 Limits: 72 - 124

K1608325-009DMS - Metals T
DMS Recovery
6020A/Metals T - Sb-KED2 - Recovery: 50 Limits: 72 - 124

SD, PS, LCSW pass.

Analytical Method 6020A

Primary Approver: JDB 8/25/16

Secondary Approver: J 8/25/16

Dataset Report

User Name: ALKLS.ALKLSXP373
Computer Name: ALKLSXP373
Dataset File Path: C:\NexION Data\DataSet\082416D\
Report Date/Time: Thursday, August 25, 2016 11:24:35

The Dataset

Sample ID	Date and Time	Read Type	Description	Batch ID	Samp. File Name
RINSE	17:08:50 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\RINSE.001
Blank	17:11:50 Wed 24-Aug-16	Blank			C:\NexION Data\DataSet\082416D\Blank.002
Standard 1	17:14:49 Wed 24-Aug-16	Standard #1			C:\NexION Data\DataSet\082416D\Standard 1
ICV	17:17:47 Wed 24-Aug-16	QC Std #1			C:\NexION Data\DataSet\082416D\ICV.004
CCV	17:20:47 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.005
ICB	17:23:46 Wed 24-Aug-16	QC Std #3			C:\NexION Data\DataSet\082416D\ICB.006
CCB	17:26:46 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.007
LLICVS	17:29:46 Wed 24-Aug-16	QC Std #5			C:\NexION Data\DataSet\082416D\LLICVS.00
ICSA	17:32:44 Wed 24-Aug-16	QC Std #7			C:\NexION Data\DataSet\082416D\ICSA.009
ICSAB	17:35:43 Wed 24-Aug-16	QC Std #8			C:\NexION Data\DataSet\082416D\ICSAB.010
KQ1609275-03	17:38:44 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
K1608325-001	17:41:43 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-002	17:44:42 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-003	17:47:41 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-004	17:50:40 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-005	17:53:39 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-006	17:56:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-007	17:59:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-008	18:02:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
CCV	18:05:38 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.020
CCB	18:08:37 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.021
K1608325-009	18:11:39 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009L	18:14:38 Wed 24-Aug-16	Sample	25		C:\NexION Data\DataSet\082416D\K1608325-
1000ppb LR	18:17:38 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\1000ppb LI
RINSE	18:20:39 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\RINSE.025
K1608325-009A	18:23:39 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009S	18:26:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-009SD	18:29:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
KQ1609275-04	18:32:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
MO STD	18:35:37 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\MO STD.0
K1608325-010	18:38:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
CCV	18:41:38 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.032
CCB	18:44:37 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.033
LLCCVS	18:47:37 Wed 24-Aug-16	QC Std #6			C:\NexION Data\DataSet\082416D\LLCCVS.0
K1608325-011	18:50:38 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-012	18:53:37 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
K1608325-013	18:56:36 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608325-
KQ1609274-01	18:59:35 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
K1608207-003	19:02:34 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003L	19:05:33 Wed 24-Aug-16	Sample	25		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003A	19:08:32 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003S	19:11:32 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-003SD	19:14:31 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
KQ1609274-02	19:17:30 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\KQ160927
CCV	19:20:30 Wed 24-Aug-16	QC Std #2			C:\NexION Data\DataSet\082416D\CCV.045
CCB	19:23:30 Wed 24-Aug-16	QC Std #4			C:\NexION Data\DataSet\082416D\CCB.046
MO STD	19:26:29 Wed 24-Aug-16	Sample			C:\NexION Data\DataSet\082416D\MO STD.0
K1608207-004	19:29:30 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-005	19:32:29 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-
K1608207-006	19:35:28 Wed 24-Aug-16	Sample	5		C:\NexION Data\DataSet\082416D\K1608207-

K1608207-010	19:38:27 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608207-011	19:41:26 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608207-012	19:44:25 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608207-013	19:47:24 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608207-014	19:50:23 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608207-
K1608210-003	19:53:22 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
CCV	19:56:24 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.057
CCB	19:59:24 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.058
LLCCVS	20:02:24 Wed 24-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.0
K1608210-004	20:05:25 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-005	20:08:24 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-006	20:11:23 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-010	20:14:22 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-011	20:17:21 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-012	20:20:20 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-013	20:23:19 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
K1608210-014	20:26:18 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608210-
KQ1609920-03	20:29:17 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\KQ160992
K1608344-002	20:32:16 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
CCV	20:35:18 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.070
CCB	20:38:17 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.071
K1608344-003	20:41:19 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-004	20:44:18 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-005	20:47:17 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-008	20:50:16 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-009	20:53:15 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-010	20:56:14 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-011	20:59:13 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-011L	21:02:12 Wed 24-Aug-16	Sample	25	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-011A	21:05:11 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexION Data\DataSet\082416D\K1608344-
K1608344-011S	21:08:09 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
CCV	21:11:10 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.082
CCB	21:14:10 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.083
LLCCVS	21:17:09 Wed 24-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.0
K1608344-011SD	21:20:10 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
KQ1609920-04	21:23:09 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\KQ160992
MO STD	21:26:10 Wed 24-Aug-16	Sample		C:\NexION Data\DataSet\082416D\MO STD.0
K1608344-012	21:29:11 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608344-
KQ1609300-03	21:32:10 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\KQ160930
K1608209-004	21:35:09 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-005	21:38:10 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-006	21:41:08 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-007	21:44:08 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-010	21:47:07 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
CCV	21:50:07 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.095
CCV	21:52:26 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.096
CCB	21:55:25 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.097
K1608209-010L	21:58:26 Wed 24-Aug-16	Sample	25	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-010A	22:01:25 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-010S	22:04:24 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-010SD	22:07:23 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
KQ1609300-04	22:10:22 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\KQ160930
MO STD	22:13:24 Wed 24-Aug-16	Sample		C:\NexION Data\DataSet\082416D\MO STD.1
K1608209-011	22:16:25 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-012	22:19:24 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-013	22:22:23 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
K1608209-014	22:25:22 Wed 24-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
CCV	22:28:23 Wed 24-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.108
CCB	22:31:22 Wed 24-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.109
LLCCVS	22:34:22 Wed 24-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.1

K1608209-005	09:25:53 Thu 25-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
CCV	09:28:54 Thu 25-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.112
CCB	09:31:53 Thu 25-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.113
LLCCVS	09:34:53 Thu 25-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.1
LLCCVS	09:37:11 Thu 25-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.1
LLCCVS	09:45:34 Thu 25-Aug-16	Sample		C:\NexION Data\DataSet\082416D\LLCCVS.1

SmartTune Wizard - Details

)ptimization Details

;martTune file: C:\NexIONData\Wizard\SmartTune\CAS SmartTune Full FAST.swz

)ptimization Status

;tart Time: 8/24/2016 10:24:21 AM

lass Calibration and Resolution
Optimization Settings:
Method: C:\NexIONData\Method\CAS Tuning.mth.
MassCal File: C:\NexIONData\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.1 for Mass Cal. and 0.1 for Resolution
Peak height (%) for Res. Opt.: 5

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.704)
Target/Obtained mass (9.0122/9.075), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.700)
Target/Obtained mass (58.9332/58.925), Target/Obtained resolution (0.7/0.692)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.684)
Target/Obtained mass (139.905/139.925), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (207.977/207.975), Target/Obtained resolution (0.7/0.695)
Target/Obtained mass (208.98/208.975), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.694)
Passed] Optimum value(s): N/A

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Wednesday, August 24, 2016 10:28:39
Sample Description:
Method File: C:\NexION Data\Method\CAS Daily Performance.mth
Dataset File: C:\NexION Data\Dataset\Default\Daily Performance Check.3538
MassCal File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Li	7.0	28977.1	28977.093	224.933	0.8	Standard
	Be	9.0	9171.5	9171.478	210.427	2.3	Standard
	Mg	24.0	27457.0	27457.035	520.912	1.9	Standard
	Co	58.9	29211.7	29211.711	545.363	1.9	Standard
	In	114.9	62607.9	62607.857	1090.759	1.7	Standard
	Pb	208.0	46834.1	46834.063	274.246	0.6	Standard
	Bi	209.0	37192.9	37192.893	507.538	1.4	Standard
	U	238.1	43013.5	43013.464	453.345	1.1	Standard
⌈	CeO	155.9	779.9	0.017	0.001	4.1	Standard
| >	Ce	139.9	45218.5	45218.523	413.726	0.9	Standard
⌊	Ce++	70.0	932.4	0.021	0.001	3.8	Standard
	Bkgd	220.0	0.0	0.000	0.000		Standard

Replicates

Repeat 1

Analyte	Mass	Meas. Intensity
Li	7	29031.469
Be	9	9361.733
Mg	24	27615.332
Co	59	28951.975
In	115	64276.276
Pb	208	47208.808
Bi	209	37692.994
U	238	42650.238
CeO	156	777.354
Ce	140	44997.422
Ce++	70	927.363
Bkgd	220	0.000

Repeat 2

Analyte	Mass	Meas. Intensity
Li	7	29141.025
Be	9	9108.236
Mg	24	26532.616
Co	59	28640.681
In	115	61917.224
Pb	208	46594.984
Bi	209	37748.474
U	238	42578.023
CeO	156	757.353
Ce	140	44627.598
Ce++	70	934.031
Bkgd	220	0.000

Repeat 3

Analyte	Mass	Meas. Intensity
Li	7	29227.201
Be	9	9417.770
Mg	24	27790.338
Co	59	30092.328
In	115	62519.840

Pb	208	47038.174
Bi	209	37085.407
U	238	43216.603
CeO	156	839.358
Ce	140	45696.302
Ce++	70	991.368
Bkgd	220	0.000

Repeat 4

Analyte	Mass	Meas. Intensity
Li	7	28730.862
Be	9	8927.455
Mg	24	27696.155
Co	59	29285.320
In	115	62902.849
Pb	208	46708.146
Bi	209	36791.315
U	238	42935.758
CeO	156	778.688
Ce	140	45420.759
Ce++	70	920.696
Bkgd	220	0.000

Repeat 5

Analyte	Mass	Meas. Intensity
Li	7	28754.910
Be	9	9042.194
Mg	24	27650.734
Co	59	29088.251
In	115	61423.098
Pb	208	46620.206
Bi	209	36646.276
U	238	43686.696
CeO	156	746.686
Ce	140	45350.536
Ce++	70	888.694
Bkgd	220	0.000

Current Conditions File Data

Current Value	Description
0.87	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
16.00	Plasma Gas Flow
-9.50	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-14.50	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.87	DRC Mode NEB
-6.50	DRC Mode QRO
-1.50	DRC Mode CRO
-10.00	DRC Mode Cell Entrance/Exit Voltage
3.50	Cell Gas A
0.00	Cell Gas B
280.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-40.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

LABWORKS - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, August 24, 2016 17:11:50
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\Blank.002
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.0	32.8			ppb
|	Cu-KED3	65	13.0	35.3			ppb
|	Zn-KED3	66	7.3	41.7			ppb
⌊>	Ge-KED3	72	13511.1	1.9			ppb
⌈>	In-KED2	115	14199.0	2.3			ppb
|	Sb-KED2	121	42.7	39.0			ppb
⌊	Sb-KED2	123	27.6	18.6			ppb
⌈>	Lu-KED2	175	53932.4	3.5			ppb
⌊	Pb-KED2	208	22.0	9.1			ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, August 24, 2016 17:14:49
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\Standard 1.003
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16807.2	1.4	25.00000	1.4	ppb
|	Cu-KED3	65	8560.9	2.8	25.00000	1.3	ppb
|	Zn-KED3	66	1556.4	4.3	25.00000	4.6	ppb
⌊>	Ge-KED3	72	13608.8	2.5			ppb
⌈>	In-KED2	115	14381.4	0.7			ppb
|	Sb-KED2	121	9195.6	3.3	25.00000	4.0	ppb
⌊	Sb-KED2	123	7378.3	0.3	25.00000	1.0	ppb
⌈>	Lu-KED2	175	55017.8	3.0			ppb
⌊	Pb-KED2	208	137772.3	1.9	25.00000	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICV
Sample Date/Time: Wednesday, August 24, 2016 17:17:47
Sample Description:
Autosampler Position: 3
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICV.004
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	8589.9	2.5	12.78956	2.9	ppb
	Cu-KED3	65	4412.3	1.1	12.89705	1.0	ppb
	Zn-KED3	66	1572.1	2.8	25.30139	1.6	ppb
>	Ge-KED3	72	13577.8	1.6			ppb
>	In-KED2	115	14638.3	3.0			ppb
	Sb-KED2	121	9479.1	1.7	25.33934	4.7	ppb
	Sb-KED2	123	7544.5	1.2	25.12285	1.8	ppb
>	Lu-KED2	175	54101.6	1.2			ppb
	Pb-KED2	208	139481.6	0.5	25.72290	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	102				
	Cu-KED3	65	103				
	Zn-KED3	66	101				
>	Ge-KED3	72		100			
>	In-KED2	115		103			
	Sb-KED2	121	101				
	Sb-KED2	123	100				
>	Lu-KED2	175		100			
	Pb-KED2	208	103				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 17:20:47
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\CCV.005
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16960.7	2.6	25.10516	2.6	ppb
|	Cu-KED3	65	8668.6	3.4	25.19456	3.0	ppb
|	Zn-KED3	66	1512.7	4.2	24.17422	4.2	ppb
⌊>	Ge-KED3	72	13673.2	1.1			ppb
⌈>	In-KED2	115	14452.9	1.7			ppb
|	Sb-KED2	121	9229.0	3.9	24.96286	3.6	ppb
⌊	Sb-KED2	123	7304.6	1.4	24.63300	2.9	ppb
⌈>	Lu-KED2	175	54586.1	1.1			ppb
⌊	Pb-KED2	208	137297.6	2.0	25.09856	3.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	101				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICB
Sample Date/Time: Wednesday, August 24, 2016 17:23:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\ICB.006
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.0	32.8	-0.00014	8386.3	ppb
|	Cu-KED3	65	12.7	19.9	-0.00121	643.5	ppb
|	Zn-KED3	66	6.0	72.6	-0.02350	286.9	ppb
⌊>	Ge-KED3	72	13625.8	2.5			ppb
⌈>	In-KED2	115	14461.3	1.6			ppb
|	Sb-KED2	121	38.7	29.4	-0.01291	243.6	ppb
⌊	Sb-KED2	123	38.0	9.9	0.03369	39.4	ppb
⌈>	Lu-KED2	175	53483.9	1.0			ppb
⌊	Pb-KED2	208	13.3	37.7	-0.00159	57.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 17:26:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.007
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.7	36.7	0.00125	970.9	ppb
|	Cu-KED3	65	8.7	52.0	-0.01257	105.8	ppb
|	Zn-KED3	66	4.7	32.7	-0.04239	60.3	ppb
⌊>	Ge-KED3	72	13371.3	1.4			ppb
⌈>	In-KED2	115	14142.7	2.4			ppb
|	Sb-KED2	121	31.3	14.7	-0.03076	48.0	ppb
⌊	Sb-KED2	123	30.5	29.5	0.01001	280.9	ppb
⌈>	Lu-KED2	175	53810.6	4.7			ppb
⌊	Pb-KED2	208	16.0	21.7	-0.00111	53.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLICVS
Sample Date/Time: Wednesday, August 24, 2016 17:29:46
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLICVS.008
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	153.3	19.6	0.19913	22.3	ppb
|	Cu-KED3	65	72.7	7.6	0.17827	13.1	ppb
|	Zn-KED3	66	67.7	6.0	0.99191	8.4	ppb
⌊>	Ge-KED3	72	13385.6	3.2			ppb
⌈>	In-KED2	115	14481.7	1.7			ppb
|	Sb-KED2	121	89.3	14.9	0.12403	27.2	ppb
⌊	Sb-KED2	123	59.0	10.8	0.10449	21.7	ppb
⌈>	Lu-KED2	175	54129.1	2.2			ppb
⌊	Pb-KED2	208	576.7	2.9	0.10230	4.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	89				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	124				
⌊	Sb-KED2	123	104				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: ICSA
Sample Date/Time: Wednesday, August 24, 2016 17:32:44
Sample Description:
Autosampler Position: 5
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\ICSA.009
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	332.7	3.7	0.55414	6.0	ppb
|	Cu-KED3	65	186.7	3.6	0.60816	1.7	ppb
|	Zn-KED3	66	16.3	24.7	0.19385	42.6	ppb
⌊>	Ge-KED3	72	11490.6	2.0			ppb
⌈>	In-KED2	115	12531.7	2.8			ppb
|	Sb-KED2	121	46.0	7.5	0.02611	35.9	ppb
⌊	Sb-KED2	123	35.0	19.6	0.04193	71.1	ppb
⌈>	Lu-KED2	175	50920.0	2.5			ppb
⌊	Pb-KED2	208	400.7	3.0	0.07445	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICSAB
Sample Date/Time: Wednesday, August 24, 2016 17:35:43
Sample Description:
Autosampler Position: 6
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICSAB.010
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26192.0	1.0	45.28134	1.4	ppb
|	Cu-KED3	65	13434.6	2.3	45.61223	2.5	ppb
|	Zn-KED3	66	1162.0	0.9	21.66620	2.3	ppb
⌊>	Ge-KED3	72	11715.5	2.2			ppb
⌈>	In-KED2	115	12651.5	2.6			ppb
|	Sb-KED2	121	45.3	28.7	0.02319	181.7	ppb
⌊	Sb-KED2	123	35.1	10.2	0.04096	38.2	ppb
⌈>	Lu-KED2	175	50557.3	1.4			ppb
⌊	Pb-KED2	208	394.7	8.2	0.07378	7.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	91				
|	Cu-KED3	65	91				
|	Zn-KED3	66	87				
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-03
Sample Date/Time: Wednesday, August 24, 2016 17:38:44
Sample Description: 5
Autosampler Position: 301
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-03.011
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	61.3	30.3	0.06850	47.1	ppb
|	Cu-KED3	65	33.3	27.9	0.06992	44.8	ppb
|	Zn-KED3	66	47.3	19.2	0.72670	23.0	ppb
⌊>	Ge-KED3	72	12296.0	2.1			ppb
⌈>	In-KED2	115	13169.9	3.8			ppb
|	Sb-KED2	121	16.0	21.7	-0.07051	11.9	ppb
⌊	Sb-KED2	123	13.2	33.6	-0.04629	31.7	ppb
⌈>	Lu-KED2	175	50708.9	4.0			ppb
⌊	Pb-KED2	208	412.7	13.3	0.07694	9.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		93			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-001
Sample Date/Time: Wednesday, August 24, 2016 17:41:43
Sample Description: 5
Autosampler Position: 302
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-001.012
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13757.3	1.6	22.92116	4.4	ppb
|	Cu-KED3	65	7001.0	2.0	22.89886	3.7	ppb
|	Zn-KED3	66	7941.5	1.0	143.43907	4.0	ppb
⌊>	Ge-KED3	72	12156.5	3.2			ppb
⌈>	In-KED2	115	12735.7	1.5			ppb
|	Sb-KED2	121	143.3	12.0	0.32411	16.8	ppb
⌊	Sb-KED2	123	123.1	12.3	0.37762	15.2	ppb
⌈>	Lu-KED2	175	52570.6	3.6			ppb
⌊	Pb-KED2	208	339169.4	1.9	64.43031	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		90			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-002
Sample Date/Time: Wednesday, August 24, 2016 17:44:42
Sample Description: 5
Autosampler Position: 303
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-002.013
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13016.6	2.5	22.77098	5.3	ppb
|	Cu-KED3	65	6751.9	2.3	23.18430	3.7	ppb
|	Zn-KED3	66	5180.9	1.5	98.20744	4.2	ppb
⌊>	Ge-KED3	72	11578.4	2.8			ppb
⌈>	In-KED2	115	12674.1	2.3			ppb
|	Sb-KED2	121	264.7	9.6	0.70356	13.8	ppb
⌊	Sb-KED2	123	222.5	8.1	0.76279	6.9	ppb
⌈>	Lu-KED2	175	52425.4	0.8			ppb
⌊	Pb-KED2	208	988623.6	1.3	188.16684	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-003
Sample Date/Time: Wednesday, August 24, 2016 17:47:41
Sample Description: 5
Autosampler Position: 304
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-003.014
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	37074.1	1.7	63.83479	2.0	ppb
|	Cu-KED3	65	19023.0	0.7	64.32801	1.5	ppb
|	Zn-KED3	66	6079.6	2.6	113.34517	2.0	ppb
⌊>	Ge-KED3	72	11764.5	1.3			ppb
⌈>	In-KED2	115	12862.4	0.8			ppb
|	Sb-KED2	121	206.7	5.0	0.51311	6.3	ppb
⌊	Sb-KED2	123	150.0	7.7	0.47561	10.0	ppb
⌈>	Lu-KED2	175	52008.2	3.0			ppb
⌊	Pb-KED2	208	662759.4	0.8	127.20702	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-004
Sample Date/Time: Wednesday, August 24, 2016 17:50:40
Sample Description: 5
Autosampler Position: 305
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-004.015
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20673.6	2.3	37.60755	5.4	ppb
|	Cu-KED3	65	10600.9	1.0	37.86567	4.6	ppb
|	Zn-KED3	66	5676.8	0.6	111.84245	4.2	ppb
⌊>	Ge-KED3	72	11144.0	3.6			ppb
⌈>	In-KED2	115	12459.0	3.1			ppb
|	Sb-KED2	121	181.3	5.7	0.45406	8.6	ppb
⌊	Sb-KED2	123	157.3	8.5	0.52186	6.6	ppb
⌈>	Lu-KED2	175	51653.5	0.3			ppb
⌊	Pb-KED2	208	614372.4	0.8	118.67650	0.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		82			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-005
Sample Date/Time: Wednesday, August 24, 2016 17:53:39
Sample Description: 5
Autosampler Position: 306
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-005.016
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21096.9	0.7	37.17840	0.7	ppb
|	Cu-KED3	65	10701.0	2.6	37.03459	2.8	ppb
|	Zn-KED3	66	7196.1	0.3	137.40686	0.4	ppb
⌊>	Ge-KED3	72	11489.3	0.6			ppb
⌈>	In-KED2	115	12782.4	3.8			ppb
|	Sb-KED2	121	136.7	20.7	0.30233	29.4	ppb
⌊	Sb-KED2	123	102.7	15.2	0.29951	24.1	ppb
⌈>	Lu-KED2	175	51442.2	2.3			ppb
⌊	Pb-KED2	208	314204.3	1.1	60.96955	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		95			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-006
Sample Date/Time: Wednesday, August 24, 2016 17:56:38
Sample Description: 5
Autosampler Position: 307
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-006.017
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21272.5	2.5	37.41008	2.6	ppb
|	Cu-KED3	65	10863.5	1.7	37.52093	2.4	ppb
|	Zn-KED3	66	5860.9	1.4	111.65831	1.7	ppb
⌊>	Ge-KED3	72	11513.3	0.7			ppb
⌈>	In-KED2	115	12420.1	1.0			ppb
|	Sb-KED2	121	197.3	6.1	0.50611	7.9	ppb
⌊	Sb-KED2	123	148.1	12.3	0.48789	13.4	ppb
⌈>	Lu-KED2	175	51833.9	2.3			ppb
⌊	Pb-KED2	208	724076.6	0.8	139.41677	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		87			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-007
Sample Date/Time: Wednesday, August 24, 2016 17:59:37
Sample Description: 5
Autosampler Position: 308
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-007.018
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	10852.1	1.5	16.07406	2.7	ppb
	Cu-KED3	65	5567.8	2.2	16.20625	6.0	ppb
	Zn-KED3	66	4650.8	3.2	74.63535	0.6	ppb
>	Ge-KED3	72	13662.2	3.7			ppb
>	In-KED2	115	14062.1	1.1			ppb
	Sb-KED2	121	264.7	5.7	0.62158	8.1	ppb
	Sb-KED2	123	210.7	11.9	0.63777	13.3	ppb
>	Lu-KED2	175	57306.8	2.3			ppb
	Pb-KED2	208	539086.9	1.0	93.89746	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		101			
>	In-KED2	115		99			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		106			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-008
Sample Date/Time: Wednesday, August 24, 2016 18:02:36
Sample Description: 5
Autosampler Position: 309
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-008.019
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17839.1	2.7	26.20102	3.2	ppb
|	Cu-KED3	65	9274.7	1.9	26.74852	2.2	ppb
|	Zn-KED3	66	4843.8	1.3	77.07091	2.9	ppb
⌊>	Ge-KED3	72	13783.3	2.0			ppb
⌈>	In-KED2	115	14057.2	1.9			ppb
|	Sb-KED2	121	582.0	0.7	1.50842	1.5	ppb
⌊	Sb-KED2	123	444.3	6.2	1.45116	6.6	ppb
⌈>	Lu-KED2	175	58223.4	2.2			ppb
⌊	Pb-KED2	208	1459810.9	2.2	250.17360	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:05:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\CCV.020
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17135.6	1.7	24.98285	3.5	ppb
|	Cu-KED3	65	8893.8	2.2	25.46074	3.4	ppb
|	Zn-KED3	66	1576.1	3.8	24.84199	7.9	ppb
⌊>	Ge-KED3	72	13893.1	4.0			ppb
⌈>	In-KED2	115	14877.2	4.0			ppb
|	Sb-KED2	121	9245.7	0.8	24.31655	4.1	ppb
⌊	Sb-KED2	123	7555.7	3.9	24.78177	6.6	ppb
⌈>	Lu-KED2	175	55457.5	2.6			ppb
⌊	Pb-KED2	208	137693.1	1.3	24.78655	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	102				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121	97				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:08:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.021
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14.0	0.0	-0.01249	3.0	ppb
|	Cu-KED3	65	11.0	48.1	-0.00683	212.3	ppb
|	Zn-KED3	66	3.0	88.2	-0.07146	59.4	ppb
⌊>	Ge-KED3	72	13835.4	1.9			ppb
⌈>	In-KED2	115	14472.1	1.4			ppb
|	Sb-KED2	121	31.3	32.1	-0.03275	86.5	ppb
⌊	Sb-KED2	123	34.1	27.5	0.02006	150.2	ppb
⌈>	Lu-KED2	175	54671.8	1.2			ppb
⌊	Pb-KED2	208	36.7	69.5	0.00259	175.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009
Sample Date/Time: Wednesday, August 24, 2016 18:11:39
Sample Description: 5
Autosampler Position: 310
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009.022
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11933.7	1.9	20.14639	2.4	ppb
|	Cu-KED3	65	6132.0	2.8	20.32837	3.5	ppb
|	Zn-KED3	66	5327.7	2.3	97.49563	2.9	ppb
⌊>	Ge-KED3	72	11985.4	0.7			ppb
⌈>	In-KED2	115	13108.1	2.8			ppb
|	Sb-KED2	121	118.7	10.8	0.23844	20.1	ppb
⌊	Sb-KED2	123	103.7	10.5	0.29124	10.1	ppb
⌈>	Lu-KED2	175	54162.2	0.8			ppb
⌊	Pb-KED2	208	274508.7	0.6	50.56962	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		89			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009L
Sample Date/Time: Wednesday, August 24, 2016 18:14:38
Sample Description: 25
Autosampler Position: 311
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009L.023
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2746.3	2.8	4.29828	2.7	ppb
|	Cu-KED3	65	1408.7	5.7	4.32558	5.8	ppb
|	Zn-KED3	66	1215.1	2.8	20.64461	2.8	ppb
⌊>	Ge-KED3	72	12848.8	0.3			ppb
⌈>	In-KED2	115	13843.8	3.1			ppb
|	Sb-KED2	121	55.3	47.2	0.03917	187.1	ppb
⌊	Sb-KED2	123	37.4	10.2	0.03755	47.4	ppb
⌈>	Lu-KED2	175	53517.1	2.7			ppb
⌊	Pb-KED2	208	59031.8	1.1	11.00953	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: 1000ppb LR
Sample Date/Time: Wednesday, August 24, 2016 18:17:38
Sample Description:
Autosampler Position: 124
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\1000ppb LR.024
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	648384.3	0.2	985.81018	2.0	ppb
|	Cu-KED3	65	330737.8	0.4	987.68136	2.3	ppb
|	Zn-KED3	66	59287.1	1.0	976.46035	1.1	ppb
⌊>	Ge-KED3	72	13331.6	1.9			ppb
⌈>	In-KED2	115	13975.8	2.9			ppb
|	Sb-KED2	121	353649.3	1.6	994.41063	3.8	ppb
⌊	Sb-KED2	123	282852.1	1.0	990.18826	2.0	ppb
⌈>	Lu-KED2	175	53911.2	1.8			ppb
⌊	Pb-KED2	208	5431439.9	0.6	1005.54435	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: RINSE
Sample Date/Time: Wednesday, August 24, 2016 18:20:39
Sample Description:
Autosampler Position: 123
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\RINSE.025
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41.3	14.8	0.02882	30.6	ppb
|	Cu-KED3	65	25.7	12.5	0.03717	26.2	ppb
|	Zn-KED3	66	5.3	21.7	-0.03280	55.1	ppb
⌊>	Ge-KED3	72	13542.1	0.9			ppb
⌈>	In-KED2	115	14338.2	1.5			ppb
|	Sb-KED2	121	232.7	13.2	0.51860	14.5	ppb
⌊	Sb-KED2	123	187.3	5.5	0.54366	4.9	ppb
⌈>	Lu-KED2	175	53342.4	1.0			ppb
⌊	Pb-KED2	208	95.3	7.9	0.01376	9.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009A
Sample Date/Time: Wednesday, August 24, 2016 18:23:39
Sample Description: 5 +50ppb
Autosampler Position: 312
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009A.026
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	40409.1	1.7	67.01339	5.5	ppb
	Cu-KED3	65	20276.0	1.2	66.04478	5.7	ppb
	Zn-KED3	66	7901.2	2.8	142.01360	7.4	ppb
>	Ge-KED3	72	12234.2	4.8			ppb
>	In-KED2	115	12949.2	2.6			ppb
	Sb-KED2	121	16770.5	0.7	50.76768	2.2	ppb
	Sb-KED2	123	13440.7	1.8	50.68347	1.6	ppb
>	Lu-KED2	175	54912.7	1.7			ppb
	Pb-KED2	208	519477.1	0.7	94.41346	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		91			
>	In-KED2	115		91			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		102			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009S
Sample Date/Time: Wednesday, August 24, 2016 18:26:38
Sample Description: 5
Autosampler Position: 313
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009S.027
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	65584.9	0.8	112.13773	1.2	ppb
|	Cu-KED3	65	33389.6	1.2	112.11907	1.1	ppb
|	Zn-KED3	66	15616.9	0.7	289.28340	1.3	ppb
⌊>	Ge-KED3	72	11849.2	0.7			ppb
⌈>	In-KED2	115	12960.3	0.8			ppb
|	Sb-KED2	121	33177.2	1.3	100.42942	1.5	ppb
⌊	Sb-KED2	123	26765.4	1.7	100.92564	2.2	ppb
⌈>	Lu-KED2	175	54560.4	2.0			ppb
⌊	Pb-KED2	208	1229425.3	0.7	224.90150	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		88			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009SD
Sample Date/Time: Wednesday, August 24, 2016 18:29:37
Sample Description: 5
Autosampler Position: 314
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009SD.028
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	66172.2	0.2	114.45741	2.3	ppb
	Cu-KED3	65	34069.6	1.1	115.75200	3.2	ppb
	Zn-KED3	66	15807.7	1.2	296.24495	3.0	ppb
>	Ge-KED3	72	11716.5	2.2			ppb
>	In-KED2	115	12999.1	3.3			ppb
	Sb-KED2	121	33638.9	0.9	101.57730	2.6	ppb
	Sb-KED2	123	26790.3	2.4	100.72949	1.1	ppb
>	Lu-KED2	175	55716.5	2.2			ppb
	Pb-KED2	208	1258981.6	0.6	225.53414	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		87			
>	In-KED2	115		92			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		103			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-04
Sample Date/Time: Wednesday, August 24, 2016 18:32:36
Sample Description: 5
Autosampler Position: 315
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-04.029
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	61075.7	3.3	100.43228	6.8	ppb
|	Cu-KED3	65	31670.8	3.0	102.28434	6.7	ppb
|	Zn-KED3	66	11449.9	3.2	203.96576	6.8	ppb
⌊>	Ge-KED3	72	12340.3	3.9			ppb
⌈>	In-KED2	115	13527.4	3.5			ppb
|	Sb-KED2	121	69023.1	2.8	200.40854	3.7	ppb
⌊	Sb-KED2	123	55565.4	2.6	200.86105	1.2	ppb
⌈>	Lu-KED2	175	52621.8	2.6			ppb
⌊	Pb-KED2	208	1037460.7	1.3	196.79045	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		95			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 18:35:37
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.030
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27.3	40.3	0.00900	195.2	ppb
|	Cu-KED3	65	18.3	50.7	0.01675	165.5	ppb
|	Zn-KED3	66	9.3	37.6	0.03604	167.3	ppb
⌊>	Ge-KED3	72	13239.1	1.4			ppb
⌈>	In-KED2	115	13908.3	1.9			ppb
|	Sb-KED2	121	70.0	37.5	0.07925	90.3	ppb
⌊	Sb-KED2	123	51.9	7.0	0.08756	17.6	ppb
⌈>	Lu-KED2	175	53323.3	1.0			ppb
⌊	Pb-KED2	208	81.3	56.2	0.01120	77.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-010
Sample Date/Time: Wednesday, August 24, 2016 18:38:37
Sample Description: 5
Autosampler Position: 316
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-010.031
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	9698.0	0.8	16.79328	2.3	ppb
|	Cu-KED3	65	5084.2	2.2	17.28809	3.3	ppb
|	Zn-KED3	66	5760.2	1.9	108.18915	3.8	ppb
⌊>	Ge-KED3	72	11685.1	3.0			ppb
⌈>	In-KED2	115	12868.9	1.0			ppb
|	Sb-KED2	121	107.3	11.4	0.20975	18.7	ppb
⌊	Sb-KED2	123	81.4	15.7	0.21414	21.2	ppb
⌈>	Lu-KED2	175	53831.3	2.1			ppb
⌊	Pb-KED2	208	185656.8	1.2	34.42119	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:41:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.032
User Name: JDB
Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
Cu-KED3	63	16089.7	1.1	24.71959	0.9	ppb
Cu-KED3	65	8286.4	2.4	24.99570	1.0	ppb
Zn-KED3	66	1495.7	1.2	24.81916	3.0	ppb
Ge-KED3	72	13174.1	1.9			ppb
In-KED2	115	13475.5	1.6			ppb
Sb-KED2	121	8777.4	1.5	25.47231	2.9	ppb
Sb-KED2	123	7030.6	1.5	25.43173	3.0	ppb
Lu-KED2	175	50414.2	1.9			ppb
Pb-KED2	208	132601.6	0.6	26.24905	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	99				
	Cu-KED3	65	100				
	Zn-KED3	66	99				
>	Ge-KED3	72		98			
>	In-KED2	115		95			
	Sb-KED2	121	102				
	Sb-KED2	123	102				
>	Lu-KED2	175		93			
	Pb-KED2	208	105				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:44:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.033
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	19.3	6.0	-0.00325	55.2	ppb
|	Cu-KED3	65	9.7	11.9	-0.00910	36.4	ppb
|	Zn-KED3	66	4.7	32.7	-0.04127	62.9	ppb
⌊>	Ge-KED3	72	13171.7	0.7			ppb
⌈>	In-KED2	115	14028.9	2.1			ppb
|	Sb-KED2	121	46.0	45.4	0.01047	547.5	ppb
⌊	Sb-KED2	123	41.2	15.7	0.04839	41.0	ppb
⌈>	Lu-KED2	175	54678.5	2.9			ppb
⌊	Pb-KED2	208	18.0	29.4	-0.00079	120.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 18:47:37
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\LLCCVS.034
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	164.7	11.5	0.21089	14.6	ppb
|	Cu-KED3	65	78.7	7.4	0.19056	11.0	ppb
|	Zn-KED3	66	60.3	5.8	0.84822	6.9	ppb
⌊>	Ge-KED3	72	13696.6	1.9			ppb
⌈>	In-KED2	115	14455.7	2.5			ppb
|	Sb-KED2	121	103.3	19.0	0.16216	29.2	ppb
⌊	Sb-KED2	123	66.2	14.5	0.12906	23.9	ppb
⌈>	Lu-KED2	175	55465.8	1.9			ppb
⌊	Pb-KED2	208	621.3	2.9	0.10770	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	105				
|	Cu-KED3	65	95				
|	Zn-KED3	66	85				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	162				
⌊	Sb-KED2	123	129				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	108				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: K1608325-011
Sample Date/Time: Wednesday, August 24, 2016 18:50:38
Sample Description: 5
Autosampler Position: 317
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-011.035
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	54822.3	1.3	80.74822	1.8	ppb
|	Cu-KED3	65	27637.7	1.5	79.94694	1.9	ppb
|	Zn-KED3	66	7522.6	2.1	119.98855	2.7	ppb
⌊>	Ge-KED3	72	13754.3	1.3			ppb
⌈>	In-KED2	115	14517.5	4.1			ppb
|	Sb-KED2	121	3769.8	1.0	10.09079	3.6	ppb
⌊	Sb-KED2	123	3063.5	1.3	10.23489	3.1	ppb
⌈>	Lu-KED2	175	59191.7	1.9			ppb
⌊	~~Pb-KED2~~	~~208~~	~~17281705.6~~	1.8	~~2914.29614~~	~~3.2~~	ppb

Over Linear Range

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

JS 8/25/16

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-012
Sample Date/Time: Wednesday, August 24, 2016 18:53:37
Sample Description: 5
Autosampler Position: 318
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-012.036
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22589.2	2.2	33.48770	1.4	ppb
|	Cu-KED3	65	11756.8	1.0	34.22973	0.6	ppb
|	Zn-KED3	66	5648.8	0.7	90.71860	1.7	ppb
⌊>	Ge-KED3	72	13655.9	1.4			ppb
⌈>	In-KED2	115	14287.6	2.4			ppb
|	Sb-KED2	121	338.7	9.0	0.81325	10.6	ppb
⌊	Sb-KED2	123	261.4	2.7	0.80057	5.4	ppb
⌈>	Lu-KED2	175	58186.6	0.4			ppb
⌊	Pb-KED2	208	924924.8	1.8	158.60167	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-013
Sample Date/Time: Wednesday, August 24, 2016 18:56:36
Sample Description: 5
Autosampler Position: 319
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-013.037
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41003.4	2.0	59.51113	1.9	ppb
|	Cu-KED3	65	21144.6	1.7	60.26971	1.7	ppb
|	Zn-KED3	66	7660.1	1.9	120.40587	1.9	ppb
⌊>	Ge-KED3	72	13954.8	0.0			ppb
⌈>	In-KED2	115	14325.4	2.8			ppb
|	Sb-KED2	121	409.3	3.7	1.00495	5.5	ppb
⌊	Sb-KED2	123	319.9	4.4	0.99729	3.8	ppb
⌈>	Lu-KED2	175	57653.5	3.8			ppb
⌊	Pb-KED2	208	2271766.3	1.6	393.66609	5.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-01
Sample Date/Time: Wednesday, August 24, 2016 18:59:35
Sample Description: 5
Autosampler Position: 320
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609274-01.038
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43.3	57.7	0.03308	122.6	ppb
|	Cu-KED3	65	15.0	52.9	0.00665	382.5	ppb
|	Zn-KED3	66	30.3	33.3	0.37974	48.8	ppb
⌊>	Ge-KED3	72	13463.3	3.6			ppb
⌈>	In-KED2	115	14766.0	0.5			ppb
|	Sb-KED2	121	20.0	30.0	-0.06477	25.0	ppb
⌊	Sb-KED2	123	12.7	16.2	-0.05278	13.0	ppb
⌈>	Lu-KED2	175	55555.5	1.6			ppb
⌊	Pb-KED2	208	311.3	19.9	0.05187	21.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003
Sample Date/Time: Wednesday, August 24, 2016 19:02:34
Sample Description: 5
Autosampler Position: 321
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003.039
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28814.4	2.1	41.50209	1.6	ppb
|	Cu-KED3	65	14819.0	0.3	41.93087	3.0	ppb
|	Zn-KED3	66	8934.1	0.9	139.47166	3.3	ppb
⌊>	Ge-KED3	72	14061.6	2.9			ppb
⌈>	In-KED2	115	14689.3	1.3			ppb
|	Sb-KED2	121	205.3	11.9	0.43063	13.9	ppb
⌊	Sb-KED2	123	164.6	6.4	0.45335	9.3	ppb
⌈>	Lu-KED2	175	57238.9	3.8			ppb
⌊	Pb-KED2	208	433908.8	2.3	75.73415	5.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003L
Sample Date/Time: Wednesday, August 24, 2016 19:05:33
Sample Description: 25
Autosampler Position: 322
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003L.040
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	6288.1	2.0	8.76190	3.4	ppb
|	Cu-KED3	65	3266.0	1.3	8.93159	1.4	ppb
|	Zn-KED3	66	1912.1	1.8	28.85805	3.3	ppb
⌊>	Ge-KED3	72	14494.7	2.2			ppb
⌈>	In-KED2	115	15519.0	0.6			ppb
|	Sb-KED2	121	60.0	10.0	0.03384	45.2	ppb
⌊	Sb-KED2	123	60.4	10.9	0.09519	20.6	ppb
⌈>	Lu-KED2	175	57681.9	1.8			ppb
⌊	Pb-KED2	208	91301.6	0.9	15.79201	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003A
Sample Date/Time: Wednesday, August 24, 2016 19:08:32
Sample Description: 5 +50ppb
Autosampler Position: 323
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003A.041
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	62226.6	0.4	89.95883	2.0	ppb
|	Cu-KED3	65	32106.4	1.7	91.14252	1.3	ppb
|	Zn-KED3	66	12167.2	2.4	190.48179	1.2	ppb
⌊>	Ge-KED3	72	14015.5	1.6			ppb
⌈>	In-KED2	115	14573.8	2.7			ppb
|	Sb-KED2	121	19122.8	1.9	51.43981	3.0	ppb
⌊	Sb-KED2	123	15311.4	0.1	51.31767	2.8	ppb
⌈>	Lu-KED2	175	58962.8	1.4			ppb
⌊	Pb-KED2	208	707622.0	1.1	119.76963	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003S
Sample Date/Time: Wednesday, August 24, 2016 19:11:32
Sample Description: 5
Autosampler Position: 324
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003S.042
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	96007.5	0.1	138.82164	1.4	ppb
|	Cu-KED3	65	49006.2	0.3	139.17446	1.8	ppb
|	Zn-KED3	66	20364.2	0.9	319.02374	2.3	ppb
⌊>	Ge-KED3	72	14013.5	1.5			ppb
⌈>	In-KED2	115	14800.8	1.8			ppb
|	Sb-KED2	121	28194.5	0.5	74.71318	1.5	ppb
⌊	Sb-KED2	123	22952.5	0.5	75.76965	1.7	ppb
⌈>	Lu-KED2	175	59182.4	1.5			ppb
⌊	Pb-KED2	208	1516079.5	1.5	255.67736	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003SD
Sample Date/Time: Wednesday, August 24, 2016 19:14:31
Sample Description: 5
Autosampler Position: 325
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003SD.043
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	92556.9	0.8	133.49609	0.6	ppb
|	Cu-KED3	65	47803.9	1.7	135.41397	1.6	ppb
|	Zn-KED3	66	20692.3	1.3	323.33310	1.4	ppb
⌊>	Ge-KED3	72	14046.9	0.6			ppb
⌈>	In-KED2	115	14549.2	2.4			ppb
|	Sb-KED2	121	28670.1	2.0	77.28767	1.5	ppb
⌊	Sb-KED2	123	22927.2	1.9	76.98748	0.6	ppb
⌈>	Lu-KED2	175	59706.6	3.3			ppb
⌊	Pb-KED2	208	1436600.4	0.8	240.26528	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-02
Sample Date/Time: Wednesday, August 24, 2016 19:17:30
Sample Description: 5
Autosampler Position: 326
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609274-02.044
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	70748.1	0.2	96.82903	1.2	ppb
|	Cu-KED3	65	36111.6	1.7	97.07193	2.4	ppb
|	Zn-KED3	66	12892.5	2.6	191.12099	2.6	ppb
⌊>	Ge-KED3	72	14802.7	1.0			ppb
⌈>	In-KED2	115	15212.7	1.3			ppb
|	Sb-KED2	121	74789.3	0.9	192.98203	0.7	ppb
⌊	Sb-KED2	123	60683.4	0.5	195.04042	1.7	ppb
⌈>	Lu-KED2	175	58837.9	1.6			ppb
⌊	Pb-KED2	208	1124414.0	1.0	190.73309	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		110			
⌈>	In-KED2	115		107			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:20:30
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.045
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18383.8	2.5	25.27169	2.7	ppb
|	Cu-KED3	65	9437.8	1.7	25.47483	1.6	ppb
|	Zn-KED3	66	1655.8	1.2	24.57229	0.4	ppb
⌊>	Ge-KED3	72	14724.3	1.5			ppb
⌈>	In-KED2	115	15360.0	2.7			ppb
|	Sb-KED2	121	9712.0	2.1	24.73703	4.8	ppb
⌊	Sb-KED2	123	7787.7	2.0	24.70856	1.7	ppb
⌈>	Lu-KED2	175	57876.7	0.3			ppb
⌊	Pb-KED2	208	145007.0	1.6	24.99489	1.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:23:30
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.046
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13.3	37.7	-0.01453	47.2	ppb
|	Cu-KED3	65	6.7	22.9	-0.02015	20.1	ppb
|	Zn-KED3	66	5.7	27.0	-0.03408	65.7	ppb
⌊>	Ge-KED3	72	14603.5	0.7			ppb
⌈>	In-KED2	115	15432.7	2.2			ppb
|	Sb-KED2	121	40.7	45.7	-0.01501	302.0	ppb
⌊	Sb-KED2	123	39.5	14.4	0.03020	54.9	ppb
⌈>	Lu-KED2	175	57083.2	3.2			ppb
⌊	Pb-KED2	208	24.7	33.8	0.00027	595.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		108			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 19:26:29
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.047
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45.3	33.7	0.03175	68.3	ppb
|	Cu-KED3	65	21.3	21.1	0.02158	58.8	ppb
|	Zn-KED3	66	12.3	9.4	0.07171	24.1	ppb
⌊>	Ge-KED3	72	14183.7	0.4			ppb
⌈>	In-KED2	115	15440.8	1.1			ppb
|	Sb-KED2	121	45.3	43.5	-0.00303	1610.4	ppb
⌊	Sb-KED2	123	37.5	10.7	0.02371	49.6	ppb
⌈>	Lu-KED2	175	58055.4	0.6			ppb
⌊	Pb-KED2	208	42.7	31.9	0.00326	71.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-004
Sample Date/Time: Wednesday, August 24, 2016 19:29:30
Sample Description: 5
Autosampler Position: 327
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-004.048
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	38324.0	2.2	55.70299	1.7	ppb
|	Cu-KED3	65	19463.9	0.5	55.56223	0.7	ppb
|	Zn-KED3	66	8024.6	0.9	126.33502	0.7	ppb
⌊>	Ge-KED3	72	13933.5	0.5			ppb
⌈>	In-KED2	115	14781.9	2.2			ppb
|	Sb-KED2	121	170.7	0.7	0.33556	2.1	ppb
⌊	Sb-KED2	123	146.1	11.5	0.38802	12.2	ppb
⌈>	Lu-KED2	175	57759.3	3.0			ppb
⌊	Pb-KED2	208	623994.7	0.4	107.85250	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-005
Sample Date/Time: Wednesday, August 24, 2016 19:32:29
Sample Description: 5
Autosampler Position: 328
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-005.049
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51880.7	1.5	75.41537	1.2	ppb
|	Cu-KED3	65	26494.9	1.2	75.63921	0.9	ppb
|	Zn-KED3	66	10611.6	0.9	167.09160	0.9	ppb
⌊>	Ge-KED3	72	13934.5	0.4			ppb
⌈>	In-KED2	115	15004.5	2.2			ppb
|	Sb-KED2	121	232.7	2.2	0.49126	4.3	ppb
⌊	Sb-KED2	123	187.0	1.1	0.51469	3.6	ppb
⌈>	Lu-KED2	175	58713.1	2.4			ppb
⌊	Pb-KED2	208	728798.5	1.7	123.89703	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-006
Sample Date/Time: Wednesday, August 24, 2016 19:35:28
Sample Description: 5
Autosampler Position: 329
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-006.050
User Name: JDB
Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
Cu-KED3	63	29405.6	1.2	42.95843	0.9	ppb
Cu-KED3	65	14882.1	0.9	42.69577	0.6	ppb
Zn-KED3	66	5575.1	2.0	88.19339	1.6	ppb
Ge-KED3	72	13860.7	0.4			ppb
In-KED2	115	14677.0	3.6			ppb
Sb-KED2	121	158.7	6.9	0.30646	7.4	ppb
Sb-KED2	123	126.1	4.0	0.32579	7.8	ppb
Lu-KED2	175	57848.1	5.2			ppb
Pb-KED2	208	330871.8	1.4	57.19315	6.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		103			
>	In-KED2	115		103			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		107			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-010
Sample Date/Time: Wednesday, August 24, 2016 19:38:27
Sample Description: 5
Autosampler Position: 330
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-010.051
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51983.8	3.1	90.56508	2.2	ppb
|	Cu-KED3	65	26918.0	0.7	92.11651	0.6	ppb
|	Zn-KED3	66	7764.8	1.2	146.52507	0.8	ppb
⌊>	Ge-KED3	72	11626.4	1.2			ppb
⌈>	In-KED2	115	13035.0	0.3			ppb
|	Sb-KED2	121	670.0	5.7	1.90100	6.3	ppb
⌊	Sb-KED2	123	528.7	1.4	1.88879	1.7	ppb
⌈>	Lu-KED2	175	53206.2	1.0			ppb
⌊	Pb-KED2	208	1462819.1	1.7	274.36736	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-011
Sample Date/Time: Wednesday, August 24, 2016 19:41:26
Sample Description: 5
Autosampler Position: 331
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-011.052
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45899.0	0.8	66.48188	2.2	ppb
|	Cu-KED3	65	23565.4	2.1	67.03101	2.7	ppb
|	Zn-KED3	66	8274.4	0.4	129.79045	1.4	ppb
⌊>	Ge-KED3	72	13986.8	1.4			ppb
⌈>	In-KED2	115	14860.9	2.0			ppb
|	Sb-KED2	121	292.7	4.1	0.65563	5.0	ppb
⌊	Sb-KED2	123	242.4	6.2	0.70362	9.4	ppb
⌈>	Lu-KED2	175	58682.7	2.6			ppb
⌊	Pb-KED2	208	965939.5	0.8	164.33001	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-012
Sample Date/Time: Wednesday, August 24, 2016 19:44:25
Sample Description: 5
Autosampler Position: 332
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-012.053
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25665.0	2.0	37.12008	0.8	ppb
|	Cu-KED3	65	13310.2	1.4	37.82131	3.4	ppb
|	Zn-KED3	66	8906.8	0.2	139.61537	1.9	ppb
⌊>	Ge-KED3	72	13999.2	2.1			ppb
⌈>	In-KED2	115	14424.7	2.7			ppb
|	Sb-KED2	121	186.0	12.2	0.38957	18.6	ppb
⌊	Sb-KED2	123	154.5	7.0	0.42957	11.6	ppb
⌈>	Lu-KED2	175	56911.2	2.5			ppb
⌊	Pb-KED2	208	406149.2	0.3	71.23355	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-013
Sample Date/Time: Wednesday, August 24, 2016 19:47:24
Sample Description: 5
Autosampler Position: 333
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-013.054
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	60574.8	0.9	86.47060	0.7	ppb
|	Cu-KED3	65	31329.7	1.3	87.85406	2.8	ppb
|	Zn-KED3	66	9541.5	2.4	147.56608	4.0	ppb
⌊>	Ge-KED3	72	14191.7	1.6			ppb
⌈>	In-KED2	115	14977.8	0.6			ppb
|	Sb-KED2	121	1812.8	3.2	4.63512	2.7	ppb
⌊	Sb-KED2	123	1476.5	1.4	4.72678	1.4	ppb
⌈>	Lu-KED2	175	58036.3	1.4			ppb
⌊	Pb-KED2	208	4205697.3	0.5	723.19926	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-014
Sample Date/Time: Wednesday, August 24, 2016 19:50:23
Sample Description: 5
Autosampler Position: 334
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-014.055
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15787.4	1.0	23.13021	1.2	ppb
|	Cu-KED3	65	8129.6	1.5	23.38826	1.5	ppb
|	Zn-KED3	66	16313.6	0.7	259.22062	1.1	ppb
⌊>	Ge-KED3	72	13812.3	0.4			ppb
⌈>	In-KED2	115	14486.5	1.6			ppb
|	Sb-KED2	121	180.7	6.8	0.37154	6.8	ppb
⌊	Sb-KED2	123	144.1	14.0	0.39149	17.4	ppb
⌈>	Lu-KED2	175	59269.4	1.4			ppb
⌊	Pb-KED2	208	296209.2	1.8	49.87713	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-003
Sample Date/Time: Wednesday, August 24, 2016 19:53:22
Sample Description: 5
Autosampler Position: 335
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-003.056
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27002.8	1.6	38.82126	2.7	ppb
|	Cu-KED3	65	13815.7	0.7	39.00251	1.6	ppb
|	Zn-KED3	66	16568.9	2.6	258.23377	4.0	ppb
⌊>	Ge-KED3	72	14087.3	1.7			ppb
⌈>	In-KED2	115	14691.7	1.9			ppb
|	Sb-KED2	121	162.0	6.9	0.31531	10.8	ppb
⌊	Sb-KED2	123	125.1	0.4	0.32150	2.1	ppb
⌈>	Lu-KED2	175	60334.2	2.1			ppb
⌊	Pb-KED2	208	359687.9	1.4	59.50909	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:56:24
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.057
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18444.6	2.0	25.32049	0.8	ppb
|	Cu-KED3	65	9444.5	2.5	25.45800	1.2	ppb
|	Zn-KED3	66	1657.8	0.5	24.57394	0.9	ppb
⌊>	Ge-KED3	72	14741.9	1.4			ppb
⌈>	In-KED2	115	15037.7	4.3			ppb
|	Sb-KED2	121	9602.6	1.4	24.99732	5.0	ppb
⌊	Sb-KED2	123	7652.5	2.6	24.80874	2.0	ppb
⌈>	Lu-KED2	175	56734.5	3.4			ppb
⌊	Pb-KED2	208	144247.1	0.3	25.38393	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		106			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:59:24
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.058
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18.7	22.3	-0.00714	76.4	ppb
|	Cu-KED3	65	5.0	20.0	-0.02469	10.5	ppb
|	Zn-KED3	66	6.7	37.7	-0.01925	191.5	ppb
⌊>	Ge-KED3	72	14602.8	1.7			ppb
⌈>	In-KED2	115	15143.7	2.6			ppb
|	Sb-KED2	121	36.0	33.3	-0.02408	139.6	ppb
⌊	Sb-KED2	123	36.5	18.0	0.02270	80.4	ppb
⌈>	Lu-KED2	175	57168.2	0.4			ppb
⌊	Pb-KED2	208	19.3	33.3	-0.00070	159.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		108			
⌈>	In-KED2	115		107			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 20:02:24
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.059
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	176.7	13.6	0.21397	11.2	ppb
|	Cu-KED3	65	87.0	11.1	0.20200	17.4	ppb
|	Zn-KED3	66	83.0	4.8	1.14093	0.9	ppb
⌊>	Ge-KED3	72	14459.3	4.0			ppb
⌈>	In-KED2	115	15391.6	3.0			ppb
|	Sb-KED2	121	79.3	11.4	0.08450	27.1	ppb
⌊	Sb-KED2	123	60.7	17.3	0.09793	32.2	ppb
⌈>	Lu-KED2	175	58441.1	3.7			ppb
⌊	Pb-KED2	208	620.0	8.6	0.10211	12.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	107				
|	Cu-KED3	65	101				
|	Zn-KED3	66	114				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	85				
⌊	Sb-KED2	123	98				
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-004
Sample Date/Time: Wednesday, August 24, 2016 20:05:25
Sample Description: 5
Autosampler Position: 336
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-004.060
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22037.7	1.3	31.62240	1.7	ppb
¦	Cu-KED3	65	11225.4	0.1	31.63558	2.3	ppb
¦	Zn-KED3	66	12915.8	1.2	200.96518	3.6	ppb
⌊>	Ge-KED3	72	14111.3	2.4			ppb
⌈>	In-KED2	115	14529.7	2.0			ppb
¦	Sb-KED2	121	144.0	12.3	0.27132	17.9	ppb
⌊	Sb-KED2	123	112.0	7.5	0.28222	11.8	ppb
⌈>	Lu-KED2	175	60734.6	3.7			ppb
⌊	Pb-KED2	208	271221.4	1.2	44.60910	4.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
¦	Cu-KED3	65					
¦	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
¦	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		113			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-005
Sample Date/Time: Wednesday, August 24, 2016 20:08:24
Sample Description: 5
Autosampler Position: 337
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-005.061
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28120.3	1.7	41.47726	1.9	ppb
|	Cu-KED3	65	14617.1	1.7	42.33635	0.6	ppb
|	Zn-KED3	66	14698.2	2.7	234.92288	1.6	ppb
⌊>	Ge-KED3	72	13729.3	1.3			ppb
⌈>	In-KED2	115	14535.9	0.2			ppb
|	Sb-KED2	121	146.0	19.2	0.27649	27.4	ppb
⌊	Sb-KED2	123	118.7	2.4	0.30442	2.9	ppb
⌈>	Lu-KED2	175	60470.0	0.5			ppb
⌊	Pb-KED2	208	367510.0	0.8	60.64011	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-006
Sample Date/Time: Wednesday, August 24, 2016 20:11:23
Sample Description: 5
Autosampler Position: 338
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-006.062
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28889.2	1.3	41.98583	2.0	ppb
|	Cu-KED3	65	14810.0	0.6	42.26546	0.1	ppb
|	Zn-KED3	66	12523.2	0.8	197.21687	0.3	ppb
⌊>	Ge-KED3	72	13934.1	0.7			ppb
⌈>	In-KED2	115	14433.8	1.1			ppb
|	Sb-KED2	121	174.0	13.9	0.35503	17.3	ppb
⌊	Sb-KED2	123	130.1	11.3	0.34582	13.8	ppb
⌈>	Lu-KED2	175	60226.1	2.1			ppb
⌊	Pb-KED2	208	402039.9	2.0	66.63682	3.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-010
Sample Date/Time: Wednesday, August 24, 2016 20:14:22
Sample Description: 5
Autosampler Position: 339
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-010.063
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	37874.8	1.8	56.07131	3.3	ppb
|	Cu-KED3	65	19434.5	2.1	56.50701	3.7	ppb
|	Zn-KED3	66	9580.9	2.9	153.67312	4.5	ppb
⌊>	Ge-KED3	72	13684.9	1.5			ppb
⌈>	In-KED2	115	14485.3	2.2			ppb
|	Sb-KED2	121	359.3	1.2	0.85663	2.9	ppb
⌊	Sb-KED2	123	284.0	2.4	0.86453	4.2	ppb
⌈>	Lu-KED2	175	59261.7	2.5			ppb
⌊	Pb-KED2	208	724585.6	0.8	122.03562	2.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-011
Sample Date/Time: Wednesday, August 24, 2016 20:17:21
Sample Description: 5
Autosampler Position: 340
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-011.064
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	42891.6	0.7	62.19830	3.8	ppb
|	Cu-KED3	65	21731.5	1.8	61.89854	4.7	ppb
|	Zn-KED3	66	8009.6	0.4	125.78249	3.4	ppb
⌊>	Ge-KED3	72	13978.5	3.2			ppb
⌈>	In-KED2	115	14754.2	1.3			ppb
|	Sb-KED2	121	1362.7	5.7	3.51173	7.2	ppb
⌊	Sb-KED2	123	1109.0	4.3	3.58069	3.2	ppb
⌈>	Lu-KED2	175	59109.1	2.6			ppb
⌊	Pb-KED2	208	3743737.7	0.8	632.30711	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-012
Sample Date/Time: Wednesday, August 24, 2016 20:20:20
Sample Description: 5
Autosampler Position: 341
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-012.065
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	39029.2	0.6	56.57766	2.1	ppb
|	Cu-KED3	65	20049.4	0.5	57.08231	2.5	ppb
|	Zn-KED3	66	11922.0	1.0	187.22073	1.1	ppb
⌊>	Ge-KED3	72	13974.8	1.9			ppb
⌈>	In-KED2	115	14848.3	0.5			ppb
|	Sb-KED2	121	327.3	10.9	0.74788	12.7	ppb
⌊	Sb-KED2	123	290.6	2.7	0.86231	2.7	ppb
⌈>	Lu-KED2	175	59678.8	1.8			ppb
⌊	Pb-KED2	208	1609253.3	2.6	269.15347	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-013
Sample Date/Time: Wednesday, August 24, 2016 20:23:19
Sample Description: 5
Autosampler Position: 342
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-013.066
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	41082.4	3.1	60.54967	3.8	ppb
	Cu-KED3	65	21470.5	2.0	62.14446	2.8	ppb
	Zn-KED3	66	11134.3	1.7	177.78064	2.7	ppb
>	Ge-KED3	72	13746.6	2.2			ppb
>	In-KED2	115	14639.6	1.3			ppb
	Sb-KED2	121	886.7	7.0	2.26195	8.2	ppb
	Sb-KED2	123	719.3	3.9	2.30886	4.8	ppb
>	Lu-KED2	175	59834.5	3.5			ppb
	Pb-KED2	208	1886579.8	0.5	314.88971	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		102			
>	In-KED2	115		103			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		111			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-014
Sample Date/Time: Wednesday, August 24, 2016 20:26:18
Sample Description: 5
Autosampler Position: 343
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-014.067
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	23983.5	1.4	35.52457	2.0	ppb
|	Cu-KED3	65	12246.2	0.8	35.62116	1.5	ppb
|	Zn-KED3	66	8429.5	1.2	135.27910	1.0	ppb
⌊>	Ge-KED3	72	13669.9	0.8			ppb
⌈>	In-KED2	115	14418.2	3.0			ppb
|	Sb-KED2	121	259.3	4.2	0.58943	8.6	ppb
⌊	Sb-KED2	123	203.0	3.7	0.59381	4.1	ppb
⌈>	Lu-KED2	175	57127.4	2.5			ppb
⌊	Pb-KED2	208	1032441.0	1.5	180.36005	1.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-03
Sample Date/Time: Wednesday, August 24, 2016 20:29:17
Sample Description: 5
Autosampler Position: 344
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609920-03.068
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21.3	42.3	0.00115	1349.4	ppb
|	Cu-KED3	65	9.7	26.0	-0.00831	84.9	ppb
|	Zn-KED3	66	23.0	19.0	0.27549	23.9	ppb
⌊>	Ge-KED3	72	12772.4	3.8			ppb
⌈>	In-KED2	115	13975.6	0.5			ppb
|	Sb-KED2	121	16.7	27.7	-0.07116	18.4	ppb
⌊	Sb-KED2	123	13.6	27.3	-0.04731	27.7	ppb
⌈>	Lu-KED2	175	52955.0	1.8			ppb
⌊	Pb-KED2	208	91.3	7.0	0.01315	10.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-002
Sample Date/Time: Wednesday, August 24, 2016 20:32:16
Sample Description: 5
Autosampler Position: 345
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-002.069
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10917.5	1.1	15.78195	1.9	ppb
|	Cu-KED3	65	5704.5	3.0	16.18904	2.6	ppb
|	Zn-KED3	66	6203.7	1.0	97.24137	0.8	ppb
⌊>	Ge-KED3	72	13990.8	0.8			ppb
⌈>	In-KED2	115	14444.1	1.7			ppb
|	Sb-KED2	121	95.3	6.4	0.14125	12.0	ppb
⌊	Sb-KED2	123	95.2	3.6	0.22719	3.1	ppb
⌈>	Lu-KED2	175	62522.2	1.0			ppb
⌊	Pb-KED2	208	159145.2	2.0	25.39924	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		116			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 20:35:18
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\CCV.070
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17582.1	0.7	25.40409	1.3	ppb
|	Cu-KED3	65	8912.4	1.0	25.28500	0.4	ppb
|	Zn-KED3	66	1577.4	4.0	24.60349	3.5	ppb
⌊>	Ge-KED3	72	14007.9	0.6			ppb
⌈>	In-KED2	115	14863.5	3.4			ppb
|	Sb-KED2	121	9443.1	2.1	24.85598	4.3	ppb
⌊	Sb-KED2	123	7549.5	1.5	24.75922	2.0	ppb
⌈>	Lu-KED2	175	58054.4	1.9			ppb
⌊	Pb-KED2	208	143593.6	0.9	24.68300	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	102				
|	Cu-KED3	65	101				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		105			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 20:38:17
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\CCB.071
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13.3	48.2	-0.01323	71.0	ppb
|	Cu-KED3	65	7.0	37.8	-0.01781	43.6	ppb
|	Zn-KED3	66	3.3	34.6	-0.06534	28.9	ppb
⌊>	Ge-KED3	72	13613.5	1.2			ppb
⌈>	In-KED2	115	14564.5	1.9			ppb
|	Sb-KED2	121	35.3	18.2	-0.02280	73.9	ppb
⌊	Sb-KED2	123	28.5	8.6	0.00053	1426.5	ppb
⌈>	Lu-KED2	175	55499.6	1.3			ppb
⌊	Pb-KED2	208	24.0	54.6	0.00025	953.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-003
Sample Date/Time: Wednesday, August 24, 2016 20:41:19
Sample Description: 5
Autosampler Position: 346
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-003.072
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	10952.9	0.6	16.16564	1.1	ppb
	Cu-KED3	65	5696.8	0.9	16.51187	2.4	ppb
	Zn-KED3	66	5834.9	1.6	93.37659	1.4	ppb
>	Ge-KED3	72	13703.9	1.6			ppb
>	In-KED2	115	14220.8	1.2			ppb
	Sb-KED2	121	96.0	18.2	0.14675	30.8	ppb
	Sb-KED2	123	70.1	7.2	0.14593	10.1	ppb
>	Lu-KED2	175	60836.0	2.8			ppb
	Pb-KED2	208	140964.1	2.1	23.11988	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		101			
>	In-KED2	115		100			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		113			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-004
Sample Date/Time: Wednesday, August 24, 2016 20:44:18
Sample Description: 5
Autosampler Position: 347
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-004.073
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14996.5	1.0	22.43444	2.6	ppb
|	Cu-KED3	65	7536.7	2.2	22.13830	3.2	ppb
|	Zn-KED3	66	6798.0	2.7	110.18758	1.2	ppb
⌊>	Ge-KED3	72	13531.1	2.2			ppb
⌈>	In-KED2	115	14495.5	2.1			ppb
|	Sb-KED2	121	126.0	2.7	0.22360	7.3	ppb
⌊	Sb-KED2	123	110.5	4.5	0.27786	3.3	ppb
⌈>	Lu-KED2	175	62222.0	3.9			ppb
⌊	Pb-KED2	208	186870.5	1.0	30.00126	4.9	ppb

QC Calculated Values

	IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈		Cu-KED3	63					
|		Cu-KED3	65					
|		Zn-KED3	66					
⌊>		Ge-KED3	72		100			
⌈>		In-KED2	115		102			
|		Sb-KED2	121					
⌊		Sb-KED2	123					
⌈>		Lu-KED2	175		115			
⌊		Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-005
Sample Date/Time: Wednesday, August 24, 2016 20:47:17
Sample Description: 5
Autosampler Position: 348
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-005.074
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17634.9	1.1	25.88823	2.4	ppb
|	Cu-KED3	65	8815.7	2.5	25.41102	3.1	ppb
|	Zn-KED3	66	7318.2	2.0	116.41571	2.2	ppb
⌊>	Ge-KED3	72	13789.7	1.3			ppb
⌈>	In-KED2	115	14539.9	1.5			ppb
|	Sb-KED2	121	167.3	10.8	0.33403	14.6	ppb
⌊	Sb-KED2	123	150.5	5.1	0.41140	6.9	ppb
⌈>	Lu-KED2	175	61464.0	1.9			ppb
⌊	Pb-KED2	208	276688.9	0.9	44.92145	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		114			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-008
Sample Date/Time: Wednesday, August 24, 2016 20:50:16
Sample Description: 5
Autosampler Position: 349
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-008.075
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15706.0	1.4	27.28306	4.4	ppb
|	Cu-KED3	65	8052.9	2.2	27.47376	5.1	ppb
|	Zn-KED3	66	5998.6	1.1	112.96043	5.4	ppb
⌊>	Ge-KED3	72	11666.1	4.4			ppb
⌈>	In-KED2	115	13013.5	0.6			ppb
|	Sb-KED2	121	157.3	11.5	0.35683	15.3	ppb
⌊	Sb-KED2	123	123.1	3.6	0.36770	3.8	ppb
⌈>	Lu-KED2	175	53534.8	1.8			ppb
⌊	Pb-KED2	208	210663.3	0.9	39.27325	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-009
Sample Date/Time: Wednesday, August 24, 2016 20:53:15
Sample Description: 5
Autosampler Position: 350
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-009.076
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10018.8	1.9	18.01340	3.7	ppb
|	Cu-KED3	65	5159.6	2.6	18.21780	4.6	ppb
|	Zn-KED3	66	4066.6	1.1	79.22042	1.3	ppb
⌊>	Ge-KED3	72	11256.1	2.2			ppb
⌈>	In-KED2	115	12727.1	1.4			ppb
|	Sb-KED2	121	98.7	15.3	0.18694	27.4	ppb
⌊	Sb-KED2	123	78.9	14.7	0.20842	22.7	ppb
⌈>	Lu-KED2	175	52064.7	1.4			ppb
⌊	Pb-KED2	208	100342.4	1.2	19.22987	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-010
Sample Date/Time: Wednesday, August 24, 2016 20:56:14
Sample Description: 5
Autosampler Position: 351
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-010.077
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13390.9	2.0	24.15003	1.9	ppb
|	Cu-KED3	65	6766.6	1.4	23.96787	2.8	ppb
|	Zn-KED3	66	4751.5	1.3	92.85246	0.9	ppb
⌊>	Ge-KED3	72	11222.1	1.6			ppb
⌈>	In-KED2	115	12795.6	2.7			ppb
|	Sb-KED2	121	92.0	17.8	0.16364	25.9	ppb
⌊	Sb-KED2	123	84.2	10.8	0.22689	15.0	ppb
⌈>	Lu-KED2	175	52303.3	1.7			ppb
⌊	Pb-KED2	208	126288.5	1.5	24.08918	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011
Sample Date/Time: Wednesday, August 24, 2016 20:59:13
Sample Description: 5
Autosampler Position: 352
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\K1608344-011.078
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20235.7	1.6	34.88099	3.2	ppb
|	Cu-KED3	65	10278.0	0.2	34.78832	2.3	ppb
|	Zn-KED3	66	5706.1	2.7	106.50007	0.7	ppb
⌊>	Ge-KED3	72	11750.2	2.1			ppb
⌈>	In-KED2	115	12910.3	3.9			ppb
|	Sb-KED2	121	143.3	8.5	0.31940	16.7	ppb
⌊	Sb-KED2	123	94.0	6.6	0.26097	5.4	ppb
⌈>	Lu-KED2	175	52506.3	2.1			ppb
⌊	Pb-KED2	208	273776.4	1.9	52.04334	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011L
Sample Date/Time: Wednesday, August 24, 2016 21:02:12
Sample Description: 25
Autosampler Position: 353
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011L.079
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	4625.4	3.3	7.25352	4.9	ppb
|	Cu-KED3	65	2352.5	0.7	7.23782	1.6	ppb
|	Zn-KED3	66	1319.4	2.4	22.39973	4.2	ppb
⌊>	Ge-KED3	72	12871.5	2.1			ppb
⌈>	In-KED2	115	14017.8	4.9			ppb
|	Sb-KED2	121	44.7	10.3	0.00764	238.1	ppb
⌊	Sb-KED2	123	40.8	13.1	0.04709	31.1	ppb
⌈>	Lu-KED2	175	55323.3	1.0			ppb
⌊	Pb-KED2	208	60253.4	1.9	10.86424	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011A
Sample Date/Time: Wednesday, August 24, 2016 21:05:11
Sample Description: 5 +50ppb
Autosampler Position: 354
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011A.080
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	47812.6	2.2	83.09534	0.7	ppb
|	Cu-KED3	65	24272.3	2.2	82.84558	0.2	ppb
|	Zn-KED3	66	8325.8	0.4	156.76991	2.2	ppb
⌊>	Ge-KED3	72	11656.1	2.4			ppb
⌈>	In-KED2	115	12839.9	1.8			ppb
|	Sb-KED2	121	17056.2	2.1	52.06843	2.9	ppb
⌊	Sb-KED2	123	13593.7	1.0	51.69293	0.9	ppb
⌈>	Lu-KED2	175	52626.8	0.8			ppb
⌊	Pb-KED2	208	520602.0	1.2	98.70253	0.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011S
Sample Date/Time: Wednesday, August 24, 2016 21:08:09
Sample Description: 5
Autosampler Position: 355
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011S.081
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	74038.0	0.9	129.74716	1.6	ppb
|	Cu-KED3	65	37603.8	1.6	129.45241	3.4	ppb
|	Zn-KED3	66	15784.4	1.9	299.73234	3.5	ppb
⌊>	Ge-KED3	72	11563.0	1.9			ppb
⌈>	In-KED2	115	13059.1	0.7			ppb
|	Sb-KED2	121	25413.3	2.1	76.31279	1.8	ppb
⌊	Sb-KED2	123	20288.1	1.7	75.88828	1.0	ppb
⌈>	Lu-KED2	175	53621.8	1.4			ppb
⌊	Pb-KED2	208	1248958.3	1.2	232.42677	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:11:10
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.082
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16359.4	4.6	25.13434	5.6	ppb
|	Cu-KED3	65	8301.1	3.2	25.03626	3.5	ppb
|	Zn-KED3	66	1491.7	3.4	24.74384	4.4	ppb
⌊>	Ge-KED3	72	13178.1	1.1			ppb
⌈>	In-KED2	115	14280.0	2.1			ppb
|	Sb-KED2	121	9219.0	2.8	25.23587	0.7	ppb
⌊	Sb-KED2	123	7486.1	2.4	25.54514	0.3	ppb
⌈>	Lu-KED2	175	54213.1	3.1			ppb
⌊	Pb-KED2	208	138582.6	0.1	25.51885	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	100				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		101			
|	Sb-KED2	121	101				
⌊	Sb-KED2	123	102				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:14:10
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.083
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8.0	25.0	-0.02045	15.9	ppb
|	Cu-KED3	65	3.3	34.6	-0.02810	12.1	ppb
|	Zn-KED3	66	5.3	10.8	-0.02884	27.5	ppb
⌊>	Ge-KED3	72	12948.9	2.3			ppb
⌈>	In-KED2	115	13874.7	4.0			ppb
|	Sb-KED2	121	33.3	15.1	-0.02320	77.2	ppb
⌊	Sb-KED2	123	27.5	32.7	0.00231	1403.0	ppb
⌈>	Lu-KED2	175	53474.0	4.7			ppb
⌊	Pb-KED2	208	28.0	31.1	0.00117	144.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		96			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 21:17:09
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.084
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	146.0	4.1	0.19755	6.2	ppb
|	Cu-KED3	65	84.3	8.6	0.22348	12.3	ppb
|	Zn-KED3	66	63.3	7.1	0.96577	11.3	ppb
⌊>	Ge-KED3	72	12842.8	3.1			ppb
⌈>	In-KED2	115	13858.2	3.3			ppb
|	Sb-KED2	121	68.7	21.1	0.07616	49.9	ppb
⌊	Sb-KED2	123	53.1	19.0	0.09212	36.9	ppb
⌈>	Lu-KED2	175	54260.6	3.0			ppb
⌊	Pb-KED2	208	586.7	6.4	0.10394	8.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	112				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121	76				
⌊	Sb-KED2	123	92				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	104				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011SD
Sample Date/Time: Wednesday, August 24, 2016 21:20:10
Sample Description: 5
Autosampler Position: 356
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011SD.085
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	73305.7	3.0	126.03621	6.6	ppb
|	Cu-KED3	65	37095.1	2.7	125.25607	6.4	ppb
|	Zn-KED3	66	15623.2	2.7	290.98186	6.3	ppb
⌊>	Ge-KED3	72	11802.9	3.8			ppb
⌈>	In-KED2	115	12916.9	2.1			ppb
|	Sb-KED2	121	25087.3	1.9	76.17710	2.0	ppb
⌊	Sb-KED2	123	19932.9	1.4	75.39295	1.1	ppb
⌈>	Lu-KED2	175	53550.9	3.7			ppb
⌊	Pb-KED2	208	1232067.0	1.4	229.78719	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-04
Sample Date/Time: Wednesday, August 24, 2016 21:23:09
Sample Description: 5
Autosampler Position: 357
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609920-04.086
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	64658.7	2.3	103.03853	2.3	ppb
|	Cu-KED3	65	33284.7	1.5	104.17989	2.1	ppb
|	Zn-KED3	66	12337.7	3.1	212.97432	3.0	ppb
⌊>	Ge-KED3	72	12713.3	1.3			ppb
⌈>	In-KED2	115	13789.7	4.3			ppb
|	Sb-KED2	121	73006.8	1.8	208.13180	5.4	ppb
⌊	Sb-KED2	123	58774.5	1.4	208.54090	2.8	ppb
⌈>	Lu-KED2	175	53071.9	4.4			ppb
⌊	Pb-KED2	208	1096580.6	1.0	206.47658	5.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 21:26:10
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.087
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	35.3	34.1	0.02048	86.5	ppb
	Cu-KED3	65	15.3	26.4	0.00727	159.5	ppb
	Zn-KED3	66	11.0	31.5	0.06093	89.6	ppb
>	Ge-KED3	72	13368.3	1.7			ppb
>	In-KED2	115	14264.6	0.8			ppb
	Sb-KED2	121	48.7	35.0	0.01609	293.9	ppb
	Sb-KED2	123	33.6	3.7	0.02016	22.5	ppb
>	Lu-KED2	175	55404.6	1.0			ppb
	Pb-KED2	208	47.3	20.0	0.00446	39.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		99			
>	In-KED2	115		100			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		103			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-012
Sample Date/Time: Wednesday, August 24, 2016 21:29:11
Sample Description: 5
Autosampler Position: 358
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-012.088
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2.7	114.6	-0.02713	23.7	ppb
|	Cu-KED3	65	3.3	34.6	0.03368	234.3	ppb
|	Zn-KED3	66	2.0	86.6	0.38981	182.1	ppb
⌊>	Ge-KED3	72	9538.7	140.5			ppb
⌈>	In-KED2	115	11429.8	82.1			ppb
|	Sb-KED2	121	5.3	86.6	-0.10403	12.9	ppb
⌊	Sb-KED2	123	1.9	6.7	-0.07571	29.7	ppb
⌈>	Lu-KED2	175	44820.0	90.8			ppb
⌊	Pb-KED2	208	23.3	9.9	0.00971	166.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		71			
⌈>	In-KED2	115		80			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		83			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

No Uptake
JB 8/25/16

LABWORKS - Summary Report

Sample ID: KQ1609300-03
Sample Date/Time: Wednesday, August 24, 2016 21:32:10
Sample Description: 5
Autosampler Position: 359
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\KQ1609300-03.089
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.0	57.7	-0.01371	82.2	ppb
|	Cu-KED3	65	6.0	16.7	-0.01941	15.8	ppb
|	Zn-KED3	66	18.0	20.0	0.19370	33.2	ppb
⌊>	Ge-KED3	72	12641.3	0.6			ppb
⌈>	In-KED2	115	13959.7	4.4			ppb
|	Sb-KED2	121	14.0	65.5	-0.07793	35.1	ppb
⌊	Sb-KED2	123	9.1	27.5	-0.06308	15.0	ppb
⌈>	Lu-KED2	175	52173.8	0.9			ppb
⌊	Pb-KED2	208	88.7	15.0	0.01290	20.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-004
Sample Date/Time: Wednesday, August 24, 2016 21:35:09
Sample Description: 5
Autosampler Position: 360
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-004.090
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	24401.5	1.3	36.64391	3.7	ppb
¦	Cu-KED3	65	12123.5	1.6	35.74703	3.3	ppb
¦	Zn-KED3	66	5918.9	2.8	96.26694	4.2	ppb
⌊>	Ge-KED3	72	13490.4	2.4			ppb
⌈>	In-KED2	115	14130.5	4.8			ppb
¦	Sb-KED2	121	126.0	15.1	0.23123	16.8	ppb
⌊	Sb-KED2	123	107.4	10.6	0.27640	11.2	ppb
⌈>	Lu-KED2	175	57524.3	2.9			ppb
⌊	Pb-KED2	208	274638.6	1.1	47.66919	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
¦	Cu-KED3	65					
¦	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		100			
¦	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-005
Sample Date/Time: Wednesday, August 24, 2016 21:38:10
Sample Description: 5
Autosampler Position: 101
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-005.091
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	2.7	43.3	0.08999	138.8	ppb
	Cu-KED3	65	1.0	100.0	0.01567	400.5	ppb
	Zn-KED3	66	0.7	86.6	0.23452	154.1	ppb
>	Ge-KED3	72	657.0	54.4			ppb
>	In-KED2	115	17818.6	107.9			ppb
	Sb-KED2	121	2.7	173.2	-0.11529	4.1	ppb
	Sb-KED2	123	2.5	61.3	-0.03417	267.9	ppb
>	Lu-KED2	175	69678.4	109.3			ppb
	Pb-KED2	208	21.3	48.1	0.01343	185.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		5			
>	In-KED2	115		125			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		129			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ge-KED3 72 Int Std for samp	Ge-KED3	72	IS out of control
In-KED2 115 Int Std for samp	In-KED2	115	IS out of control
Lu-KED2 175 Int Std for sam	Lu-KED2	175	IS out of control

No Uptake
JB 8/25/16

LABWORKS - Summary Report

Sample ID: K1608209-006
Sample Date/Time: Wednesday, August 24, 2016 21:41:08
Sample Description: 5
Autosampler Position: 102
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-006.092
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	40022.0	0.2	59.87426	3.1	ppb
|	Cu-KED3	65	20678.6	0.3	60.75094	2.7	ppb
|	Zn-KED3	66	8065.3	3.2	130.61607	1.8	ppb
⌊>	Ge-KED3	72	13546.4	2.9			ppb
⌈>	In-KED2	115	14444.0	1.7			ppb
|	Sb-KED2	121	186.0	7.5	0.38745	7.7	ppb
⌊	Sb-KED2	123	145.8	6.6	0.39852	7.1	ppb
⌈>	Lu-KED2	175	57849.9	0.9			ppb
⌊	Pb-KED2	208	463770.4	1.4	79.98763	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-007
Sample Date/Time: Wednesday, August 24, 2016 21:44:08
Sample Description: 5
Autosampler Position: 103
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-007.093
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21559.6	1.2	33.38692	4.8	ppb
|	Cu-KED3	65	10889.8	0.6	33.11217	4.2	ppb
|	Zn-KED3	66	5859.9	1.1	98.26881	3.6	ppb
⌊>	Ge-KED3	72	13088.0	3.6			ppb
⌈>	In-KED2	115	14291.9	0.8			ppb
|	Sb-KED2	121	184.7	7.2	0.38969	10.4	ppb
⌊	Sb-KED2	123	137.6	3.7	0.37591	3.6	ppb
⌈>	Lu-KED2	175	57523.9	1.1			ppb
⌊	Pb-KED2	208	382742.3	1.1	66.39706	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010
Sample Date/Time: Wednesday, August 24, 2016 21:47:07
Sample Description: 5
Autosampler Position: 104
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010.094
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	34224.3	1.0	51.34678	3.3	ppb
|	Cu-KED3	65	17471.0	1.4	51.47995	3.7	ppb
|	Zn-KED3	66	9266.0	1.2	150.60112	3.4	ppb
⌊>	Ge-KED3	72	13505.7	2.4			ppb
⌈>	In-KED2	115	14373.1	2.6			ppb
|	Sb-KED2	121	614.0	0.3	1.56057	2.7	ppb
⌊	Sb-KED2	123	467.3	1.1	1.49624	4.0	ppb
⌈>	Lu-KED2	175	57873.1	3.2			ppb
⌊	Pb-KED2	208	894314.8	0.6	154.30637	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:50:07
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.095
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	4.0	50.0	2.17826	129.6	ppb
	Cu-KED3	65	1.7	69.3	2.76009	162.1	ppb
	Zn-KED3	66	1.3	43.3	6.27034	118.3	ppb
>	Ge-KED3	72	313.3	141.3			ppb
>	In-KED2	115	11516.3	157.1			ppb
	Sb-KED2	121	6.7	75.5	0.22788	241.9	ppb
	Sb-KED2	123	1.2	111.5	0.00580	3052.3	ppb
>	Lu-KED2	175	43454.3	159.4			ppb
	Pb-KED2	208	178.0	69.1	1.09193	166.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	9				
	Cu-KED3	65	11				
	Zn-KED3	66	25				
>	Ge-KED3	72		2			
>	In-KED2	115		81			
	Sb-KED2	121	1				
	Sb-KED2	123	0				
>	Lu-KED2	175		81			
	Pb-KED2	208	4				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Cu-KED3	63	Out of Control
QC Std 2	Cu-KED3	65	Out of Control
QC Std 2	Zn-KED3	66	Out of Control
Ge-KED3 72 Int Std for QC S	Ge-KED3	72	IS out of control
QC Std 2	Sb-KED2	121	Out of Control
QC Std 2	Sb-KED2	123	Out of Control
QC Std 2	Pb-KED2	208	Out of Control

JDB 8/25/16 See Run

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:52:26
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.096
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17434.6	1.2	25.69015	1.7	ppb
|	Cu-KED3	65	8929.5	2.3	25.84217	3.5	ppb
|	Zn-KED3	66	1585.4	2.6	25.23393	4.3	ppb
⌊>	Ge-KED3	72	13738.6	2.5			ppb
⌈>	In-KED2	115	14619.4	1.5			ppb
|	Sb-KED2	121	9296.4	1.3	24.86494	2.9	ppb
⌊	Sb-KED2	123	7586.5	0.4	25.29192	1.9	ppb
⌈>	Lu-KED2	175	55333.6	1.6			ppb
⌊	Pb-KED2	208	140636.2	1.5	25.36455	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	103				
|	Cu-KED3	65	103				
|	Zn-KED3	66	101				
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	101				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:55:25
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.097
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.7	59.8	-0.01461	75.9	ppb
|	Cu-KED3	65	8.0	45.1	-0.01544	69.3	ppb
|	Zn-KED3	66	4.0	66.1	-0.05657	72.8	ppb
⌊>	Ge-KED3	72	13991.5	1.7			ppb
⌈>	In-KED2	115	14684.0	3.8			ppb
|	Sb-KED2	121	32.0	32.5	-0.03162	100.5	ppb
⌊	Sb-KED2	123	26.9	13.5	-0.00516	263.6	ppb
⌈>	Lu-KED2	175	54281.9	1.5			ppb
⌊	Pb-KED2	208	20.0	72.1	-0.00037	723.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010L
Sample Date/Time: Wednesday, August 24, 2016 21:58:26
Sample Description: 25
Autosampler Position: 105
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010L.098
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	7431.9	1.6	10.71723	1.2	ppb
|	Cu-KED3	65	3800.5	1.2	10.76040	2.1	ppb
|	Zn-KED3	66	1977.1	2.1	30.87051	2.4	ppb
⌊>	Ge-KED3	72	14009.9	1.3			ppb
⌈>	In-KED2	115	14686.4	4.3			ppb
|	Sb-KED2	121	140.7	9.1	0.25887	15.9	ppb
⌊	Sb-KED2	123	110.1	10.2	0.27125	8.9	ppb
⌈>	Lu-KED2	175	57331.8	1.2			ppb
⌊	Pb-KED2	208	185067.4	0.5	32.20948	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010A
Sample Date/Time: Wednesday, August 24, 2016 22:01:25
Sample Description: 5 +50ppb
Autosampler Position: 106
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010A.099
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	66729.5	2.2	101.04332	3.3	ppb
	Cu-KED3	65	34415.7	1.0	102.33909	2.0	ppb
	Zn-KED3	66	12348.7	0.1	202.51591	1.3	ppb
>	Ge-KED3	72	13381.9	1.1			ppb
>	In-KED2	115	14604.4	2.0			ppb
	Sb-KED2	121	19087.4	2.1	51.24225	4.1	ppb
	Sb-KED2	123	15166.3	1.2	50.70398	0.8	ppb
>	Lu-KED2	175	58205.0	0.9			ppb
	Pb-KED2	208	1172297.0	1.0	200.97738	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		99			
>	In-KED2	115		103			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		108			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010S
Sample Date/Time: Wednesday, August 24, 2016 22:04:24
Sample Description: 5
Autosampler Position: 107
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010S.100
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	94074.7	0.7	142.71648	5.2	ppb
|	Cu-KED3	65	47708.5	0.2	142.12412	4.6	ppb
|	Zn-KED3	66	21210.7	1.5	348.73457	6.3	ppb
⌊>	Ge-KED3	72	13376.3	4.7			ppb
⌈>	In-KED2	115	14155.9	1.8			ppb
|	Sb-KED2	121	31282.9	1.5	86.69917	2.5	ppb
⌊	Sb-KED2	123	24888.6	1.3	85.91204	1.6	ppb
⌈>	Lu-KED2	175	58140.4	2.2			ppb
⌊	Pb-KED2	208	2325902.8	1.1	399.32489	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010SD
Sample Date/Time: Wednesday, August 24, 2016 22:07:23
Sample Description: 5
Autosampler Position: 108
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010SD.101
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	101265.1	1.9	153.30457	1.8	ppb
|	Cu-KED3	65	51568.9	1.2	153.32723	0.7	ppb
|	Zn-KED3	66	22098.7	0.7	362.45404	0.9	ppb
⌊>	Ge-KED3	72	13382.9	0.5			ppb
⌈>	In-KED2	115	14326.2	2.0			ppb
|	Sb-KED2	121	31200.0	2.2	85.42489	1.8	ppb
⌊	Sb-KED2	123	24372.5	1.7	83.12212	1.2	ppb
⌈>	Lu-KED2	175	58897.9	2.9			ppb
⌊	Pb-KED2	208	2507746.4	1.3	425.13980	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609300-04
Sample Date/Time: Wednesday, August 24, 2016 22:10:22
Sample Description: 5
Autosampler Position: 109
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609300-04.102
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66065.1	0.7	97.09979	1.8	ppb
|	Cu-KED3	65	34004.4	0.2	98.16021	2.0	ppb
|	Zn-KED3	66	12327.0	0.7	196.26377	2.2	ppb
⌊>	Ge-KED3	72	13786.0	1.8			ppb
⌈>	In-KED2	115	14599.9	1.9			ppb
|	Sb-KED2	121	73240.0	2.7	196.97831	3.8	ppb
⌊	Sb-KED2	123	58642.8	1.8	196.36797	0.2	ppb
⌈>	Lu-KED2	175	57041.3	1.7			ppb
⌊	Pb-KED2	208	1071343.6	0.5	187.43690	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 22:13:24
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.103
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	42.0	8.2	0.02633	14.9	ppb
|	Cu-KED3	65	17.3	12.0	0.00982	58.4	ppb
|	Zn-KED3	66	13.0	20.4	0.08007	52.0	ppb
⌊>	Ge-KED3	72	14335.9	1.6			ppb
⌈>	In-KED2	115	14624.3	2.0			ppb
|	Sb-KED2	121	45.3	13.5	0.00380	444.0	ppb
⌊	Sb-KED2	123	39.5	12.8	0.03688	43.0	ppb
⌈>	Lu-KED2	175	55989.2	1.0			ppb
⌊	Pb-KED2	208	60.0	23.3	0.00664	38.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		106			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		104			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-011
Sample Date/Time: Wednesday, August 24, 2016 22:16:25
Sample Description: 5
Autosampler Position: 110
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-011.104
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26369.0	2.7	39.38632	2.8	ppb
|	Cu-KED3	65	13380.6	1.2	39.24630	0.5	ppb
|	Zn-KED3	66	8243.4	2.4	133.38592	1.7	ppb
⌊>	Ge-KED3	72	13556.4	0.7			ppb
⌈>	In-KED2	115	13275.7	5.6			ppb
|	Sb-KED2	121	987.4	5.0	2.80828	6.9	ppb
⌊	Sb-KED2	123	787.4	1.4	2.81075	4.5	ppb
⌈>	Lu-KED2	175	54200.3	7.1			ppb
⌊	Pb-KED2	208	2369560.4	1.0	437.73514	7.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		93			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-012
Sample Date/Time: Wednesday, August 24, 2016 22:19:24
Sample Description: 5
Autosampler Position: 111
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608209-012.105
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	19949.3	1.1	29.82367	2.1	ppb
|	Cu-KED3	65	10223.7	0.8	30.01191	1.3	ppb
|	Zn-KED3	66	9508.8	1.1	154.08014	2.3	ppb
⌊>	Ge-KED3	72	13543.1	1.7			ppb
⌈>	In-KED2	115	14321.0	3.9			ppb
|	Sb-KED2	121	254.0	0.8	0.57928	4.5	ppb
⌊	Sb-KED2	123	203.0	4.3	0.59956	8.8	ppb
⌈>	Lu-KED2	175	58192.6	1.8			ppb
⌊	Pb-KED2	208	511287.3	0.3	87.68303	1.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-013
Sample Date/Time: Wednesday, August 24, 2016 22:22:23
Sample Description: 5
Autosampler Position: 112
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-013.106
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25719.8	0.7	38.97129	1.0	ppb
|	Cu-KED3	65	13219.4	2.0	39.33485	1.9	ppb
|	Zn-KED3	66	7966.9	1.3	130.78042	0.7	ppb
⌊>	Ge-KED3	72	13363.2	0.6			ppb
⌈>	In-KED2	115	14385.3	2.6			ppb
|	Sb-KED2	121	234.7	4.7	0.52349	8.8	ppb
⌊	Sb-KED2	123	206.8	4.7	0.60844	5.7	ppb
⌈>	Lu-KED2	175	56610.7	2.7			ppb
⌊	Pb-KED2	208	605984.9	0.9	106.87018	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-014
Sample Date/Time: Wednesday, August 24, 2016 22:25:22
Sample Description: 5
Autosampler Position: 113
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-014.107
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43728.8	0.6	64.23268	1.0	ppb
|	Cu-KED3	65	21905.5	2.5	63.18455	1.9	ppb
|	Zn-KED3	66	10208.3	2.2	162.42701	2.1	ppb
⌊>	Ge-KED3	72	13790.0	1.2			ppb
⌈>	In-KED2	115	14499.4	2.2			ppb
|	Sb-KED2	121	1024.7	2.1	2.65946	4.5	ppb
⌊	Sb-KED2	123	775.6	2.5	2.52278	4.5	ppb
⌈>	Lu-KED2	175	58350.7	3.6			ppb
⌊	Pb-KED2	208	2605137.0	2.1	445.90559	4.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 22:28:23
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.108
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17853.8	2.9	25.01894	2.3	ppb
|	Cu-KED3	65	9449.1	4.7	26.00028	4.0	ppb
|	Zn-KED3	66	1644.8	2.8	24.88640	2.1	ppb
⌊>	Ge-KED3	72	14441.3	1.0			ppb
⌈>	In-KED2	115	15224.3	0.6			ppb
|	Sb-KED2	121	9724.0	1.5	24.97010	2.0	ppb
⌊	Sb-KED2	123	7762.8	2.1	24.84463	1.9	ppb
⌈>	Lu-KED2	175	56381.8	2.5			ppb
⌊	Pb-KED2	208	144512.0	1.1	25.57704	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	104				
|	Zn-KED3	66	100				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		107			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 22:31:22
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.109
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11.3	62.0	-0.01692	58.3	ppb
|	Cu-KED3	65	5.3	21.7	-0.02338	12.8	ppb
|	Zn-KED3	66	5.7	44.4	-0.03194	118.8	ppb
⌊>	Ge-KED3	72	14200.1	2.0			ppb
⌈>	In-KED2	115	15084.0	0.8			ppb
|	Sb-KED2	121	43.3	18.7	-0.00507	435.3	ppb
⌊	Sb-KED2	123	29.7	10.1	0.00141	636.8	ppb
⌈>	Lu-KED2	175	56491.5	0.8			ppb
⌊	Pb-KED2	208	32.0	21.7	0.00158	75.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 22:34:22
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.110
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	156.7	12.8	0.19053	14.8	ppb
|	Cu-KED3	65	80.0	10.2	0.18585	11.8	ppb
|	Zn-KED3	66	70.7	2.9	0.97341	3.4	ppb
⌊>	Ge-KED3	72	14201.7	0.5			ppb
⌈>	In-KED2	115	15178.7	1.8			ppb
|	Sb-KED2	121	70.0	21.6	0.06360	66.5	ppb
⌊	Sb-KED2	123	54.5	13.9	0.08102	33.0	ppb
⌈>	Lu-KED2	175	56225.1	0.9			ppb
⌊	Pb-KED2	208	621.3	4.4	0.10618	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	95				
|	Cu-KED3	65	93				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		107			
|	Sb-KED2	121	64				
⌊	Sb-KED2	123	81				
⌈>	Lu-KED2	175		104			
⌊	Pb-KED2	208	106				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

Service Request # K1608325
Calibration 082516AMS04
QC in calibration 082516AMS04
QC Service Request # K1608325
STARLIMS run # 511623

CAL STD	MS20-83-K	ICSA STD	MS20-83-H
ICV STD	MS20-72-E	ICSAB STD	MS20-83-I
LLICV STD	MS20-72-F		
Internal STD	MS20-58-A		

6020 DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD limit?	X		
12. Spikes within DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?		X	
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?	X		
21. Cd Correction Applied?		X	
22. Was run prematurely stopped, If so why?		X	

Comments: LRSTD : 1000ppb
#11 Pb Dilution

Primary Review by JDB Date 8/25/16
Secondary Review by [signature] Date 8/25/16

Data Review Form

Service Request #:	**K1608325**
Instrument ID#:	**K-ICP-MS-04**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-04 (NexION)\082516a.txt**
RUNNO:	**511623**

There are no issues to report.

Primary Approver: JBS 8/25/16

Secondary Approver: 8/25/16

Dataset Report

User Name: ALKLS.ALKLSXP373
Computer Name: ALKLSXP373
Dataset File Path: C:\NexION Data\DataSet\082516A\
Report Date/Time: Thursday, August 25, 2016 13:43:35

The Dataset

Sample ID	Date and Time	Read Type	Description	Batch ID	Samp. File Name
RINSE	12:44:08 Thu 25-Aug-16	Sample			C:\NexION Data\DataSet\082516A\RINSE.001
Blank	12:47:03 Thu 25-Aug-16	Blank			C:\NexION Data\DataSet\082516A\Blank.002
Standard 1	12:49:57 Thu 25-Aug-16	Standard #1			C:\NexION Data\DataSet\082516A\Standard 1
ICV	12:52:51 Thu 25-Aug-16	QC Std #1			C:\NexION Data\DataSet\082516A\ICV.004
CCV	12:55:46 Thu 25-Aug-16	QC Std #2			C:\NexION Data\DataSet\082516A\CCV.005
ICB	12:58:40 Thu 25-Aug-16	QC Std #3			C:\NexION Data\DataSet\082516A\ICB.006
CCB	13:01:35 Thu 25-Aug-16	QC Std #4			C:\NexION Data\DataSet\082516A\CCB.007
LLICVS	13:04:30 Thu 25-Aug-16	QC Std #5			C:\NexION Data\DataSet\082516A\LLICVS.00
ICSA	13:07:24 Thu 25-Aug-16	QC Std #7			C:\NexION Data\DataSet\082516A\ICSA.009
ICSAB	13:10:18 Thu 25-Aug-16	QC Std #8			C:\NexION Data\DataSet\082516A\ICSAB.010
1000ppb LR	13:13:15 Thu 25-Aug-16	Sample			C:\NexION Data\DataSet\082516A\1000ppb LI
RINSE	13:16:12 Thu 25-Aug-16	Sample			C:\NexION Data\DataSet\082516A\RINSE.012
K1608209-005	13:19:08 Thu 25-Aug-16	Sample	5		C:\NexION Data\DataSet\082516A\K1608209-
K1608344-012	13:22:02 Thu 25-Aug-16	Sample	5		C:\NexION Data\DataSet\082516A\K1608344-
K1608325-011	13:24:56 Thu 25-Aug-16	Sample	500		C:\NexION Data\DataSet\082516A\K1608325-
CCV	13:27:52 Thu 25-Aug-16	QC Std #2			C:\NexION Data\DataSet\082516A\CCV.016
CCB	13:30:46 Thu 25-Aug-16	QC Std #4			C:\NexION Data\DataSet\082516A\CCB.017
LLCCVS	13:33:41 Thu 25-Aug-16	QC Std #6			C:\NexION Data\DataSet\082516A\LLCCVS.0
LLCCVS	13:41:59 Thu 25-Aug-16	Sample			C:\NexION Data\DataSet\082516A\LLCCVS.0

SmartTune Wizard - Details

ptimization Details

martTune file: C:\NexIONData\Wizard\SmartTune\CAS SmartTune Full FAST.swz

ptimization Status

tart Time: 8/25/2016 10:58:19 AM

lass Calibration and Resolution
Optimization Settings:
Method: C:\NexIONData\Method\CAS Tuning.mth.
MassCal File: C:\NexIONData\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.1 for Mass Cal. and 0.1 for Resolution
Peak height (%) for Res. Opt.: 5

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.677)
Target/Obtained mass (9.0122/9.025), Target/Obtained resolution (0.7/0.689)
Target/Obtained mass (23.985/23.925), Target/Obtained resolution (0.7/0.707)
Target/Obtained mass (58.9332/58.925), Target/Obtained resolution (0.7/0.691)
Target/Obtained mass (114.904/114.875), Target/Obtained resolution (0.7/0.685)
Target/Obtained mass (139.905/139.875), Target/Obtained resolution (0.7/0.701)
Target/Obtained mass (207.977/207.975), Target/Obtained resolution (0.7/0.698)
Target/Obtained mass (208.98/208.975), Target/Obtained resolution (0.7/0.698)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.701)
Passed] Optimum value(s): N/A

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Thursday, August 25, 2016 11:03:31
Sample Description:
Method File: C:\NexION Data\Method\CAS Daily Performance.mth
Dataset File: C:\NexION Data\Dataset\Default\Daily Performance Check.3544
MassCal File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Li	7.0	27296.9	27296.861	477.588	1.7	Standard
	Be	9.0	9170.0	9170.009	152.620	1.7	Standard
	Mg	24.0	25953.4	25953.429	555.106	2.1	Standard
	Co	58.9	31274.6	31274.605	553.279	1.8	Standard
	In	114.9	61780.9	61780.927	929.471	1.5	Standard
	Pb	208.0	50145.9	50145.864	513.436	1.0	Standard
	Bi	209.0	42124.3	42124.286	436.070	1.0	Standard
	U	238.1	42056.6	42056.631	748.561	1.8	Standard
⌈	CeO	155.9	713.9	0.014	0.001	4.9	Standard
| >	Ce	139.9	49392.8	49392.845	385.582	0.8	Standard
⌊	Ce++	70.0	981.1	0.020	0.001	4.7	Standard
	Bkgd	220.0	0.1	0.133	0.298	223.6	Standard

Replicates

Repeat 1

Analyte	Mass	Meas. Intensity
Li	7	26915.999
Be	9	9115.574
Mg	24	26890.618
Co	59	31453.254
In	115	63234.977
Pb	208	50246.775
Bi	209	41704.118
U	238	42582.704
CeO	156	685.350
Ce	140	49927.762
Ce++	70	945.365
Bkgd	220	0.000

Repeat 2

Analyte	Mass	Meas. Intensity
Li	7	26702.265
Be	9	9106.902
Mg	24	25536.136
Co	59	30343.525
In	115	60872.750
Pb	208	49398.825
Bi	209	41810.428
U	238	40748.700
CeO	156	685.350
Ce	140	48993.201
Ce++	70	954.032
Bkgd	220	0.667

Repeat 3

Analyte	Mass	Meas. Intensity
Li	7	27620.676
Be	9	9348.391
Mg	24	26017.003
Co	59	31235.444
In	115	61771.931

Pb	208	49979.804
Bi	209	42602.764
U	238	42134.712
CeO	156	698.684
Ce	140	49064.111
Ce++	70	1050.039
Bkgd	220	0.000

Repeat 4

Analyte	Mass	Meas. Intensity
Li	7	27842.439
Be	9	9301.694
Mg	24	25715.791
Co	59	31596.904
In	115	61944.007
Pb	208	50298.171
Bi	209	42586.716
U	238	42398.825
CeO	156	730.685
Ce	140	49384.545
Ce++	70	968.700
Bkgd	220	0.000

Repeat 5

Analyte	Mass	Meas. Intensity
Li	7	27402.924
Be	9	8977.487
Mg	24	25607.597
Co	59	31743.896
In	115	61080.969
Pb	208	50805.744
Bi	209	41917.407
U	238	42418.216
CeO	156	769.354
Ce	140	49594.604
Ce++	70	987.367
Bkgd	220	0.000

Current Conditions File Data

Current Value	Description
0.86	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
16.00	Plasma Gas Flow
-9.50	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-14.50	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.86	DRC Mode NEB
-6.50	DRC Mode QRO
-1.50	DRC Mode CRO
-10.00	DRC Mode Cell Entrance/Exit Voltage
3.50	Cell Gas A
0.00	Cell Gas B
280.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-40.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

LABWORKS - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, August 25, 2016 12:47:03
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\Blank.002
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	8.0	25.0			ppb
	Cu-KED3	65	3.7	31.5			ppb
	Zn-KED3	66	3.0	66.7			ppb
>	Ge-KED3	72	14187.7	1.0			ppb
>	In-KED2	115	13963.1	0.7			ppb
	Sb-KED2	121	25.3	4.6			ppb
	Sb-KED2	123	26.6	11.0			ppb
>	Lu-KED2	175	50909.6	1.3			ppb
	Pb-KED2	208	17.3	17.6			ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72					
>	In-KED2	115					
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175					
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, August 25, 2016 12:49:57
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\Standard 1.003
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16767.8	3.0	25.00000	4.7	ppb
|	Cu-KED3	65	8571.2	1.8	25.00000	3.5	ppb
|	Zn-KED3	66	1613.4	2.1	25.00000	3.8	ppb
⌊>	Ge-KED3	72	14656.8	1.7			ppb
⌈>	In-KED2	115	13640.6	3.2			ppb
|	Sb-KED2	121	9050.2	2.7	25.00000	5.7	ppb
⌊	Sb-KED2	123	7245.9	1.3	25.00000	3.5	ppb
⌈>	Lu-KED2	175	50878.6	4.8			ppb
⌊	Pb-KED2	208	128981.1	0.8	25.00000	5.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICV
Sample Date/Time: Thursday, August 25, 2016 12:52:51
Sample Description:
Autosampler Position: 3
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICV.004
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8409.1	2.3	12.69050	4.0	ppb
|	Cu-KED3	65	4539.4	2.1	13.40385	3.6	ppb
|	Zn-KED3	66	1647.8	4.1	25.86254	5.5	ppb
⌊>	Ge-KED3	72	14472.3	1.7			ppb
⌈>	In-KED2	115	14020.1	2.1			ppb
|	Sb-KED2	121	9804.7	2.9	26.34065	5.0	ppb
⌊	Sb-KED2	123	7803.8	1.1	26.18793	1.9	ppb
⌈>	Lu-KED2	175	50694.9	3.2			ppb
⌊	Pb-KED2	208	131979.8	1.0	25.64291	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	102				
|	Cu-KED3	65	107				
|	Zn-KED3	66	103				
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		100			
|	Sb-KED2	121	105				
⌊	Sb-KED2	123	105				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	103				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Thursday, August 25, 2016 12:55:46
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCV.005
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16238.6	0.9	24.80336	1.0	ppb
|	Cu-KED3	65	8625.3	1.3	25.78088	2.4	ppb
|	Zn-KED3	66	1556.1	4.6	24.70008	4.2	ppb
⌊>	Ge-KED3	72	14300.8	1.9			ppb
⌈>	In-KED2	115	13990.3	1.7			ppb
|	Sb-KED2	121	9086.2	0.4	24.44458	1.4	ppb
⌊	Sb-KED2	123	7171.4	1.8	24.11198	3.2	ppb
⌈>	Lu-KED2	175	51543.8	1.1			ppb
⌊	Pb-KED2	208	129058.6	1.4	24.64944	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Rc	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	103				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		100			
|	Sb-KED2	121	98				
⌊	Sb-KED2	123	96				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICB
Sample Date/Time: Thursday, August 25, 2016 12:58:40
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICB.006
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	14.0	51.5	0.00912	122.4	ppb
	Cu-KED3	65	6.7	37.7	0.00886	83.7	ppb
	Zn-KED3	66	5.3	28.6	0.03673	65.8	ppb
>	Ge-KED3	72	14295.1	0.6			ppb
>	In-KED2	115	14218.1	1.5			ppb
	Sb-KED2	121	56.7	4.1	0.08191	5.7	ppb
	Sb-KED2	123	45.1	16.6	0.06016	44.5	ppb
>	Lu-KED2	175	50760.7	1.8			ppb
	Pb-KED2	208	20.0	26.5	0.00054	200.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		101			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		100			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Thursday, August 25, 2016 13:01:35
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082516A\CCB.007
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14.7	20.8	0.01025	45.8	ppb
|	Cu-KED3	65	9.0	19.2	0.01607	33.4	ppb
|	Zn-KED3	66	6.3	18.2	0.05343	35.7	ppb
⌊>	Ge-KED3	72	14199.7	0.9			ppb
⌈>	In-KED2	115	14208.0	0.7			ppb
|	Sb-KED2	121	37.3	35.7	0.03084	116.2	ppb
⌊	Sb-KED2	123	34.3	8.9	0.02421	42.4	ppb
⌈>	Lu-KED2	175	50712.2	1.1			ppb
⌊	Pb-KED2	208	16.0	25.0	-0.00024	323.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLICVS
Sample Date/Time: Thursday, August 25, 2016 13:04:30
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082516A\LLICVS.008
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	140.7	5.0	0.19599	4.0	ppb
|	Cu-KED3	65	72.3	20.7	0.19860	22.0	ppb
|	Zn-KED3	66	67.7	7.4	0.99605	9.1	ppb
⌊>	Ge-KED3	72	14752.6	2.0			ppb
⌈>	In-KED2	115	13811.2	0.6			ppb
|	Sb-KED2	121	73.3	23.5	0.13211	36.6	ppb
⌊	Sb-KED2	123	51.9	10.2	0.08750	21.8	ppb
⌈>	Lu-KED2	175	50871.8	1.4			ppb
⌊	Pb-KED2	208	540.7	7.2	0.10124	6.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	98				
|	Cu-KED3	65	99				
|	Zn-KED3	66	100				
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		99			
|	Sb-KED2	121	132				
⌊	Sb-KED2	123	88				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: ICSA
Sample Date/Time: Thursday, August 25, 2016 13:07:24
Sample Description:
Autosampler Position: 5
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICSA.009
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	346.7	7.7	0.61664	7.9	ppb
|	Cu-KED3	65	171.3	18.5	0.59701	18.7	ppb
|	Zn-KED3	66	19.0	5.3	0.31068	5.9	ppb
⌊>	Ge-KED3	72	12044.4	0.2			ppb
⌈>	In-KED2	115	12265.8	2.8			ppb
|	Sb-KED2	121	44.0	20.8	0.06706	42.7	ppb
⌊	Sb-KED2	123	31.4	18.5	0.03139	78.2	ppb
⌈>	Lu-KED2	175	47935.3	1.0			ppb
⌊	Pb-KED2	208	360.0	2.9	0.07059	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICSAB
Sample Date/Time: Thursday, August 25, 2016 13:10:18
Sample Description:
Autosampler Position: 6
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICSAB.010
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25497.4	1.8	47.48137	2.9	ppb
|	Cu-KED3	65	13396.3	2.3	48.81361	3.6	ppb
|	Zn-KED3	66	1188.4	1.6	22.98677	0.8	ppb
⌊>	Ge-KED3	72	11734.2	1.5			ppb
⌈>	In-KED2	115	12302.9	1.1			ppb
|	Sb-KED2	121	40.0	34.6	0.05399	76.4	ppb
⌊	Sb-KED2	123	37.7	7.8	0.05474	17.9	ppb
⌈>	Lu-KED2	175	48074.4	2.2			ppb
⌊	Pb-KED2	208	356.0	5.9	0.06954	5.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	95				
|	Cu-KED3	65	98				
|	Zn-KED3	66	92				
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: 1000ppb LR
Sample Date/Time: Thursday, August 25, 2016 13:13:15
Sample Description:
Autosampler Position: 324
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\1000ppb LR.011
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	611090.7	1.9	984.44012	1.2	ppb
|	Cu-KED3	65	318018.7	1.1	1002.44823	1.6	ppb
|	Zn-KED3	66	58465.1	0.9	980.45282	1.9	ppb
⌊>	Ge-KED3	72	13565.8	2.4			ppb
⌈>	In-KED2	115	13699.0	1.2			ppb
|	Sb-KED2	121	360909.7	0.9	994.17693	0.3	ppb
⌊	Sb-KED2	123	287469.4	1.4	990.53489	2.3	ppb
⌈>	Lu-KED2	175	50572.7	1.4			ppb
⌊	Pb-KED2	208	5103658.0	1.7	993.59529	0.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		96			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: RINSE
Sample Date/Time: Thursday, August 25, 2016 13:16:12
Sample Description:
Autosampler Position: 323
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082516A\RINSE.012
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	35.3	17.3	0.04536	19.8	ppb
|	Cu-KED3	65	14.3	42.6	0.03512	59.2	ppb
|	Zn-KED3	66	6.0	50.0	0.05340	92.5	ppb
⌊>	Ge-KED3	72	13361.2	2.3			ppb
⌈>	In-KED2	115	13619.9	2.4			ppb
|	Sb-KED2	121	239.3	8.1	0.59533	10.5	ppb
⌊	Sb-KED2	123	163.2	3.1	0.47632	6.2	ppb
⌈>	Lu-KED2	175	50782.4	1.1			ppb
⌊	Pb-KED2	208	82.0	59.1	0.01250	74.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-005
Sample Date/Time: Thursday, August 25, 2016 13:19:08
Sample Description: 5
Autosampler Position: 301
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\K1608209-005.013
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	23607.5	1.0	38.07715	0.3	ppb
|	Cu-KED3	65	12660.9	1.2	39.95546	0.8	ppb
|	Zn-KED3	66	5695.8	2.0	95.60829	1.9	ppb
⌊>	Ge-KED3	72	13543.4	0.9			ppb
⌈>	In-KED2	115	13468.5	1.3			ppb
|	Sb-KED2	121	215.3	2.1	0.53502	3.5	ppb
⌊	Sb-KED2	123	178.7	15.9	0.53628	18.4	ppb
⌈>	Lu-KED2	175	51983.4	1.8			ppb
⌊	Pb-KED2	208	379511.0	0.6	71.89173	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		96			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		102			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-012
Sample Date/Time: Thursday, August 25, 2016 13:22:02
Sample Description: 5
Autosampler Position: 302
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\K1608344-012.014
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17446.0	1.2	30.98189	1.2	ppb
|	Cu-KED3	65	9307.7	0.8	32.34450	2.0	ppb
|	Zn-KED3	66	5258.3	1.4	97.18247	0.7	ppb
⌊>	Ge-KED3	72	12300.6	1.4			ppb
⌈>	In-KED2	115	12228.9	1.1			ppb
|	Sb-KED2	121	142.0	12.3	0.36953	13.7	ppb
⌊	Sb-KED2	123	113.4	5.7	0.34789	7.0	ppb
⌈>	Lu-KED2	175	48237.3	2.5			ppb
⌊	Pb-KED2	208	225403.7	0.7	46.01814	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		95			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-011
Sample Date/Time: Thursday, August 25, 2016 13:24:56
Sample Description: 500
Autosampler Position: 303
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082516A\K1608325-011.015
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	536.7	1.8	0.85103	2.0	ppb
|	Cu-KED3	65	280.3	3.3	0.87130	3.6	ppb
|	Zn-KED3	66	87.7	9.2	1.41897	8.5	ppb
⌊>	Ge-KED3	72	13584.5	1.2			ppb
⌈>	In-KED2	115	13421.3	2.2			ppb
|	Sb-KED2	121	102.7	22.2	0.21970	27.4	ppb
⌊	Sb-KED2	123	70.8	13.1	0.15875	17.8	ppb
⌈>	Lu-KED2	175	49373.9	2.7			ppb
⌊	Pb-KED2	208	150978.1	1.6	30.12364	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		96			
⌈>	In-KED2	115		96			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Thursday, August 25, 2016 13:27:52
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCV.016
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15125.3	2.9	25.20763	3.0	ppb
|	Cu-KED3	65	7970.2	1.3	25.98826	1.0	ppb
|	Zn-KED3	66	1439.7	5.1	24.93608	4.8	ppb
⌊>	Ge-KED3	72	13105.7	0.3			ppb
⌈>	In-KED2	115	13547.7	0.1			ppb
|	Sb-KED2	121	8651.3	0.6	24.03017	0.7	ppb
⌊	Sb-KED2	123	6964.3	2.2	24.17324	2.2	ppb
⌈>	Lu-KED2	175	50461.3	0.3			ppb
⌊	Pb-KED2	208	124362.5	0.1	24.26170	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	104				
|	Zn-KED3	66	100				
⌊>	Ge-KED3	72		92			
⌈>	In-KED2	115		97			
|	Sb-KED2	121	96				
⌊	Sb-KED2	123	97				
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208	97				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Thursday, August 25, 2016 13:30:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCB.017
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16.7	30.2	0.01491	55.0	ppb
|	Cu-KED3	65	4.7	12.4	0.00386	45.7	ppb
|	Zn-KED3	66	3.0	0.0	0.00293	10.1	ppb
⌊>	Ge-KED3	72	13372.6	0.6			ppb
⌈>	In-KED2	115	13504.4	0.9			ppb
|	Sb-KED2	121	78.7	14.7	0.15120	20.1	ppb
⌊	Sb-KED2	123	52.1	6.6	0.09230	12.1	ppb
⌈>	Lu-KED2	175	49500.3	1.6			ppb
⌊	Pb-KED2	208	20.7	20.1	0.00077	115.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Thursday, August 25, 2016 13:33:41
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\LLCCVS.018
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	128.7	5.9	0.19220	6.6	ppb
|	Cu-KED3	65	66.3	8.3	0.19513	7.9	ppb
|	Zn-KED3	66	62.3	19.1	0.98433	21.1	ppb
⌊>	Ge-KED3	72	13749.3	1.0			ppb
⌈>	In-KED2	115	13632.0	2.2			ppb
|	Sb-KED2	121	84.7	13.0	0.16631	20.9	ppb
⌊	Sb-KED2	123	69.0	24.2	0.14919	39.0	ppb
⌈>	Lu-KED2	175	50129.1	1.2			ppb
⌊	Pb-KED2	208	557.3	7.7	0.10616	8.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	96				
|	Cu-KED3	65	98				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		98			
|	Sb-KED2	121	166				
⌊	Sb-KED2	123	149				
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208	106				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control
QC Std 6	Sb-KED2	123	Out of Control

Cal Curve
LLS 8/25/16

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Thursday, August 25, 2016 13:41:59
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\LLCCVS.019
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	137.3	17.4	0.20215	18.2	ppb
|	Cu-KED3	65	78.3	8.5	0.22850	9.7	ppb
|	Zn-KED3	66	67.7	12.3	1.05107	11.3	ppb
⌊>	Ge-KED3	72	13987.5	1.5			ppb
⌈>	In-KED2	115	13918.4	1.9			ppb
|	Sb-KED2	121	66.7	1.7	0.11237	5.9	ppb
⌊	Sb-KED2	123	58.2	9.5	0.10722	14.1	ppb
⌈>	Lu-KED2	175	50628.6	2.4			ppb
⌊	Pb-KED2	208	504.0	5.5	0.09468	5.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Preparation Information Benchsheet

Prep Run: 267585 **Prep Workflow:** MetDigAqMS **Status:** Prepped **Prep Date:** 08/02/2016 09:16
Team: Metals **Prep Method:** EPA CLP-METALS ILM04.0 **Current Step:** Digestion **Due Date:** 08/08/2016
Analyst: (b) (6) **Rush/NPDES:** N/A **Hold Date:** 01/16/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	Testno List	Comments
KQ1609039-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX,0.05 mL HCl
KQ1609039-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.05 mL 0.25 mL	172187 172654 172707 174317	Metals T	1%HNO3 ULTREX,0.05 mL HCl
K1608325-014	EB072116	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX,0.05 mL HCl
K1608325-014: KQ1609039-03	Duplicate	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX,0.05 mL HCl
K1608325-014: KQ1609039-04	Matrix Spike	.01	25 mL	25 mL	0.25 mL 0.25 mL 0.05 mL 0.25 mL	172187 172654 172707 174317	Metals T	1%HNO3 ULTREX,0.05 mL HCl
K1608344-013	EB072016	.04	25 mL	25 mL			Metals T	1%HNO3 ULTREX,0.05 mL HCl

spike 8/6/16

Duplicate LabControl Sample

SP 8/6/16

6 Total Samples consisting of 2 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET Mo/U 10ppm	Spike	172707	9/3/2016	k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016	k-met Sb 5ug/mL Sb	Spike	174317	7/12/2017

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761	Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-BlockDigester-05	Corrected Temperature	96	deg C	Digestion	K-BlockDigester-05	Thermometer ID 1108396		NONE
Digestion	K-BlockDigester-05	Correction Factor	0	deg C	Digestion	K-BlockDigester-05	Thermometer Location	51	NONE
Digestion	K-BlockDigester-05	Observed Temperature 211918066	96	deg C					

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	02-AUG-16 09:16	02-AUG-16 11:16	Juanita Hinson		N	

Comments

HCl lot number 53338 ; duplicate LCS unable to be added to prep run per J. Hinson Spiked same as KQ1609039-02 LCS.

SP 8/6/16

Review

Reviewed by: _____ Date: 8/6/16

Preparation Information Benchsheet

Prep Run: 267853
Team: Metals
Analyst: (b) (6)

Prep Workflow: MetDigAqMS
Prep Method: EPA CLP-METALS ILM04.0
Rush/NPDES: N/A

Status: Prepped
Current Step: Digestion

Prep Date: 08/04/2016 09:43
Due Date: 08/01/2016
Hold Date: 01/10/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1609201-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-03	Duplicate Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608011-007	EB071416	.03	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608207-015	EB071816	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608209-015	EB071916	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608210-015	EB071516	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608325-014	EB072116	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608344-013	EB072016	.04	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl

9 Total Samples consisting of 6 Client Samples, 0 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016
k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016

Name	Type	ID	Expires
k-met Sb 5ug/mL Sb	Spike	174317	7/12/2017

Preparation Materials

Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761

Step	Name	ID
Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Corrected Temperature	96	deg C
Digestion	K-BlockDigester-06	Correction Factor	0	deg C
Digestion	K-BlockDigester-06	Observed Temperature 211919567	96	deg C

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Thermometer ID 1108666		NONE
Digestion	K-BlockDigester-06	Thermometer Location	53	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	04-AUG-16 09:43	04-AUG-16 11:43	Anna Cheatley		N	

Comments

HCl lot #53338

Review

Reviewed by: _____ Date: 8/5/16

ICP-MS LCSW AND SPIKING SOLUTIONS

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-1

k-met 1/100 QCP-CICV-1

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Al	10000	100
Ag	1250	12.5
Ba	10000	100
Be	250	2.5
Ca	25000	250
Co	2500	25
Cu	1250	12.5
Cr	1000	10
Fe	5000	50
K	25000	250
Mg	25000	250
Mn	2500	25
Na	25000	250
Ni	2500	25
V	2500	25
Zn	2500	25

2.50mL to 500mL Dilution of 1000ppm Sb

k-met 5ug/mL Sb

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Sb	5000	50

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-3

k-met 1/100 QCP-CICV-3

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
As	5000	50
Pb	5000	50
Se	5000	50
Tl	5000	50
Cd	2500	25

2.00mL to 200mL Dilution of 1,000 ppm Mo and 1,000 ppm U

k-met Mo/U 10ppm

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Mo	10000	20
U	10000	20

Service Request # K1608325

Calibration 080316CMS03

QC in calibration 080316CMS03

QC Service Request # K1608325

STARLIMS run # 508286

Cal Std: MS20-74H ICSA Std: MS20-68H

ICV Std: MS20-74I ICSAB Std: MS20-68I

LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X	X	
11. LCS within DoD 5.0 limit?	X		
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb. MB: Zn =1.6 ppb. See redigest.

Primary Review by _____ Date 8/4/16

Secondary Review by _____ Date 8/5/16

Data Review Form

Service Request #:	**K1608325**
Instrument ID#:	**K-ICP-MS-03**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080316CMS03.csv**
RUNNO:	**508286**

There are no issues to report.

Primary Approver: _____ 8/4/16

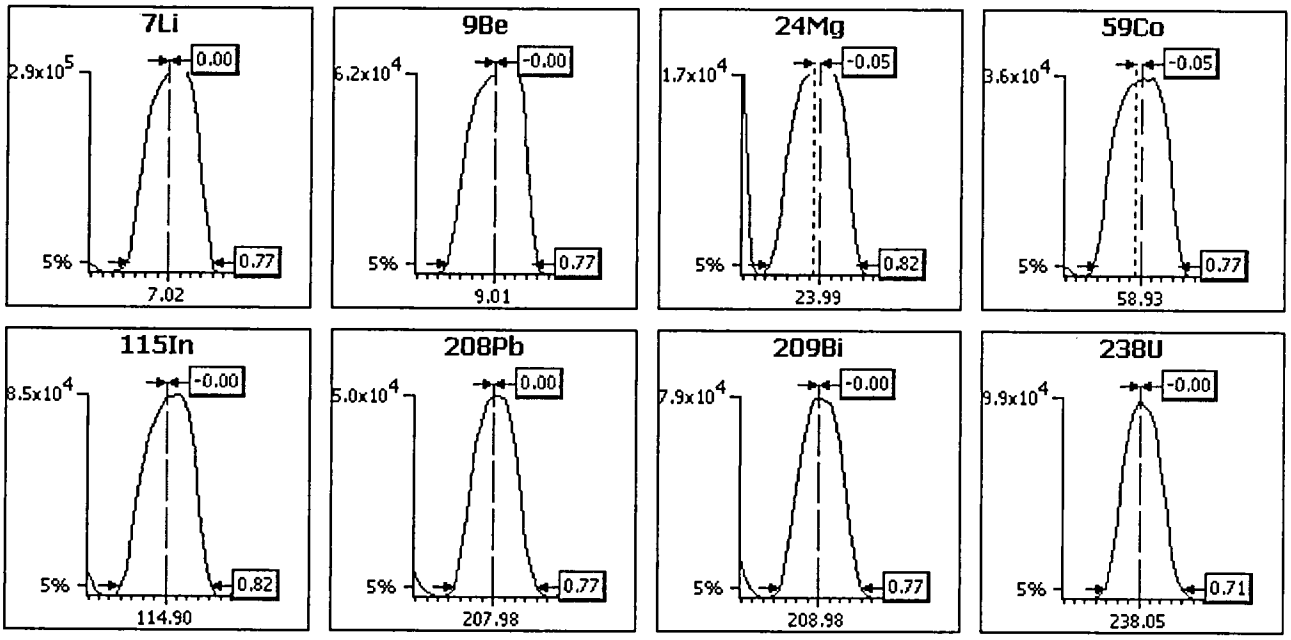
Secondary Approver: _____ 8/5/16

Performance Report

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.77	0.00
9Be	0.90	0.60	0.10	0.77	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.77	-0.05
115In	0.90	0.60	0.10	0.82	-0.00
208Pb	0.90	0.60	0.10	0.77	0.00
209Bi	0.90	0.60	0.10	0.77	-0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	3.8
Focus	23.9
D1	-36.1
Pole Bias	0.4
Hexapole Bias	0.3
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-21.2
Lens 3	-196.1
Forward power	1357
Horizontal	150
Vertical	379
D2	-147
DA	-37.6
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	6:29:00 AM	0.000	284076.95	64021.390	19038.665	37178.368	88721.329	92152.711	1751.419	52817.237
2	6:30:13 AM	0.000	284616.70	64282.221	18790.900	37247.399	88991.702	92036.291	1696.908	53025.444
3	6:31:26 AM	0.000	280053.72	62989.469	18746.809	37270.745	88884.663	92390.355	1683.406	53079.256
4	6:32:38 AM	0.000	282064.47	63422.715	18936.702	37062.395	89291.874	92101.698	1698.909	52955.538
5	6:33:51 AM	0.000	277669.22	62788.334	18622.554	37124.147	89100.005	92354.999	1679.405	53251.258
x		0.000	281696.21	63500.826	18827.126	37176.611	88997.915	92207.211	1702.009	53025.747
σ		0.00	2883.02	643.58	163.07	86.13	215.75	157.08	28.87	159.78
%RSD		0.000	1.023	1.014	0.866	0.232	0.242	0.170	1.696	0.301

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	6:29:00 AM	80875.907	0.000	101610.96
2	6:30:13 AM	81137.977	0.000	101836.97
3	6:31:26 AM	81746.139	0.000	102219.22
4	6:32:38 AM	81748.409	0.000	102459.91
5	6:33:51 AM	81756.733	0.500	102762.54
x		81453.033	0.100	102177.92
σ		417.65	0.22	463.87
%RSD		0.513	223.607	0.454

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	6:29:00 AM	0.019
2	6:30:13 AM	0.018
3	6:31:26 AM	0.018
4	6:32:38 AM	0.018
5	6:33:51 AM	0.018
x		0.0185
σ		0.00
%RSD		1.7799

Result : The performance report passed.

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	ICB1	Unknown	1.000	0	1	1	145
7	CCB1	Unknown	1.000	0	1	1	145
8	LLICVW	Unknown	1.000	0	1	4	145
9	LRSTD	Unknown	1.000	2	1	1	145
10	ICSA	Unknown	1.000	0	1	5	145
11	ICSAB	Unknown	1.000	0	1	6	145
12	KQ1607936-01	Unknown	1.000	1	1	1	145
13	KQ1607936-02	Unknown	1.000	1	1	2	145
14	KQ1607936-03	Unknown	1.000	1	1	3	145
15	K1606832-006	Unknown	1.000	1	1	4	145
16	K1606832-006L	Unknown	1.000	1	1	5	145
17	K1606832-006A	Unknown	1.000	1	1	6	145
18	K1606956-012	Unknown	1.000	1	1	7	145
19	K1607019-010	Unknown	1.000	1	1	8	145
20	K1607034-011	Unknown	1.000	1	1	9	145
21	CCV2	Unknown	1.000	0	1	2	145
22	CCB2	Unknown	1.000	0	1	1	145
23	K1607146-009	Unknown	1.000	1	1	10	145
24	K1607207-006	Unknown	1.000	1	1	11	145
25	K1607266-009	Unknown	1.000	1	1	12	145
26	K1607357-009	Unknown	1.000	1	2	1	145
27	K1607397-009	Unknown	1.000	1	2	2	145
28	K1607580-008	Unknown	1.000	1	2	3	145
29	K1607636-007	Unknown	1.000	1	2	4	145
30	K1607636-008	Unknown	1.000	1	2	5	145
31	K1607675-009	Unknown	1.000	1	2	6	145
32	CCV3	Unknown	1.000	0	1	2	145
33	CCB3	Unknown	1.000	0	1	1	145
34	CCB3	Unknown	1.000	0	1	1	145
35	LLCCVW1	Unknown	1.000	0	1	4	145
36	KQ1608449-01	Unknown	1.000	1	2	7	145
37	KQ1608449-02	Unknown	1.000	1	2	8	145
38	KQ1608449-03	Unknown	1.000	1	2	9	145
39	K1608011-007	Unknown	1.000	1	2	10	145
40	K1608011-007L	Unknown	1.000	1	2	11	145
41	K1608011-007A	Unknown	1.000	1	2	12	145
42	K1608207-015	Unknown	1.000	1	3	1	145
43	K1608209-015	Unknown	1.000	1	3	2	145
44	K1608210-015	Unknown	1.000	1	3	3	145
45	CCV4	Unknown	1.000	0	1	2	145
46	CCB4	Unknown	1.000	0	1	1	145
47	CCB4	Unknown	1.000	0	1	1	145
48	KQ1609039-01	Unknown	1.000	1	3	4	145
49	KQ1609039-02	Unknown	1.000	1	3	5	145
50	KQ1609039-02	Unknown	1.000	1	3	6	145
51	K1608325-014	Unknown	1.000	1	3	7	145
52	K1608325-014L	Unknown	1.000	1	3	8	145
53	K1608325-014A	Unknown	1.000	1	3	9	145
54	K1608344-013	Unknown	1.000	1	3	10	145
55	CCV5	Unknown	1.000	0	1	2	145
56	CCB5	Unknown	1.000	0	1	1	145
57	LLCCVW2	Unknown	1.000	0	1	4	145

Dilution Corrected Concentrations

Cal Blk 8/3/2016 11:58:52 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	101.9%	0.0033	100.9%	0.0110	0.0165	0.0029	-0.0040	0.0068
2	11:59:28	98.6%	-0.0006	100.2%	-0.0021	-0.0116	-0.0015	0.0074	0.0091
3	12:00:05	99.6%	-0.0028	99.0%	-0.0089	-0.0050	-0.0014	-0.0034	-0.0159
x		100.0%	-0.0000	100.0%	0.0000	0.0000	0.0000	-0.0000	0.0000
σ		1.7%	0.0031	1.0%	0.0101	0.0147	0.0025	0.0064	0.0138
%RSD		1.7	0.0000	1.0	0.0000	0.0000	0.0000	0.0000	0.0000

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	-0.0095	0.0198	99.4%	-0.0339	0.0192	0.0854	-0.0948	99.6%
2	11:59:28	0.0018	0.0023	100.2%	0.0235	0.0162	0.0155	0.0940	100.4%
3	12:00:05	0.0077	-0.0221	100.4%	0.0104	-0.0355	-0.1009	0.0008	100.0%
x		0.0000	-0.0000	100.0%	0.0000	0.0000	-0.0000	-0.0000	100.0%
σ		0.0088	0.0210	0.5%	0.0300	0.0308	0.0941	0.0944	0.4%
%RSD		0.0000	0.0000	0.5	0.0000	0.0000	0.0000	0.0000	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	99.0%	-0.0006	-0.0037	98.6%	0.0007	0.0006	0.0001
2	11:59:28	100.3%	-0.0006	0.0055	100.2%	-0.0003	0.0007	0.0000
3	12:00:05	100.7%	0.0012	-0.0018	101.1%	-0.0003	-0.0013	-0.0001
x		100.0%	-0.0000	-0.0000	100.0%	0.0000	-0.0000	0.0000
σ		0.9%	0.0011	0.0049	1.3%	0.0006	0.0011	0.0001
%RSD		0.9	0.0000	0.0000	1.3	0.0000	0.0000	0.0000

Cal. Stn 8/3/2016 12:05:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	99.7%	25.4212	101.4%	24.8380	25.1333	25.4232	25.2951	25.0170
2	12:06:13	94.9%	25.1251	97.9%	25.1084	24.6147	24.6884	25.0301	24.8387
3	12:06:49	96.1%	24.4537	96.2%	25.0537	25.2520	24.8884	24.6747	25.1443
x		96.9%	25.0000	98.5%	25.0000	25.0000	25.0000	25.0000	25.0000
σ		2.5%	0.4957	2.7%	0.1430	0.3389	0.3799	0.3113	0.1535
%RSD		2.5	1.9828	2.7	0.5718	1.3555	1.5195	1.2452	0.6139

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	26.0129	25.0250	99.2%	25.2220	25.3365	25.7518	25.1408	99.6%
2	12:06:13	24.3553	25.0889	101.0%	24.8849	25.3583	24.3936	25.5295	99.9%
3	12:06:49	24.6318	24.8861	100.6%	24.8931	24.3052	24.8546	24.3297	99.8%
x		25.0000	25.0000	100.3%	25.0000	25.0000	25.0000	25.0000	99.8%
σ		0.8880	0.1037	0.9%	0.1923	0.6018	0.6907	0.6121	0.1%
%RSD		3.5520	0.4146	0.9	0.7692	2.4071	2.7626	2.4485	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	100.4%	24.8686	24.7840	100.2%	25.0324	25.1190	25.0564
2	12:06:13	100.4%	25.1052	25.1796	102.3%	25.0025	24.8978	25.0032
3	12:06:49	101.2%	25.0262	25.0364	103.1%	24.9651	24.9832	24.9404
x		100.7%	25.0000	25.0000	101.8%	25.0000	25.0000	25.0000
σ		0.5%	0.1205	0.2003	1.5%	0.0337	0.1115	0.0581
%RSD		0.5	0.4819	0.8011	1.5	0.1350	0.4462	0.2323

ICV1 8/3/2016 12:08:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	100.1%	2.5523	100.4%	25.1690	24.7591	12.3264	12.1984	24.5557
2	12:09:28	93.3%	2.6073	98.3%	25.4122	25.2363	12.6465	12.6558	25.6487
3	12:10:05	95.5%	2.5233	98.0%	24.8719	24.8466	12.3458	12.4137	25.3729
x		96.3%	2.5610	98.9%	25.1510	24.9474	12.4396	12.4226	25.1924
σ		3.4%	0.0427	1.3%	0.2706	0.2541	0.1795	0.2288	0.5684
%RSD		3.6	1.6657	1.3	1.0759	1.0184	1.4429	1.8418	2.2562

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	28.2358	27.5655	100.2%	25.0311	24.9594	25.1245	25.4640	99.2%
2	12:09:28	28.2388	27.5751	99.8%	25.0224	25.9091	25.7493	25.4659	99.6%
3	12:10:05	28.8693	28.2665	98.7%	25.2677	25.6252	25.8031	25.2063	100.3%
x		28.4479	27.8023	99.6%	25.1071	25.4979	25.5590	25.3787	99.7%
σ		0.3649	0.4020	0.8%	0.1392	0.4875	0.3772	0.1493	0.6%
%RSD		1.2826	1.4459	0.8	0.5544	1.9118	1.4760	0.5883	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	99.1%	26.4095	26.3179	100.9%	24.6743	25.3301	25.0655
2	12:09:28	100.3%	26.2787	26.2682	102.8%	24.6864	25.2792	25.0687
3	12:10:05	101.3%	25.9541	25.7546	102.7%	25.0059	25.7189	25.3189
x		100.3%	26.2141	26.1136	102.1%	24.7888	25.4427	25.1510
σ		1.1%	0.2345	0.3118	1.1%	0.1880	0.2405	0.1454
%RSD		1.1	0.8945	1.1942	1.1	0.7586	0.9454	0.5782

CCV1 8/3/2016 12:13:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	103.0%	24.5929	98.8%	25.3563	25.2254	25.0767	25.1933	25.4099
2	12:13:38	103.0%	24.3963	98.7%	25.0314	24.7119	24.7451	24.8955	25.0414
3	12:14:15	102.4%	23.9763	100.4%	25.0682	24.9721	24.6158	24.9420	25.0767
x		102.8%	24.3218	99.3%	25.1520	24.9698	24.8126	25.0103	25.1760
σ		0.4%	0.3150	0.9%	0.1779	0.2567	0.2377	0.1602	0.2033
%RSD		0.4	1.2949	0.9	0.7074	1.0282	0.9581	0.6405	0.8075

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	25.4262	24.8912	99.3%	25.4798	23.6658	25.4510	24.5424	99.8%
2	12:13:38	24.5112	24.8600	100.6%	24.0787	24.6866	25.0870	23.8752	100.9%
3	12:14:15	24.3309	25.4203	98.5%	25.1746	24.8341	24.4187	24.7232	100.4%
x		24.7561	25.0571	99.5%	24.9110	24.3955	24.9856	24.3803	100.4%
σ		0.5873	0.3149	1.1%	0.7368	0.6362	0.5236	0.4467	0.6%
%RSD		2.3722	1.2566	1.1	2.9576	2.6080	2.0955	1.8320	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	100.1%	24.8115	24.6011	100.4%	24.7936	24.7451	24.9171
2	12:13:38	101.0%	25.0560	24.7475	101.5%	24.8937	24.8532	24.9575
3	12:14:15	100.2%	25.1360	25.1246	102.0%	25.0731	24.9676	25.0217
x		100.5%	25.0012	24.8244	101.3%	24.9201	24.8553	24.9654
σ		0.5%	0.1691	0.2701	0.8%	0.1416	0.1112	0.0527
%RSD		0.5	0.6763	1.0879	0.8	0.5683	0.4475	0.2111

ICB1 8/3/2016 12:20:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	107.2%	0.0001	102.1%	0.0024	0.0081	0.0038	0.0063	0.0098
2	12:21:22	107.0%	0.0116	101.2%	0.0120	0.0280	0.0161	0.0073	0.0153
3	12:21:58	110.3%	0.0141	102.1%	0.0067	0.0243	0.0170	0.0137	0.0156
x		108.2%	0.0086	101.8%	0.0070	0.0201	0.0123	0.0091	0.0136
σ		1.8%	0.0075	0.5%	0.0048	0.0106	0.0074	0.0040	0.0033
%RSD		1.7	86.8181	0.5	68.3704	52.7547	59.9918	44.4749	24.2204

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	0.0265	-0.0084	99.0%	-0.0611	0.0981	0.3953	-0.1333	100.0%
2	12:21:22	-0.0401	0.0044	100.5%	-0.0429	0.0278	-0.1792	-0.1701	100.8%
3	12:21:58	-0.0060	0.0078	102.1%	-0.0233	-0.0526	-0.0332	-0.1967	100.5%
x		-0.0065	0.0013	100.6%	-0.0424	0.0244	0.0610	-0.1667	100.4%
σ		0.0333	0.0086	1.6%	0.0189	0.0754	0.2986	0.0318	0.4%
%RSD		508.7854	668.2865	1.6	44.5559	308.7781	489.9042	19.1051	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	99.4%	0.0179	0.0213	97.2%	0.0014	0.0025	0.0007
2	12:21:22	100.0%	0.0339	0.0349	99.2%	0.0116	0.0140	0.0109
3	12:21:58	99.9%	0.0347	0.0363	99.3%	0.0158	0.0137	0.0139
x		99.8%	0.0288	0.0308	98.6%	0.0096	0.0101	0.0085
σ		0.3%	0.0095	0.0083	1.2%	0.0074	0.0066	0.0069
%RSD		0.3	32.7875	26.9649	1.2	76.9747	65.4806	81.1057

ICB1 8/3/2016 12:24:59 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	110.6%	0.0026	99.8%	-0.0074	0.0298	0.0063	0.0056	0.0190
2	12:25:35	108.8%	0.0004	100.5%	0.0063	0.0006	0.0050	0.0081	0.0159
3	12:26:12	102.2%	0.0017	99.0%	-0.0033	0.0089	0.0097	0.0088	0.0048
x		107.2%	0.0016	99.7%	-0.0015	0.0131	0.0070	0.0075	0.0132
σ		4.4%	0.0011	0.8%	0.0070	0.0150	0.0025	0.0017	0.0075
%RSD		4.1	70.5814	0.8	471.6372	114.5867	35.3464	22.8026	56.7756

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	0.0021	0.0154	100.0%	0.0058	0.1201	0.4180	0.1044	100.4%
2	12:25:35	0.0019	0.0063	100.1%	-0.0597	0.0417	-0.1792	-0.1886	101.4%
3	12:26:12	-0.0335	-0.0012	99.9%	0.0009	-0.0223	-0.0222	-0.0466	101.5%
x		-0.0099	0.0068	100.0%	-0.0177	0.0465	0.0722	-0.0436	101.1%
σ		0.0205	0.0083	0.1%	0.0365	0.0713	0.3096	0.1465	0.6%
%RSD		207.6824	121.3553	0.1	206.5850	153.3237	428.9475	336.0915	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	99.6%	0.0047	0.0058	98.3%	0.0052	0.0034	0.0032
2	12:25:35	100.0%	0.0117	0.0142	99.9%	0.0039	0.0050	0.0048
3	12:26:12	100.8%	0.0110	0.0155	100.7%	0.0058	0.0080	0.0055
x		100.2%	0.0091	0.0118	99.7%	0.0050	0.0055	0.0045
σ		0.6%	0.0038	0.0053	1.2%	0.0010	0.0023	0.0012
%RSD		0.6	42.0297	44.6646	1.2	19.5712	42.3099	26.4761

CCB1 8/3/2016 12:28:29 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	111.0%	0.0071	101.7%	-0.0070	0.0514	0.0033	0.0079	0.0212
2	12:29:06	105.3%	0.0042	100.4%	0.0085	-0.0057	0.0022	0.0035	0.0109
3	12:29:42	103.8%	0.0007	99.8%	0.0077	0.0216	0.0067	-0.0003	0.0087
x		106.7%	0.0040	100.6%	0.0031	0.0225	0.0041	0.0037	0.0136
σ		3.8%	0.0032	1.0%	0.0088	0.0285	0.0024	0.0041	0.0067
%RSD		3.6	79.2905	1.0	285.9216	127.1398	58.4338	111.1530	48.9774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	0.0015	0.0123	100.3%	-0.0149	-0.0094	-0.0782	-0.0558	100.0%
2	12:29:06	-0.0042	-0.0016	100.3%	-0.0363	0.1562	0.0573	0.0007	101.8%
3	12:29:42	-0.0519	0.0286	100.7%	0.0115	-0.0623	-0.0714	-0.0370	100.7%
x		-0.0182	0.0131	100.4%	-0.0132	0.0282	-0.0308	-0.0307	100.8%
σ		0.0293	0.0151	0.3%	0.0239	0.1140	0.0763	0.0288	0.9%
%RSD		160.8221	115.6262	0.3	180.8062	404.6443	248.0252	93.8789	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	99.7%	-0.0017	0.0016	98.6%	0.0018	0.0044	0.0024
2	12:29:06	101.1%	0.0070	0.0051	100.3%	0.0010	0.0030	0.0029
3	12:29:42	100.9%	0.0071	0.0073	100.9%	0.0049	0.0060	0.0041
x		100.6%	0.0041	0.0047	99.9%	0.0026	0.0045	0.0031
σ		0.7%	0.0051	0.0029	1.2%	0.0021	0.0015	0.0008
%RSD		0.7	122.8286	61.8019	1.2	80.4608	33.1447	27.1193

LLICVW 8/3/2016 12:32:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	105.5%	0.0214	99.4%	0.1749	0.1826	0.0967	0.0995	0.4898
2	12:32:36	104.4%	0.0205	98.9%	0.1729	0.1699	0.1010	0.1020	0.4672
3	12:33:13	100.1%	0.0262	97.4%	0.1729	0.1709	0.0914	0.1012	0.4605
x		103.3%	0.0227	98.6%	0.1736	0.1745	0.0964	0.1009	0.4725
σ		2.9%	0.0031	1.0%	0.0011	0.0071	0.0048	0.0013	0.0154
%RSD		2.8	13.5714	1.1	0.6617	4.0485	5.0033	1.2780	3.2514

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	0.3191	0.4826	99.6%	0.5424	1.1331	1.1067	1.1845	99.2%
2	12:32:36	0.4231	0.5021	99.2%	0.5253	1.0036	1.1257	0.9504	101.2%
3	12:33:13	0.6294	0.4790	99.1%	0.4133	0.9666	0.7446	0.7906	100.8%
x		0.4572	0.4879	99.3%	0.4937	1.0344	0.9923	0.9752	100.4%
σ		0.1579	0.0124	0.3%	0.0701	0.0874	0.2147	0.1981	1.0%
%RSD		34.5465	2.5491	0.3	14.2022	8.4527	21.6389	20.3127	1.0

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	99.4%	0.0491	0.0517	98.2%	0.0228	0.0191	0.0219
2	12:32:36	100.9%	0.0556	0.0511	100.3%	0.0183	0.0156	0.0188
3	12:33:13	100.2%	0.0450	0.0506	101.1%	0.0194	0.0199	0.0203
x		100.2%	0.0499	0.0511	99.9%	0.0202	0.0182	0.0203
σ		0.8%	0.0053	0.0006	1.5%	0.0024	0.0023	0.0016
%RSD		0.8	10.6827	1.0801	1.5	11.7732	12.6217	7.6566

LRSTD 8/3/2016 12:35:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	101.6%	204.6970	97.7%	196.8791	199.3838	202.7716	202.3057	214.8368
2	12:36:03	99.4%	196.6304	96.7%	201.8646	196.0216	205.1825	202.5141	214.2862
3	12:36:40	94.0%	208.8669	94.0%	199.4093	197.9521	204.4202	202.3690	215.4034
x		98.3%	203.3981	96.1%	199.3843	197.7858	204.1248	202.3963	214.8422
σ		3.9%	6.2208	1.9%	2.4928	1.6872	1.2323	0.1068	0.5586
%RSD		4.0	3.0584	2.0	1.2503	0.8531	0.6037	0.0528	0.2600

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	211.0382	208.7631	98.1%	213.5307	218.0449	219.4838	222.4606	99.3%
2	12:36:03	209.1400	208.0922	98.1%	212.9448	217.7150	224.0242	221.9674	99.7%
3	12:36:40	208.3781	210.3120	98.8%	211.0625	213.6693	220.4988	217.5610	99.2%
x		209.5188	209.0557	98.3%	212.5127	216.4764	221.3356	220.6630	99.4%
σ		1.3699	1.1385	0.4%	1.2896	2.4366	2.3831	2.6977	0.3%
%RSD		0.6538	0.5446	0.4	0.6068	1.1256	1.0767	1.2226	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	105.9%	201.4358	199.6222	100.9%	204.9497	204.0435	207.6721
2	12:36:03	105.4%	203.0798	201.2665	102.6%	204.3710	201.9004	206.6079
3	12:36:40	105.8%	201.5785	200.9491	102.7%	204.9323	204.0668	208.2962
x		105.7%	202.0314	200.6126	102.1%	204.7510	203.3369	207.5254
σ		0.2%	0.9108	0.8723	1.0%	0.3292	1.2441	0.8536
%RSD		0.2	0.4508	0.4348	1.0	0.1608	0.6118	0.4113

ICSA 8/3/2016 12:43:01 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	101.6%	0.0188	95.9%	1.2822	1.5791	3.1617	2.3884	2.0381
2	12:43:38	101.5%	0.0375	94.7%	1.3082	1.6755	3.1430	2.4570	2.0142
3	12:44:15	98.1%	0.0282	95.6%	1.3499	1.6744	3.1174	2.2806	2.1554
x		100.4%	0.0282	95.4%	1.3134	1.6430	3.1407	2.3754	2.0692
σ		2.0%	0.0094	0.7%	0.0341	0.0553	0.0222	0.0889	0.0755
%RSD		2.0	33.3335	0.7	2.5976	3.3676	0.7080	3.7433	3.6502

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	4.3331	1.8773	92.0%	-0.0882	1.5635	-0.2048	-0.5576	88.1%
2	12:43:38	4.3893	1.9567	94.0%	-0.1832	1.5918	-0.2664	-0.9274	90.2%
3	12:44:15	4.7103	1.8253	95.2%	-0.2088	1.7615	0.1393	-0.8771	90.8%
x		4.4776	1.8864	93.7%	-0.1601	1.6389	-0.1106	-0.7873	89.7%
σ		0.2035	0.0661	1.6%	0.0635	0.1071	0.2186	0.2005	1.4%
%RSD		4.5446	3.5066	1.7	39.6931	6.5335	197.5957	25.4691	1.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	90.8%	0.0496	0.0463	91.8%	0.1579	0.1497	0.1512
2	12:43:38	93.1%	0.0637	0.0737	93.8%	0.1782	0.1683	0.1738
3	12:44:15	93.4%	0.0592	0.0580	94.5%	0.1824	0.1719	0.1738
x		92.4%	0.0575	0.0594	93.4%	0.1728	0.1633	0.1663
σ		1.4%	0.0072	0.0137	1.4%	0.0131	0.0119	0.0131
%RSD		1.5	12.5572	23.1478	1.5	7.5856	7.2761	7.8685

ICSAB 8/3/2016 12:46:49 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	107.3%	0.0179	97.6%	50.0934	50.2985	49.8108	48.3987	27.2011
2	12:47:26	103.7%	0.0321	98.0%	49.2970	49.3955	48.2700	47.3286	26.4547
3	12:48:02	97.9%	0.0334	95.5%	49.9994	49.8824	48.2139	47.4552	26.5532
x		103.0%	0.0278	97.0%	49.7966	49.8588	48.7649	47.7275	26.7363
σ		4.7%	0.0086	1.3%	0.4352	0.4520	0.9062	0.5847	0.4055
%RSD		4.6	30.9751	1.4	0.8740	0.9065	1.8583	1.2251	1.5168

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	27.7560	25.1930	95.1%	25.0432	25.8661	23.9499	23.6767	91.8%
2	12:47:26	27.2295	25.7721	96.2%	24.3613	25.2792	23.0851	23.5271	91.3%
3	12:48:02	27.3969	25.4775	95.0%	24.0746	26.2777	24.2956	23.4515	92.2%
x		27.4608	25.4809	95.4%	24.4930	25.8077	23.7769	23.5518	91.8%
σ		0.2690	0.2896	0.7%	0.4975	0.5018	0.6235	0.1146	0.5%
%RSD		0.9794	1.1365	0.7	2.0313	1.9444	2.6225	0.4867	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	94.4%	0.0336	0.0286	95.5%	0.1365	0.1287	0.1311
2	12:47:26	96.0%	0.0439	0.0453	97.7%	0.1486	0.1434	0.1419
3	12:48:02	95.7%	0.0410	0.0388	98.3%	0.1429	0.1363	0.1374
x		95.4%	0.0395	0.0376	97.1%	0.1427	0.1361	0.1368
σ		0.8%	0.0053	0.0084	1.5%	0.0060	0.0073	0.0054
%RSD		0.9	13.4781	22.3689	1.5	4.2366	5.3721	3.9381

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	102.3%	0.0025	98.3%	-0.0029	0.0450	0.0188	0.0157	-0.0137
2	12:51:06	99.2%	0.0130	95.1%	0.0023	0.0585	0.0305	0.0244	0.0029
3	12:51:43	99.7%	0.0078	96.3%	-0.0026	0.0754	0.0254	0.0139	-0.0008
x		100.4%	0.0078	96.6%	-0.0011	0.0596	0.0249	0.0180	-0.0039
σ		1.7%	0.0052	1.6%	0.0029	0.0152	0.0059	0.0056	0.0087
%RSD		1.7	67.5617	1.7	270.5133	25.4882	23.6067	31.2875	226.5048

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	0.0516	-0.0247	98.8%	0.0098	1.8396	-0.2022	0.0993	98.0%
2	12:51:06	0.0055	-0.0100	97.2%	0.0502	1.4686	-0.4213	0.0789	98.7%
3	12:51:43	0.0181	-0.0110	96.6%	0.0295	1.6547	-0.0033	0.0010	97.6%
x		0.0251	-0.0152	97.5%	0.0298	1.6543	-0.2089	0.0597	98.1%
σ		0.0238	0.0082	1.1%	0.0202	0.1855	0.2091	0.0519	0.5%
%RSD		95.0914	53.9854	1.2	67.6269	11.2146	100.0691	86.8512	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	97.7%	-0.0027	-0.0013	100.1%	0.0081	0.0070	0.0070
2	12:51:06	98.3%	0.0034	0.0040	101.8%	0.0096	0.0106	0.0086
3	12:51:43	98.5%	0.0036	0.0040	102.2%	0.0079	0.0093	0.0093
x		98.1%	0.0015	0.0022	101.4%	0.0085	0.0090	0.0083
σ		0.4%	0.0036	0.0031	1.1%	0.0010	0.0018	0.0012
%RSD		0.4	242.7339	136.9929	1.1	11.3145	19.9029	13.8756

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	105.3%	2.4012	97.2%	25.4300	25.7931	12.6477	12.7929	25.5417
2	13:06:40	101.2%	2.4695	96.0%	25.4468	25.3819	12.6981	12.9161	25.6474
3	13:07:17	94.7%	2.6176	95.5%	25.1108	25.1650	12.6703	12.6215	25.3035
x		100.4%	2.4961	96.2%	25.3292	25.4467	12.6720	12.7769	25.4975
σ		5.4%	0.1106	0.9%	0.1893	0.3190	0.0253	0.1479	0.1761
%RSD		5.4	4.4322	0.9	0.7475	1.2536	0.1993	1.1577	0.6907
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	29.5367	27.8183	98.1%	50.3137	51.2640	50.5695	49.4048	98.4%
2	13:06:40	30.0013	28.0722	97.3%	51.4177	50.9710	51.6469	50.3160	99.7%
3	13:07:17	29.0291	28.0459	98.1%	50.5450	51.2706	50.0453	48.4183	98.3%
x		29.5224	27.9788	97.8%	50.7588	51.1685	50.7539	49.3797	98.8%
σ		0.4863	0.1396	0.4%	0.5822	0.1711	0.8166	0.9491	0.8%
%RSD		1.6471	0.4990	0.4	1.1470	0.3344	1.6089	1.9221	0.8
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:06:04	98.1%	50.7364	50.5130	101.5%	50.2519	51.6037	50.9776	
2	13:06:40	99.7%	50.7681	50.1603	102.7%	50.4259	51.9127	51.3935	
3	13:07:17	98.2%	51.6057	51.1017	102.9%	50.6085	52.2601	51.7411	
x		98.7%	51.0367	50.5917	102.4%	50.4288	51.9255	51.3707	
σ		0.9%	0.4930	0.4756	0.7%	0.1783	0.3284	0.3823	
%RSD		0.9	0.9660	0.9401	0.7	0.3535	0.6324	0.7441	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	95.0%	2.5619	95.9%	26.0268	25.4634	12.7333	12.8741	25.7640
2	13:10:38	94.0%	2.5442	96.3%	25.5635	25.3786	12.6549	12.7855	26.2329
3	13:11:15	91.4%	2.5815	94.4%	25.4087	25.1575	12.7694	12.6487	25.6944
x		93.5%	2.5625	95.5%	25.6663	25.3331	12.7192	12.7695	25.8971
σ		1.8%	0.0187	1.0%	0.3216	0.1579	0.0586	0.1135	0.2929
%RSD		2.0	0.7279	1.0	1.2531	0.6234	0.4605	0.8892	1.1310
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	29.3930	28.5213	97.0%	51.2213	52.3733	48.9912	51.8164	98.6%
2	13:10:38	29.7539	28.5697	96.2%	51.2684	52.0815	50.2762	49.8779	98.0%
3	13:11:15	28.8391	28.3598	96.9%	51.7714	51.1347	48.6731	52.3780	98.5%
x		29.3287	28.4836	96.7%	51.4204	51.8632	49.3135	51.3574	98.4%
σ		0.4608	0.1099	0.4%	0.3049	0.6475	0.8487	1.3117	0.3%
%RSD		1.5711	0.3859	0.4	0.5929	1.2485	1.7211	2.5540	0.3
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:10:02	98.3%	51.6857	51.1157	101.1%	50.9121	52.2340	51.8083	
2	13:10:38	99.1%	51.6491	51.2691	103.2%	50.7410	52.2848	51.7386	
3	13:11:15	99.3%	51.9209	51.4271	102.6%	51.2400	52.7772	52.1288	
x		98.9%	51.7519	51.2706	102.3%	50.9644	52.4320	51.8919	
σ		0.5%	0.1475	0.1557	1.1%	0.2536	0.3000	0.2081	
%RSD		0.5	0.2850	0.3037	1.1	0.4975	0.5722	0.4011	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.7%	0.0026	94.9%	0.0341	0.0555	0.0838	0.0925	1.2994
2	13:15:32	95.6%	-0.0008	93.3%	0.0434	0.0808	0.0920	0.0932	1.3435
3	13:16:09	98.6%	0.0012	93.6%	0.0474	0.0723	0.1028	0.0945	1.2021
x		97.0%	0.0010	93.9%	0.0416	0.0695	0.0929	0.0934	1.2817
σ		1.5%	0.0017	0.8%	0.0068	0.0129	0.0096	0.0010	0.0723
%RSD		1.6	174.3820	0.9	16.2806	18.4912	10.2963	1.0567	5.6436

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	1.3125	1.1663	95.8%	0.0330	1.8212	-0.3612	0.0322	96.2%
2	13:15:32	1.3162	1.1964	96.3%	0.0359	1.7280	-0.1651	0.0914	97.1%
3	13:16:09	1.1767	1.2310	94.9%	0.0173	1.9458	-0.2334	-0.0072	96.6%
x		1.2684	1.1979	95.7%	0.0287	1.8317	-0.2533	0.0388	96.6%
σ		0.0795	0.0324	0.7%	0.0100	0.1093	0.0995	0.0496	0.5%
%RSD		6.2666	2.7064	0.8	34.8797	5.9655	39.3030	127.9914	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.2%	0.0152	0.0168	97.8%	0.0311	0.0269	0.0279
2	13:15:32	96.8%	0.0216	0.0182	99.0%	0.0318	0.0332	0.0299
3	13:16:09	95.9%	0.0211	0.0168	99.7%	0.0309	0.0316	0.0324
x		96.3%	0.0193	0.0173	98.9%	0.0312	0.0306	0.0301
σ		0.5%	0.0035	0.0008	1.0%	0.0005	0.0033	0.0023
%RSD		0.5	18.3656	4.6145	1.0	1.5558	10.6389	7.6294

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	105.5%	0.0015	94.6%	-0.0014	0.0012	0.0180	0.0234	0.2083
2	13:19:06	98.6%	0.0007	96.0%	-0.0132	0.0061	0.0165	0.0240	0.2564
3	13:19:43	97.2%	0.0030	96.2%	-0.0033	-0.0153	0.0211	0.0021	0.2383
x		100.4%	0.0017	95.6%	-0.0060	-0.0027	0.0186	0.0165	0.2343
σ		4.4%	0.0012	0.8%	0.0063	0.0112	0.0024	0.0125	0.0243
%RSD		4.4	67.1444	0.9	106.1766	420.4207	12.6811	75.8328	10.3608

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	0.2409	0.2264	96.6%	0.1141	0.2841	-0.2150	0.2385	96.2%
2	13:19:06	0.2969	0.2335	98.0%	0.0442	0.4606	-0.1752	0.1882	96.9%
3	13:19:43	0.1546	0.2749	96.2%	0.0019	0.4979	-0.1567	0.0904	97.8%
x		0.2308	0.2449	96.9%	0.0534	0.4142	-0.1823	0.1724	96.9%
σ		0.0717	0.0262	0.9%	0.0566	0.1142	0.0298	0.0753	0.8%
%RSD		31.0668	10.6856	1.0	106.0825	27.5687	16.3219	43.6889	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	96.5%	-0.0131	-0.0083	96.7%	0.0093	0.0059	0.0078
2	13:19:06	97.8%	-0.0077	-0.0049	99.0%	0.0101	0.0095	0.0081
3	13:19:43	97.7%	-0.0072	-0.0075	99.8%	0.0099	0.0119	0.0096
x		97.4%	-0.0093	-0.0069	98.5%	0.0097	0.0091	0.0085
σ		0.7%	0.0033	0.0018	1.6%	0.0004	0.0030	0.0010
%RSD		0.7	35.2388	25.9221	1.6	4.4386	33.2716	11.2575

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	99.2%	20.4433	96.8%	21.1936	21.0694	21.2988	21.4634	22.3573
2	13:22:40	98.9%	20.2169	92.0%	21.8326	21.3973	21.5108	21.4226	22.3424
3	13:23:17	99.1%	20.1481	95.6%	21.2707	21.1500	21.2476	20.9309	22.5631
x		99.1%	20.2694	94.8%	21.4323	21.2055	21.3524	21.2723	22.4209
σ		0.2%	0.1545	2.5%	0.3488	0.1709	0.1395	0.2964	0.1233
%RSD		0.2	0.7621	2.7	1.6275	0.8059	0.6534	1.3932	0.5501

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	22.5175	22.2216	96.0%	21.1216	22.2181	20.4610	21.6878	96.2%
2	13:22:40	22.3645	22.2692	96.4%	21.0818	22.6540	20.4815	20.6758	96.2%
3	13:23:17	21.6850	21.9754	95.7%	21.2072	21.7388	19.4586	20.9449	96.6%
x		22.1890	22.1554	96.0%	21.1369	22.2036	20.1337	21.1028	96.4%
σ		0.4431	0.1577	0.4%	0.0641	0.4578	0.5847	0.5242	0.2%
%RSD		1.9970	0.7117	0.4	0.3031	2.0617	2.9042	2.4838	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	97.2%	21.4180	21.3357	98.5%	21.2632	21.1367	21.1585
2	13:22:40	96.3%	21.7266	21.6745	100.7%	21.1525	21.1633	21.2366
3	13:23:17	97.2%	21.5013	21.5065	100.0%	21.3760	21.3954	21.4088
x		96.9%	21.5486	21.5056	99.8%	21.2639	21.2318	21.2680
σ		0.5%	0.1596	0.1694	1.1%	0.1117	0.1423	0.1280
%RSD		0.5	0.7408	0.7877	1.1	0.5253	0.6700	0.6020

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	99.5%	0.0096	94.7%	0.1052	0.0923	0.1495	0.1523	1.2404
2	13:26:29	90.0%	0.0186	93.0%	0.1238	0.1109	0.1700	0.1785	1.1736
3	13:27:06	90.9%	0.0092	93.0%	0.0989	0.0953	0.1575	0.1547	1.2130
x		93.5%	0.0124	93.6%	0.1093	0.0995	0.1590	0.1618	1.2090
σ		5.2%	0.0054	1.0%	0.0130	0.0100	0.0103	0.0145	0.0336
%RSD		5.6	43.0305	1.1	11.8497	10.0192	6.5060	8.9429	2.7774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	1.1149	1.2133	95.7%	0.1412	1.6068	-0.3806	0.1715	96.5%
2	13:26:29	1.0217	1.1553	95.4%	0.0321	2.0865	-0.2696	0.1732	96.0%
3	13:27:06	1.1759	1.1377	95.1%	-0.0166	2.0111	-0.3613	-0.1070	96.2%
x		1.1042	1.1688	95.4%	0.0522	1.9015	-0.3372	0.0793	96.2%
σ		0.0776	0.0396	0.3%	0.0808	0.2580	0.0593	0.1613	0.2%
%RSD		7.0296	3.3879	0.3	154.7012	13.5669	17.5914	203.4871	0.2

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	94.8%	0.0103	0.0106	97.7%	0.0700	0.0694	0.0693
2	13:26:29	95.0%	0.0210	0.0178	99.3%	0.0792	0.0804	0.0784
3	13:27:06	95.7%	0.0123	0.0106	99.7%	0.0714	0.0722	0.0719
x		95.2%	0.0145	0.0130	98.9%	0.0735	0.0740	0.0732
σ		0.4%	0.0057	0.0041	1.1%	0.0050	0.0057	0.0047
%RSD		0.5	39.2414	31.8788	1.1	6.7977	7.7116	6.4348

K1607019-010 8/3/2016 1:29:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	96.3%	0.0035	94.2%	0.1593	0.1657	0.1542	0.1753	1.3872
2	13:30:19	96.2%	0.0027	92.3%	0.1589	0.1450	0.1548	0.1583	1.4792
3	13:30:56	91.8%	0.0072	93.3%	0.1815	0.1338	0.1533	0.1538	1.4574
x		94.8%	0.0045	93.2%	0.1666	0.1481	0.1541	0.1625	1.4413
σ		2.6%	0.0024	1.0%	0.0129	0.0162	0.0007	0.0113	0.0481
%RSD		2.7	54.1311	1.0	7.7662	10.9315	0.4604	6.9716	3.3353
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	1.3825	1.3779	95.3%	-0.0471	2.1025	-0.1488	-0.0176	95.7%
2	13:30:19	1.4152	1.3839	96.5%	-0.0230	1.9154	0.0007	0.0314	96.1%
3	13:30:56	1.4258	1.4140	94.6%	-0.0776	2.1817	-0.0423	-0.0873	96.5%
x		1.4078	1.3919	95.5%	-0.0492	2.0665	-0.0635	-0.0245	96.1%
σ		0.0225	0.0193	1.0%	0.0274	0.1367	0.0770	0.0597	0.4%
%RSD		1.6014	1.3890	1.0	55.5913	6.6169	121.2961	243.4976	0.4
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:29:42	94.8%	0.0015	0.0023	97.6%	0.0298	0.0244	0.0268	
2	13:30:19	96.3%	-0.0009	0.0045	99.9%	0.0337	0.0316	0.0295	
3	13:30:56	96.1%	0.0032	0.0013	99.7%	0.0342	0.0312	0.0294	
x		95.7%	0.0013	0.0027	99.1%	0.0326	0.0291	0.0286	
σ		0.8%	0.0021	0.0017	1.2%	0.0024	0.0040	0.0015	
%RSD		0.8	163.3964	61.8161	1.3	7.3886	13.8609	5.2801	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	101.7%	0.0030	95.0%	0.0994	0.0948	0.0722	0.0665	0.5486
2	13:33:58	98.2%	0.0008	93.9%	0.0850	0.0696	0.0706	0.0772	0.4684
3	13:34:35	91.5%	0.0049	94.2%	0.0909	0.1020	0.0773	0.0808	0.5383
x		97.1%	0.0029	94.4%	0.0918	0.0888	0.0734	0.0749	0.5184
σ		5.1%	0.0021	0.6%	0.0072	0.0170	0.0035	0.0075	0.0436
%RSD		5.3	72.2323	0.6	7.8586	19.1852	4.7857	9.9715	8.4150
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	0.5158	0.5268	94.8%	-0.2155	2.4683	0.0106	-0.2166	95.4%
2	13:33:58	0.4752	0.4553	94.4%	0.0041	2.0244	-0.1542	-0.0086	96.3%
3	13:34:35	0.5166	0.5355	94.8%	0.0081	1.9358	-0.1252	-0.0674	96.0%
x		0.5025	0.5059	94.7%	-0.0678	2.1429	-0.0896	-0.0975	95.9%
σ		0.0237	0.0440	0.2%	0.1279	0.2853	0.0880	0.1072	0.5%
%RSD		4.7171	8.6997	0.3	188.7278	13.3154	98.1413	109.9461	0.5
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:33:21	95.4%	-0.0022	-0.0062	97.8%	0.0093	0.0128	0.0102	
2	13:33:58	96.4%	-0.0030	-0.0004	99.4%	0.0100	0.0097	0.0099	
3	13:34:35	96.3%	-0.0070	-0.0017	100.0%	0.0119	0.0131	0.0113	
x		96.1%	-0.0041	-0.0028	99.1%	0.0104	0.0118	0.0104	
σ		0.5%	0.0026	0.0030	1.2%	0.0013	0.0019	0.0007	
%RSD		0.6	63.1923	108.8738	1.2	12.7849	15.9757	7.0552	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	94.9%	25.1550	96.4%	25.0082	25.0840	25.3274	24.9542	26.0927
2	13:37:32	96.5%	25.0253	94.9%	25.2027	25.0816	25.1350	25.2209	25.3994
3	13:38:08	92.5%	25.6392	94.4%	25.1441	25.2254	25.2308	25.5684	25.9205
x		94.6%	25.2732	95.2%	25.1183	25.1303	25.2311	25.2478	25.8042
σ		2.0%	0.3235	1.0%	0.0998	0.0824	0.0962	0.3080	0.3609
%RSD		2.1	1.2802	1.1	0.3973	0.3277	0.3812	1.2200	1.3988

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	26.0432	25.3710	96.3%	25.4587	24.8189	25.3277	24.9381	97.9%
2	13:37:32	25.0095	25.0716	97.0%	25.2400	24.7289	24.8517	24.8204	99.1%
3	13:38:08	25.3300	25.7157	96.3%	24.7102	24.8569	25.0834	24.0360	99.1%
x		25.4609	25.3861	96.5%	25.1363	24.8016	25.0876	24.5982	98.7%
σ		0.5291	0.3223	0.4%	0.3849	0.0657	0.2380	0.4904	0.7%
%RSD		2.0782	1.2698	0.4	1.5311	0.2651	0.9488	1.9936	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	97.7%	25.0925	24.8617	100.0%	25.3336	25.0709	25.3316
2	13:37:32	99.2%	25.0185	25.1465	102.0%	25.2907	25.2712	25.3645
3	13:38:08	99.7%	25.0802	25.1635	102.2%	25.4072	25.2456	25.4113
x		98.9%	25.0637	25.0572	101.4%	25.3439	25.1959	25.3692
σ		1.0%	0.0397	0.1696	1.2%	0.0589	0.1090	0.0400
%RSD		1.1	0.1582	0.6768	1.2	0.2324	0.4326	0.1578

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	100.0%	0.0065	99.6%	0.0123	0.0145	0.0076	0.0089	0.0073
2	13:45:19	99.0%	0.0092	99.1%	-0.0092	0.0211	0.0157	0.0092	0.0079
3	13:45:56	98.3%	0.0093	96.6%	0.0025	0.0131	0.0171	0.0187	0.0238
x		99.1%	0.0083	98.4%	0.0019	0.0162	0.0134	0.0123	0.0130
σ		0.8%	0.0016	1.6%	0.0107	0.0043	0.0051	0.0056	0.0094
%RSD		0.9	19.1081	1.6	574.8117	26.2100	38.1735	45.3779	71.9169

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	-0.0133	0.0043	96.9%	-0.0960	0.1204	-0.1028	-0.2724	98.7%
2	13:45:19	0.0217	0.0237	98.5%	0.0864	-0.0562	-0.0657	0.1947	99.3%
3	13:45:56	-0.0259	-0.0173	97.9%	-0.0730	-0.0021	-0.0763	-0.3099	99.0%
x		-0.0059	0.0035	97.7%	-0.0275	0.0207	-0.0816	-0.1292	99.0%
σ		0.0247	0.0205	0.8%	0.0993	0.0905	0.0191	0.2811	0.3%
%RSD		421.2734	578.2496	0.8	360.6172	437.2982	23.4582	217.6102	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	97.7%	0.0147	0.0160	98.0%	0.0098	0.0065	0.0058
2	13:45:19	99.5%	0.0153	0.0220	100.3%	0.0112	0.0108	0.0093
3	13:45:56	99.4%	0.0215	0.0214	101.3%	0.0077	0.0154	0.0091
x		98.9%	0.0172	0.0198	99.8%	0.0096	0.0109	0.0081
σ		1.0%	0.0038	0.0033	1.7%	0.0017	0.0044	0.0020
%RSD		1.0	21.8507	16.7311	1.7	18.1065	40.5944	24.5837

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	103.7%	0.0003	98.8%	0.0889	0.1072	0.2164	0.2181	2.4863
2	13:49:11	101.8%	0.0034	95.3%	0.0803	0.0691	0.2130	0.2280	2.4779
3	13:49:48	97.9%	0.0038	93.9%	0.0778	0.0921	0.2088	0.2014	2.4588
x		101.1%	0.0025	96.0%	0.0823	0.0895	0.2127	0.2159	2.4744
σ		3.0%	0.0019	2.5%	0.0058	0.0192	0.0038	0.0135	0.0141
%RSD		2.9	75.1372	2.6	7.0419	21.4774	1.7907	6.2367	0.5702

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	2.3237	2.3520	95.8%	-0.1079	2.1956	-0.1327	-0.1158	96.7%
2	13:49:11	2.2439	2.3731	95.2%	-0.0226	1.8031	-0.1323	-0.0868	96.8%
3	13:49:48	2.3458	2.3726	96.2%	-0.0453	1.9041	-0.0042	-0.0369	97.0%
x		2.3045	2.3659	95.7%	-0.0586	1.9676	-0.0897	-0.0799	96.9%
σ		0.0536	0.0121	0.5%	0.0442	0.2039	0.0741	0.0399	0.1%
%RSD		2.3260	0.5106	0.5	75.4141	10.3604	82.5619	49.9653	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	96.4%	0.0024	0.0082	97.3%	0.0185	0.0170	0.0167
2	13:49:11	97.5%	0.0145	0.0169	99.9%	0.0159	0.0195	0.0172
3	13:49:48	96.8%	0.0089	0.0126	99.7%	0.0171	0.0149	0.0156
x		96.9%	0.0086	0.0126	99.0%	0.0172	0.0171	0.0165
σ		0.6%	0.0060	0.0044	1.4%	0.0013	0.0023	0.0008
%RSD		0.6	69.9296	34.5970	1.4	7.5594	13.2104	4.8907

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	99.2%	0.0066	95.9%	0.0715	0.0592	0.2383	0.2227	0.7695
2	13:52:53	97.4%	0.0086	93.6%	0.0664	0.0850	0.2498	0.2235	0.8533
3	13:53:30	96.2%	0.0071	91.9%	0.0567	0.0650	0.2336	0.2272	0.8118
x		97.6%	0.0074	93.8%	0.0649	0.0697	0.2406	0.2245	0.8115
σ		1.6%	0.0010	2.0%	0.0075	0.0135	0.0083	0.0024	0.0419
%RSD		1.6	14.1099	2.1	11.5789	19.4325	3.4545	1.0820	5.1579

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	0.8830	0.8188	95.7%	-0.0446	1.7181	-0.3807	-0.1660	95.7%
2	13:52:53	0.8312	0.8032	95.6%	0.0293	1.8337	0.0318	0.0230	97.3%
3	13:53:30	0.7752	0.7330	94.3%	0.0521	1.9053	-0.0592	0.1821	95.9%
x		0.8298	0.7850	95.2%	0.0122	1.8190	-0.1360	0.0130	96.3%
σ		0.0539	0.0457	0.8%	0.0506	0.0944	0.2167	0.1743	0.9%
%RSD		6.4968	5.8228	0.8	412.6956	5.1917	159.3228	1335.8151	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	95.1%	0.0020	-0.0004	96.8%	0.0152	0.0218	0.0167
2	13:52:53	96.4%	0.0029	0.0009	98.4%	0.0194	0.0162	0.0168
3	13:53:30	96.1%	-0.0003	0.0036	98.2%	0.0163	0.0206	0.0164
x		95.9%	0.0015	0.0014	97.8%	0.0170	0.0196	0.0166
σ		0.7%	0.0017	0.0021	0.9%	0.0022	0.0029	0.0002
%RSD		0.7	109.9564	151.1583	0.9	12.8493	14.9866	1.3734

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	105.1%	0.0027	98.4%	0.0568	0.0272	0.0975	0.1110	0.8500
2	13:56:34	100.1%	0.0019	96.1%	0.0697	0.0428	0.0974	0.1062	0.7501
3	13:57:11	98.5%	0.0024	97.2%	0.0751	0.0768	0.1096	0.0910	0.7711
x		101.3%	0.0023	97.2%	0.0672	0.0489	0.1015	0.1028	0.7904
σ		3.4%	0.0004	1.1%	0.0094	0.0254	0.0070	0.0104	0.0526
%RSD		3.4	17.8069	1.2	14.0002	51.8746	6.9108	10.1564	6.6610
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	0.8154	0.7149	94.4%	-0.0029	1.8903	-0.1729	0.0232	95.8%
2	13:56:34	0.6830	0.6675	95.8%	-0.1513	2.0905	-0.2512	-0.3247	96.2%
3	13:57:11	0.7910	0.6553	95.3%	-0.0626	1.9548	-0.0321	-0.0864	95.7%
x		0.7631	0.6792	95.2%	-0.0723	1.9786	-0.1521	-0.1293	95.9%
σ		0.0705	0.0314	0.7%	0.0746	0.1022	0.1110	0.1779	0.3%
%RSD		9.2341	4.6303	0.7	103.2671	5.1649	72.9896	137.5526	0.3
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:55:58	94.7%	0.0008	-0.0034	95.6%	0.0340	0.0340	0.0341	
2	13:56:34	95.7%	0.0003	0.0008	97.5%	0.0356	0.0359	0.0327	
3	13:57:11	95.6%	-0.0043	0.0024	98.0%	0.0295	0.0284	0.0310	
x		95.3%	-0.0011	-0.0001	97.0%	0.0330	0.0328	0.0326	
σ		0.5%	0.0028	0.0030	1.2%	0.0032	0.0039	0.0015	
%RSD		0.6	257.8440	5433.1638	1.3	9.5936	11.7821	4.7405	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	108.2%	0.0098	98.1%	0.0672	0.0691	0.1303	0.1244	1.2645
2	14:00:13	99.6%	0.0044	96.7%	0.0595	0.0767	0.1134	0.1096	1.2753
3	14:00:50	97.9%	0.0068	94.9%	0.0752	0.0875	0.1319	0.1077	1.2561
x		101.9%	0.0070	96.6%	0.0673	0.0777	0.1252	0.1139	1.2653
σ		5.5%	0.0027	1.6%	0.0078	0.0093	0.0102	0.0091	0.0096
%RSD		5.4	38.6144	1.7	11.6520	11.9063	8.1837	8.0315	0.7572
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	1.1837	1.2131	95.6%	-0.0157	1.9058	-0.4390	-0.0971	96.1%
2	14:00:13	1.2721	1.1492	96.2%	0.0581	1.5030	0.0306	-0.1451	96.8%
3	14:00:50	1.1378	1.2129	94.7%	0.0235	1.8931	-0.2047	0.0630	96.8%
x		1.1979	1.1917	95.5%	0.0219	1.7673	-0.2044	-0.0597	96.6%
σ		0.0683	0.0369	0.8%	0.0369	0.2290	0.2348	0.1090	0.4%
%RSD		5.7021	3.0931	0.8	168.1549	12.9579	114.8950	182.3737	0.4
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	13:59:36	94.6%	-0.0013	-0.0010	96.0%	0.0322	0.0323	0.0330	
2	14:00:13	95.4%	-0.0025	-0.0022	97.7%	0.0330	0.0332	0.0329	
3	14:00:50	96.5%	0.0009	-0.0004	97.6%	0.0337	0.0356	0.0313	
x		95.5%	-0.0010	-0.0012	97.1%	0.0330	0.0337	0.0324	
σ		0.9%	0.0017	0.0009	0.9%	0.0007	0.0017	0.0010	
%RSD		1.0	176.6463	76.7616	0.9	2.2075	5.0381	2.9697	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	104.5%	0.0108	95.1%	0.1194	0.1402	0.2111	0.2064	1.7380
2	14:03:54	98.5%	0.0046	95.8%	0.1303	0.1311	0.2088	0.2136	1.7289
3	14:04:30	100.5%	0.0077	93.4%	0.1323	0.0981	0.2321	0.2024	1.7849
x		101.2%	0.0077	94.8%	0.1273	0.1231	0.2173	0.2075	1.7506
σ		3.1%	0.0031	1.2%	0.0069	0.0221	0.0129	0.0057	0.0301
%RSD		3.0	40.6853	1.3	5.4438	17.9721	5.9172	2.7237	1.7185

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	1.8054	1.6954	95.7%	0.0497	1.8817	-0.1014	0.0409	95.3%
2	14:03:54	1.6991	1.8204	95.6%	0.0979	1.7309	-0.3085	0.2311	96.3%
3	14:04:30	1.8083	1.6960	96.2%	-0.1613	2.3790	-0.1119	-0.1457	95.9%
x		1.7710	1.7373	95.8%	-0.0046	1.9972	-0.1739	0.0421	95.9%
σ		0.0622	0.0720	0.3%	0.1379	0.3392	0.1166	0.1884	0.5%
%RSD		3.5137	4.1421	0.3	3018.6515	16.9816	67.0601	447.9371	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	94.2%	0.0037	-0.0036	96.1%	0.0885	0.0774	0.0858
2	14:03:54	96.2%	0.0025	0.0006	98.3%	0.0851	0.0835	0.0830
3	14:04:30	96.4%	0.0011	-0.0010	98.3%	0.0926	0.0857	0.0863
x		95.6%	0.0024	-0.0013	97.6%	0.0887	0.0822	0.0850
σ		1.2%	0.0013	0.0021	1.3%	0.0038	0.0043	0.0018
%RSD		1.3	52.7622	160.0935	1.3	4.2331	5.1992	2.0749

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	103.7%	0.0020	97.7%	0.0783	0.1060	0.0630	0.0625	1.2312
2	14:07:40	97.5%	0.0004	93.4%	0.0808	0.0539	0.0687	0.0647	1.2511
3	14:08:17	98.9%	0.0003	94.7%	0.0825	0.0568	0.0729	0.0631	1.3434
x		100.0%	0.0009	95.3%	0.0806	0.0722	0.0682	0.0634	1.2752
σ		3.2%	0.0010	2.2%	0.0021	0.0293	0.0050	0.0012	0.0598
%RSD		3.2	109.3727	2.3	2.6230	40.5345	7.2790	1.8416	4.6911

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	1.1812	1.1795	95.9%	0.0003	2.2113	-0.1459	0.1625	95.8%
2	14:07:40	1.3525	1.1847	94.9%	-0.0506	1.9848	-0.2805	-0.0069	96.7%
3	14:08:17	1.1885	1.2042	95.8%	0.0713	1.7641	-0.3432	0.1212	97.1%
x		1.2407	1.1895	95.5%	0.0070	1.9867	-0.2565	0.0923	96.5%
σ		0.0968	0.0130	0.6%	0.0612	0.2236	0.1008	0.0883	0.7%
%RSD		7.8036	1.0915	0.6	874.0161	11.2546	39.2927	95.6913	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	95.4%	-0.0040	-0.0048	95.6%	0.0141	0.0158	0.0136
2	14:07:40	96.4%	-0.0065	-0.0066	99.0%	0.0170	0.0125	0.0142
3	14:08:17	95.7%	-0.0026	-0.0049	98.7%	0.0150	0.0149	0.0140
x		95.8%	-0.0044	-0.0054	97.8%	0.0154	0.0144	0.0139
σ		0.5%	0.0020	0.0010	1.8%	0.0015	0.0017	0.0003
%RSD		0.5	45.7093	19.0705	1.9	9.8077	11.5867	2.1741

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	95.2%	0.0027	96.1%	0.1303	0.1453	0.1095	0.1068	0.4891
2	14:11:13	99.7%	0.0023	93.2%	0.1592	0.1649	0.1256	0.0987	0.4937
3	14:11:49	93.5%	0.0025	93.5%	0.1477	0.1328	0.1085	0.1162	0.5063
x		96.1%	0.0025	94.3%	0.1457	0.1477	0.1145	0.1072	0.4964
σ		3.2%	0.0002	1.6%	0.0145	0.0162	0.0096	0.0088	0.0089
%RSD		3.4	7.8230	1.7	9.9584	10.9394	8.3850	8.1675	1.7960

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	0.5249	0.4575	95.2%	0.0704	1.7255	-0.2164	-0.0672	95.8%
2	14:11:13	0.5409	0.4395	96.3%	0.0956	1.9053	-0.1627	0.1605	96.6%
3	14:11:49	0.5638	0.3880	95.5%	-0.0047	2.0711	-0.1985	-0.0856	96.1%
x		0.5432	0.4283	95.7%	0.0538	1.9007	-0.1926	0.0026	96.2%
σ		0.0195	0.0361	0.5%	0.0521	0.1728	0.0274	0.1371	0.4%
%RSD		3.5978	8.4249	0.6	96.9549	9.0939	14.2074	5290.3657	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	94.8%	-0.0063	-0.0068	97.1%	0.0085	0.0116	0.0097
2	14:11:13	96.4%	-0.0055	-0.0034	100.0%	0.0110	0.0126	0.0110
3	14:11:49	96.4%	-0.0065	-0.0060	100.3%	0.0094	0.0098	0.0090
x		95.9%	-0.0061	-0.0054	99.1%	0.0097	0.0113	0.0099
σ		0.9%	0.0005	0.0018	1.7%	0.0013	0.0014	0.0011
%RSD		0.9	8.7059	32.9320	1.7	13.1644	12.5821	10.7389

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	99.1%	0.0037	94.5%	0.2330	0.2037	0.2100	0.2283	1.0785
2	14:14:53	93.7%	0.0056	93.7%	0.2201	0.2079	0.2288	0.2036	1.1158
3	14:15:30	94.7%	0.0068	91.7%	0.2319	0.2026	0.2311	0.2194	1.1516
x		95.8%	0.0053	93.3%	0.2283	0.2047	0.2233	0.2171	1.1153
σ		2.9%	0.0016	1.4%	0.0072	0.0028	0.0116	0.0125	0.0365
%RSD		3.0	29.6000	1.5	3.1357	1.3836	5.1805	5.7466	3.2764

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	0.9382	1.1112	94.7%	-0.0584	2.0225	-0.0253	-0.1979	95.4%
2	14:14:53	1.0840	1.0958	94.7%	-0.0112	2.0443	-0.1775	-0.2476	96.5%
3	14:15:30	0.9445	1.0518	94.5%	0.0329	1.8158	-0.1423	0.0327	96.7%
x		0.9889	1.0863	94.6%	-0.0122	1.9609	-0.1150	-0.1376	96.2%
σ		0.0824	0.0309	0.1%	0.0457	0.1261	0.0796	0.1495	0.7%
%RSD		8.3337	2.8413	0.1	373.7535	6.4302	69.2326	108.6710	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	95.4%	-0.0084	-0.0065	97.1%	0.0263	0.0225	0.0234
2	14:14:53	96.5%	-0.0055	-0.0037	98.9%	0.0285	0.0299	0.0285
3	14:15:30	96.8%	-0.0081	-0.0041	100.0%	0.0272	0.0207	0.0247
x		96.2%	-0.0073	-0.0048	98.7%	0.0273	0.0244	0.0255
σ		0.7%	0.0016	0.0015	1.5%	0.0011	0.0049	0.0026
%RSD		0.8	21.7863	31.7039	1.5	3.8975	20.0326	10.3483

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	98.5%	0.0037	95.6%	0.0975	0.1161	0.0832	0.0928	0.3106
2	14:18:28	95.9%	0.0014	93.1%	0.0974	0.0783	0.0709	0.0724	0.3306
3	14:19:05	98.3%	0.0012	93.9%	0.1066	0.0695	0.0749	0.0721	0.3600
x		97.6%	0.0021	94.2%	0.1005	0.0880	0.0763	0.0791	0.3337
σ		1.4%	0.0014	1.3%	0.0053	0.0248	0.0063	0.0119	0.0248
%RSD		1.5	67.7052	1.4	5.2257	28.1370	8.2119	15.0095	7.4326

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	0.4035	0.3121	94.6%	0.0393	2.0771	0.0549	0.1540	95.8%
2	14:18:28	0.3922	0.3426	94.8%	0.1663	1.5294	-0.0809	0.0335	96.1%
3	14:19:05	0.3501	0.3209	95.7%	0.0884	1.6205	-0.0148	-0.1474	96.6%
x		0.3819	0.3252	95.0%	0.0980	1.7424	-0.0136	0.0134	96.2%
σ		0.0281	0.0157	0.6%	0.0641	0.2935	0.0679	0.1517	0.4%
%RSD		7.3646	4.8263	0.6	65.3836	16.8444	498.4866	1134.1936	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	94.4%	-0.0057	-0.0077	97.1%	0.0097	0.0092	0.0090
2	14:18:28	96.3%	-0.0067	-0.0112	98.5%	0.0146	0.0134	0.0110
3	14:19:05	96.5%	-0.0070	-0.0080	99.3%	0.0107	0.0125	0.0112
x		95.7%	-0.0065	-0.0090	98.3%	0.0117	0.0117	0.0104
σ		1.1%	0.0007	0.0020	1.1%	0.0026	0.0022	0.0012
%RSD		1.2	10.7266	21.8614	1.1	22.5106	18.6742	11.9651

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	103.4%	24.6848	97.2%	25.8973	25.3909	25.4026	25.9189	25.6806
2	14:22:00	101.0%	24.8784	97.4%	25.4249	25.1996	25.0559	24.9735	25.4780
3	14:22:37	102.0%	24.5257	98.1%	25.2934	24.9972	24.9115	25.4667	25.2623
x		102.1%	24.6963	97.5%	25.5385	25.1959	25.1233	25.4531	25.4736
σ		1.2%	0.1766	0.5%	0.3176	0.1968	0.2524	0.4729	0.2092
%RSD		1.2	0.7152	0.5	1.2435	0.7813	1.0048	1.8578	0.8212

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	24.8011	25.5555	97.1%	25.6419	24.9977	25.1826	25.8178	97.5%
2	14:22:00	25.1232	24.8745	98.6%	25.2047	24.8743	24.5652	25.3155	97.9%
3	14:22:37	24.5761	25.0287	98.5%	25.1401	25.4988	24.7982	25.4012	99.1%
x		24.8335	25.1529	98.1%	25.3289	25.1236	24.8487	25.5115	98.2%
σ		0.2750	0.3571	0.9%	0.2729	0.3307	0.3118	0.2687	0.8%
%RSD		1.1072	1.4198	0.9	1.0776	1.3164	1.2546	1.0534	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	96.9%	24.9602	24.7514	97.8%	25.1074	25.1317	25.1583
2	14:22:00	98.1%	25.0018	24.8196	100.0%	25.1121	24.9996	24.9430
3	14:22:37	98.8%	24.7085	24.7473	99.6%	25.2657	25.0152	25.2027
x		97.9%	24.8902	24.7728	99.1%	25.1617	25.0488	25.1013
σ		1.0%	0.1587	0.0406	1.1%	0.0901	0.0722	0.1389
%RSD		1.0	0.6377	0.1639	1.1	0.3580	0.2882	0.5533

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	106.1%	0.0097	100.6%	0.0182	0.0061	0.0157	0.0200	0.0268
2	14:31:08	101.9%	0.0186	99.4%	0.0005	0.0468	0.0168	0.0166	0.0232
3	14:31:45	103.7%	0.0105	100.4%	0.0076	0.0087	0.0105	0.0097	0.0095
x		103.9%	0.0129	100.1%	0.0088	0.0205	0.0143	0.0154	0.0198
σ		2.1%	0.0049	0.7%	0.0089	0.0228	0.0034	0.0052	0.0091
%RSD		2.0	38.1260	0.7	102.0424	110.8877	23.3548	33.7771	45.8437

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	0.0030	0.0204	98.8%	-0.0503	0.1655	-0.2904	-0.1131	98.3%
2	14:31:08	-0.0156	0.0170	99.8%	0.0251	0.0958	-0.1217	0.1446	99.4%
3	14:31:45	0.0033	0.0026	98.6%	-0.0651	-0.0046	-0.0427	-0.2981	99.9%
x		-0.0031	0.0133	99.0%	-0.0301	0.0856	-0.1516	-0.0889	99.2%
σ		0.0108	0.0095	0.6%	0.0484	0.0855	0.1265	0.2223	0.8%
%RSD		347.0159	71.1854	0.6	160.6724	99.9414	83.4676	250.2364	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	97.8%	0.0092	0.0069	96.3%	0.0130	0.0135	0.0129
2	14:31:08	99.2%	0.0157	0.0168	98.8%	0.0110	0.0151	0.0133
3	14:31:45	98.9%	0.0113	0.0075	99.0%	0.0145	0.0138	0.0134
x		98.6%	0.0121	0.0104	98.0%	0.0128	0.0142	0.0132
σ		0.7%	0.0033	0.0055	1.5%	0.0018	0.0009	0.0003
%RSD		0.8	27.4597	53.1143	1.5	13.8869	6.0311	2.0834

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	102.4%	0.0070	99.8%	0.0039	0.0144	0.0147	0.0137	0.0342
2	14:34:56	103.5%	0.0113	99.4%	-0.0019	0.0361	0.0130	0.0184	0.0258
3	14:35:33	106.5%	0.0081	98.4%	0.0119	0.0162	0.0123	0.0201	0.0002
x		104.2%	0.0088	99.2%	0.0046	0.0222	0.0133	0.0174	0.0201
σ		2.1%	0.0023	0.7%	0.0069	0.0120	0.0012	0.0033	0.0177
%RSD		2.0	25.6081	0.7	150.4790	54.1205	9.0138	19.0341	88.3850

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	0.0095	0.0158	98.4%	-0.0281	-0.0693	-0.0859	-0.1826	99.4%
2	14:34:56	-0.0218	-0.0013	100.1%	-0.0644	0.0806	-0.1019	-0.1896	100.9%
3	14:35:33	-0.0163	0.0337	101.0%	-0.0151	0.0901	-0.2698	0.0108	101.3%
x		-0.0095	0.0160	99.8%	-0.0359	0.0338	-0.1526	-0.1205	100.5%
σ		0.0167	0.0175	1.3%	0.0256	0.0894	0.1019	0.1138	1.0%
%RSD		175.4036	109.2396	1.3	71.3260	264.6664	66.7625	94.4279	1.0

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	99.0%	0.0017	0.0027	97.3%	0.0080	0.0053	0.0061
2	14:34:56	100.4%	0.0048	0.0091	99.2%	0.0076	0.0084	0.0084
3	14:35:33	99.9%	0.0044	0.0019	99.4%	0.0084	0.0081	0.0070
x		99.8%	0.0036	0.0045	98.7%	0.0080	0.0073	0.0072
σ		0.7%	0.0017	0.0039	1.2%	0.0004	0.0017	0.0012
%RSD		0.7	47.1398	86.4013	1.2	5.4158	23.6269	16.4987

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	105.8%	0.0225	100.4%	0.1481	0.1856	0.0977	0.0962	0.5535
2	14:38:35	101.6%	0.0261	99.8%	0.1763	0.1981	0.1051	0.0887	0.5176
3	14:39:11	102.5%	0.0156	98.5%	0.1670	0.1653	0.0999	0.0853	0.4696
x		103.3%	0.0214	99.6%	0.1638	0.1830	0.1009	0.0901	0.5136
σ		2.2%	0.0053	1.0%	0.0144	0.0166	0.0038	0.0056	0.0421
%RSD		2.1	24.9043	1.0	8.7793	9.0511	3.7360	6.1868	8.1904

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	0.3758	0.4672	98.7%	0.4774	1.0626	1.2671	0.9370	100.4%
2	14:38:35	0.4632	0.4731	99.4%	0.5283	0.8462	0.9208	0.8838	101.1%
3	14:39:11	0.5736	0.5037	99.1%	0.5500	1.0556	1.1144	1.2166	101.2%
x		0.4709	0.4813	99.1%	0.5186	0.9882	1.1007	1.0125	100.9%
σ		0.0991	0.0196	0.3%	0.0373	0.1230	0.1735	0.1788	0.4%
%RSD		21.0487	4.0760	0.3	7.1837	12.4433	15.7658	17.6574	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	98.7%	0.0496	0.0418	98.3%	0.0181	0.0173	0.0198
2	14:38:35	101.1%	0.0511	0.0486	99.6%	0.0215	0.0205	0.0197
3	14:39:11	100.9%	0.0480	0.0486	100.3%	0.0242	0.0199	0.0217
x		100.2%	0.0496	0.0463	99.4%	0.0213	0.0192	0.0204
σ		1.4%	0.0015	0.0039	1.1%	0.0031	0.0017	0.0011
%RSD		1.3	3.1022	8.4938	1.1	14.5127	8.9172	5.5793

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	103.5%	-0.0025	98.9%	-0.0268	0.0147	0.0041	0.0037	0.0043
2	14:42:12	107.0%	0.0009	98.4%	-0.0224	-0.0291	0.0025	0.0039	0.0756
3	14:42:49	99.2%	0.0028	96.4%	-0.0212	-0.0005	0.0083	0.0096	0.0604
x		103.2%	0.0004	97.9%	-0.0235	-0.0050	0.0050	0.0057	0.0467
σ		3.9%	0.0027	1.3%	0.0030	0.0222	0.0030	0.0033	0.0376
%RSD		3.8	656.2734	1.4	12.6680	446.8010	59.7810	58.3608	80.3875

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	0.1760	0.0226	97.1%	-0.0807	1.9501	0.2267	-0.0669	98.0%
2	14:42:12	0.1290	0.0759	99.3%	0.0119	1.8419	0.0796	0.0498	98.5%
3	14:42:49	0.0715	0.0588	97.9%	-0.0292	1.6712	-0.0548	-0.1614	97.8%
x		0.1255	0.0525	98.1%	-0.0327	1.8211	0.0838	-0.0595	98.1%
σ		0.0523	0.0272	1.1%	0.0464	0.1406	0.1408	0.1058	0.4%
%RSD		41.7013	51.8588	1.1	141.9717	7.7217	167.9589	177.8220	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	96.9%	-0.0055	-0.0050	96.3%	0.0075	0.0086	0.0045
2	14:42:12	98.1%	-0.0075	-0.0062	98.6%	0.0090	0.0065	0.0091
3	14:42:49	97.9%	-0.0049	-0.0033	99.1%	0.0065	0.0128	0.0077
x		97.6%	-0.0060	-0.0048	98.0%	0.0076	0.0093	0.0071
σ		0.6%	0.0013	0.0015	1.5%	0.0013	0.0032	0.0024
%RSD		0.7	22.1856	30.6343	1.5	16.7291	34.6926	33.1868

8/4/16

DNR Zn LCW out of control

KQ1608449-02 8/3/2016 2:45:08 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	104.6%	2.5384	99.9%	25.5074	25.4862	12.9593	12.7608	34.8915
2	14:45:45	102.0%	2.5837	99.0%	25.0479	24.8492	12.6384	12.5448	35.4127
3	14:46:21	101.3%	2.5224	97.8%	25.7277	25.1693	12.9701	13.0005	35.9762
x		102.6%	2.5482	98.9%	25.4277	25.1682	12.8559	12.7687	35.4268
σ		1.7%	0.0318	1.1%	0.3469	0.3185	0.1885	0.2280	0.5425
%RSD		1.7	1.2472	1.1	1.3641	1.2655	1.4659	1.7854	1.5312

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	38.3469	37.0963	99.2%	50.6793	50.2530	50.1731	50.5431	99.9%
2	14:45:45	37.9095	37.4868	100.1%	49.4681	51.3486	49.0890	49.6194	98.9%
3	14:46:21	39.3934	37.7582	98.1%	50.6486	51.0318	50.9848	50.5353	99.6%
x		38.5499	37.4471	99.1%	50.2653	50.8778	50.0823	50.2326	99.5%
σ		0.7625	0.3327	1.0%	0.6906	0.5638	0.9511	0.5310	0.5%
%RSD		1.9780	0.8886	1.0	1.3739	1.1082	1.8991	1.0571	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	97.4%	50.5366	50.1233	98.0%	49.5263	50.4561	50.1429
2	14:45:45	99.2%	49.7170	49.7333	99.5%	49.9081	51.4302	50.9050
3	14:46:21	99.8%	49.8135	49.5506	99.9%	49.9816	51.2589	50.6962
x		98.8%	50.0224	49.8024	99.1%	49.8053	51.0484	50.5814
σ		1.2%	0.4479	0.2925	1.0%	0.2444	0.5200	0.3938
%RSD		1.2	0.8954	0.5874	1.0	0.4908	1.0187	0.7786

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	106.7%	2.4560	97.8%	25.8863	25.2367	12.6671	12.9210	25.4538
2	14:50:52	97.8%	2.5326	96.8%	25.4817	25.1756	12.6830	12.7855	25.5581
3	14:51:29	98.6%	2.4679	97.3%	25.4445	25.1684	12.6283	12.4873	25.2749
x		101.0%	2.4855	97.3%	25.6042	25.1936	12.6594	12.7313	25.4273
σ		4.9%	0.0412	0.5%	0.2451	0.0375	0.0282	0.2219	0.1410
%RSD		4.8	1.6584	0.5	0.9571	0.1489	0.2224	1.7428	0.5544

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	30.0122	27.7241	98.0%	51.3104	52.0132	50.2698	49.5731	98.4%
2	14:50:52	30.0582	27.9650	97.4%	51.1673	53.1600	50.0804	50.8574	99.2%
3	14:51:29	29.3583	27.8699	98.0%	50.8767	52.7403	51.4413	50.2583	97.9%
x		29.8096	27.8530	97.8%	51.1181	52.6378	50.5972	50.2296	98.5%
σ		0.3915	0.1214	0.3%	0.2210	0.5803	0.7371	0.6426	0.7%
%RSD		1.3134	0.4357	0.3	0.4323	1.1024	1.4569	1.2793	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	96.6%	51.0810	50.5821	97.9%	50.2172	51.8771	51.3157
2	14:50:52	98.1%	50.9856	50.8394	99.2%	50.7402	52.1238	51.8103
3	14:51:29	98.0%	50.8107	50.7637	99.9%	50.8752	52.6546	51.8684
x		97.6%	50.9591	50.7284	99.0%	50.6109	52.2185	51.6648
σ		0.8%	0.1371	0.1322	1.0%	0.3475	0.3973	0.3037
%RSD		0.9	0.2690	0.2606	1.1	0.6866	0.7609	0.5879

K1608011-007 8/3/2016 2:55:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	106.3%	0.0026	97.4%	0.1534	0.1293	0.1154	0.1164	1.2748
2	14:56:17	101.2%	0.0026	98.0%	0.1289	0.1411	0.1238	0.1147	1.2274
3	14:56:53	102.2%	0.0025	96.1%	0.1347	0.1180	0.1106	0.1273	1.2581
x		103.2%	0.0026	97.2%	0.1390	0.1295	0.1166	0.1195	1.2534
σ		2.7%	0.0000	1.0%	0.0128	0.0115	0.0067	0.0069	0.0241
%RSD		2.6	1.4056	1.0	9.2171	8.9164	5.7353	5.7563	1.9188

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	1.1626	1.1121	97.1%	0.0692	1.8763	-0.2635	0.2386	96.6%
2	14:56:17	1.2155	1.2356	96.6%	0.1086	1.9315	0.2903	0.3660	98.1%
3	14:56:53	1.3858	1.1323	97.1%	0.0364	1.8666	-0.4020	0.2357	98.8%
x		1.2546	1.1600	96.9%	0.0714	1.8915	-0.1251	0.2801	97.9%
σ		0.1166	0.0663	0.3%	0.0361	0.0350	0.3663	0.0744	1.1%
%RSD		9.2972	5.7112	0.3	50.6259	1.8512	292.8757	26.5530	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	95.2%	0.0097	0.0102	96.2%	0.0296	0.0314	0.0336
2	14:56:17	97.6%	0.0120	0.0131	98.5%	0.0372	0.0375	0.0365
3	14:56:53	98.4%	0.0160	0.0132	98.0%	0.0453	0.0385	0.0394
x		97.1%	0.0126	0.0122	97.5%	0.0374	0.0358	0.0365
σ		1.7%	0.0032	0.0017	1.2%	0.0079	0.0038	0.0029
%RSD		1.7	25.4551	13.7139	1.2	21.0107	10.7407	7.9786

K1608011-007L 8/3/2016 2:59:17 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	102.6%	0.0017	98.5%	0.0018	0.0182	0.0240	0.0290	0.2348
2	14:59:53	94.6%	0.0019	95.9%	0.0184	0.0481	0.0307	0.0135	0.2514
3	15:00:29	98.5%	-0.0018	96.1%	0.0087	0.0153	0.0208	0.0253	0.2359
x		98.6%	0.0006	96.8%	0.0096	0.0272	0.0251	0.0226	0.2407
σ		4.0%	0.0021	1.5%	0.0084	0.0182	0.0051	0.0081	0.0083
%RSD		4.0	368.5036	1.5	86.9956	66.7941	20.1807	35.7776	3.8612

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	0.2645	0.2526	96.2%	0.0163	0.5377	0.1869	0.1394	98.0%
2	14:59:53	0.2482	0.2585	98.0%	0.0014	0.3789	0.1310	-0.0479	98.6%
3	15:00:29	0.2777	0.2596	96.4%	-0.0290	0.3223	0.0823	-0.2240	98.5%
x		0.2635	0.2569	96.9%	-0.0038	0.4130	0.1334	-0.0442	98.4%
σ		0.0148	0.0038	1.0%	0.0231	0.1117	0.0524	0.1817	0.3%
%RSD		5.6054	1.4659	1.0	613.2491	27.0406	39.2474	411.4784	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	97.5%	-0.0109	-0.0149	97.3%	0.0062	0.0058	0.0063
2	14:59:53	98.2%	-0.0117	-0.0140	98.7%	0.0087	0.0082	0.0065
3	15:00:29	98.3%	-0.0068	-0.0111	100.0%	0.0088	0.0076	0.0074
x		98.0%	-0.0098	-0.0133	98.7%	0.0079	0.0072	0.0067
σ		0.5%	0.0027	0.0020	1.3%	0.0015	0.0012	0.0006
%RSD		0.5	27.2225	14.9429	1.3	18.7627	17.2984	8.6277

K1608011-007A 8/3/2016 3:02:51 PM

8/4/16

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	104.0%	21.0841	97.0%	21.8657	21.6656	21.8976	22.7613	23.1381
2	15:03:27	99.5%	21.2583	97.4%	21.5899	21.1094	21.3516	21.3418	22.4052
3	15:04:04	97.3%	20.7809	94.0%	21.8576	22.0342	21.8697	22.3049	23.0866
x		100.3%	21.0411	96.1%	21.7711	21.6031	21.7063	22.1360	22.8767
σ		3.4%	0.2416	1.9%	0.1570	0.4656	0.3075	0.7247	0.4091
%RSD		3.4	1.1482	1.9	0.7210	2.1552	1.4167	3.2736	1.7881

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	22.6908	22.8828	96.2%	21.5424	23.2691	21.4486	20.2022	97.8%
2	15:03:27	22.0119	22.3463	97.6%	21.4800	23.4551	20.7177	20.9757	97.2%
3	15:04:04	22.6792	22.5721	95.7%	21.8317	22.1326	20.1640	21.1168	97.7%
x		22.4607	22.6004	96.5%	21.6181	22.9523	20.7768	20.7649	97.6%
σ		0.3887	0.2694	1.0%	0.1877	0.7159	0.6444	0.4924	0.3%
%RSD		1.7305	1.1919	1.0	0.8681	3.1192	3.1013	2.3711	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	98.1%	21.5526	21.4968	97.3%	21.5098	21.2928	21.4356
2	15:03:27	98.7%	21.7927	21.5765	99.6%	21.4689	21.4438	21.5211
3	15:04:04	98.4%	21.7961	21.6420	99.5%	21.5373	21.3620	21.5330
x		98.4%	21.7138	21.5718	98.8%	21.5053	21.3662	21.4966
σ		0.3%	0.1396	0.0727	1.3%	0.0345	0.0756	0.0531
%RSD		0.3	0.6430	0.3371	1.3	0.1602	0.3538	0.2471

K1608207-015 8/3/2016 3:06:51 PM

8/4/16

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	100.9%	0.0043	95.4%	0.1810	0.1602	0.1479	0.1467	1.2657
2	15:07:28	98.3%	0.0029	96.4%	0.1754	0.1575	0.1425	0.1495	1.3052
3	15:08:04	97.3%	0.0142	96.8%	0.1714	0.1879	0.1461	0.1647	1.2784
x		98.8%	0.0071	96.2%	0.1759	0.1686	0.1455	0.1536	1.2831
σ		1.8%	0.0062	0.7%	0.0048	0.0168	0.0027	0.0097	0.0201
%RSD		1.9	86.4837	0.8	2.7413	9.9881	1.8610	6.3049	1.5703

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	1.2254	1.2172	95.2%	0.0589	1.9261	-0.0769	0.3208	96.5%
2	15:07:28	1.3036	1.1996	96.8%	-0.0027	2.0088	-0.1439	0.1591	98.2%
3	15:08:04	1.2007	1.0761	97.1%	0.0358	1.8064	-0.1342	0.0027	97.5%
x		1.2432	1.1643	96.3%	0.0307	1.9138	-0.1183	0.1609	97.4%
σ		0.0537	0.0769	1.0%	0.0311	0.1017	0.0362	0.1590	0.9%
%RSD		4.3214	6.6053	1.0	101.3181	5.3167	30.6327	98.8747	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	95.8%	-0.0010	0.0001	97.1%	0.0334	0.0345	0.0319
2	15:07:28	97.4%	0.0019	0.0066	98.7%	0.0319	0.0320	0.0347
3	15:08:04	97.5%	0.0160	0.0092	99.4%	0.0482	0.0531	0.0485
x		96.9%	0.0056	0.0053	98.4%	0.0378	0.0399	0.0384
σ		1.0%	0.0091	0.0047	1.2%	0.0090	0.0115	0.0089
%RSD		1.0	161.0468	88.4407	1.2	23.7618	28.9550	23.1407

K1608209-015 8/3/2016 3:10:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	99.9%	0.0002	97.7%	0.0513	0.0455	0.0709	0.0796	0.7591
2	15:11:03	97.9%	0.0068	95.0%	0.0661	0.0528	0.0937	0.0755	0.7749
3	15:11:38	97.8%	0.0025	96.3%	0.0495	0.0414	0.0793	0.0650	0.7587
x		98.5%	0.0032	96.3%	0.0556	0.0466	0.0813	0.0734	0.7642
σ		1.2%	0.0034	1.3%	0.0091	0.0058	0.0116	0.0075	0.0092
%RSD		1.2	106.3219	1.4	16.3658	12.4257	14.2082	10.2612	1.2068

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	0.9145	0.7674	96.0%	0.0143	2.0034	0.0450	0.2189	96.7%
2	15:11:03	0.7813	0.7692	96.1%	0.0345	1.8136	-0.0358	0.2003	96.6%
3	15:11:38	0.6904	0.7818	97.4%	-0.0508	1.8843	-0.1655	-0.1250	96.6%
x		0.7954	0.7728	96.5%	-0.0007	1.9004	-0.0521	0.0981	96.6%
σ		0.1127	0.0079	0.8%	0.0446	0.0959	0.1062	0.1934	0.1%
%RSD		14.1651	1.0160	0.8	6322.1316	5.0455	203.8613	197.1959	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	96.3%	-0.0062	-0.0076	96.6%	0.0169	0.0166	0.0159
2	15:11:03	96.8%	-0.0022	0.0005	98.7%	0.0168	0.0231	0.0192
3	15:11:38	96.8%	-0.0048	-0.0028	98.7%	0.0229	0.0185	0.0185
x		96.6%	-0.0044	-0.0033	98.0%	0.0189	0.0194	0.0179
σ		0.3%	0.0020	0.0041	1.2%	0.0035	0.0033	0.0018
%RSD		0.3	45.6438	124.5802	1.3	18.5656	17.1083	9.8436

K1608210-015 8/3/2016 3:14:03 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	101.7%	0.0034	94.3%	0.1444	0.1385	0.0779	0.0659	0.4126
2	15:14:40	98.7%	0.0003	95.3%	0.1518	0.1189	0.0723	0.0609	0.4439
3	15:15:16	98.2%	0.0008	93.3%	0.1439	0.1163	0.0699	0.0778	0.4227
x		99.6%	0.0015	94.3%	0.1467	0.1246	0.0734	0.0682	0.4264
σ		1.9%	0.0017	1.0%	0.0044	0.0121	0.0041	0.0087	0.0160
%RSD		1.9	113.9226	1.1	3.0200	9.7491	5.5900	12.7489	3.7439

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	0.5037	0.4309	94.9%	0.0078	1.7269	-0.0468	-0.1872	97.1%
2	15:14:40	0.4221	0.4553	96.0%	0.0245	1.9123	-0.1676	0.0430	96.0%
3	15:15:16	0.4868	0.4175	94.7%	0.0093	1.8659	0.2679	0.0534	97.0%
x		0.4709	0.4346	95.2%	0.0139	1.8350	0.0179	-0.0303	96.7%
σ		0.0431	0.0192	0.7%	0.0092	0.0964	0.2248	0.1360	0.6%
%RSD		9.1475	4.4117	0.8	66.7038	5.2554	1259.1868	449.6678	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	96.0%	-0.0072	-0.0089	96.6%	0.0194	0.0205	0.0194
2	15:14:40	96.8%	-0.0055	-0.0064	98.2%	0.0203	0.0217	0.0190
3	15:15:16	96.4%	-0.0068	-0.0070	98.9%	0.0172	0.0220	0.0182
x		96.4%	-0.0065	-0.0074	97.9%	0.0190	0.0214	0.0189
σ		0.4%	0.0009	0.0013	1.2%	0.0016	0.0008	0.0006
%RSD		0.4	13.2764	17.7479	1.2	8.3234	3.5657	3.3810

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	102.6%	24.9203	98.1%	25.6534	25.1509	25.3747	25.8305	25.9470
2	15:18:15	98.0%	24.6290	97.4%	25.4612	25.3587	25.6593	25.7221	25.6369
3	15:18:51	94.4%	25.4136	98.0%	25.1892	25.1400	24.7310	24.8971	25.0410
x		98.3%	24.9876	97.9%	25.4346	25.2165	25.2550	25.4832	25.5416
σ		4.1%	0.3966	0.4%	0.2333	0.1233	0.4756	0.5105	0.4605
%RSD		4.2	1.5873	0.4	0.9171	0.4889	1.8831	2.0033	1.8028

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	25.6209	25.0331	97.6%	25.4513	24.5401	24.6699	24.5473	98.3%
2	15:18:15	25.5059	25.2442	96.9%	24.6204	26.1055	25.0593	24.3395	99.6%
3	15:18:51	25.5154	25.1255	98.8%	24.9823	24.9418	24.9622	25.0573	99.6%
x		25.5474	25.1343	97.7%	25.0180	25.1958	24.8972	24.6480	99.2%
σ		0.0638	0.1058	1.0%	0.4166	0.8130	0.2027	0.3693	0.7%
%RSD		0.2498	0.4210	1.0	1.6651	3.2269	0.8141	1.4984	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	98.7%	24.6793	24.5092	99.0%	25.4580	25.1410	25.2942
2	15:18:15	99.2%	25.2342	24.9597	100.1%	25.3748	25.2297	25.3759
3	15:18:51	100.4%	25.0373	24.9185	101.0%	25.3920	25.4493	25.4656
x		99.4%	24.9836	24.7958	100.0%	25.4083	25.2733	25.3785
σ		0.9%	0.2813	0.2491	1.0%	0.0439	0.1587	0.0857
%RSD		0.9	1.1260	1.0046	1.0	0.1729	0.6280	0.3378

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	108.2%	0.0071	99.9%	0.0079	0.0410	0.0139	0.0080	-0.0094
2	15:27:36	102.9%	0.0159	100.0%	0.0015	0.0350	0.0193	0.0202	0.0293
3	15:28:13	99.3%	0.0133	99.5%	0.0167	0.0286	0.0199	0.0192	0.0118
x		103.5%	0.0121	99.8%	0.0087	0.0348	0.0177	0.0158	0.0106
σ		4.5%	0.0045	0.3%	0.0076	0.0062	0.0033	0.0068	0.0194
%RSD		4.3	37.5054	0.3	87.4039	17.7926	18.8768	42.8159	183.3938

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	0.0343	0.0190	97.9%	0.0184	0.1422	-0.0608	0.1570	99.4%
2	15:27:36	0.0758	0.0054	98.4%	-0.0513	0.1776	0.2733	-0.0750	101.2%
3	15:28:13	0.0264	0.0017	99.5%	-0.0090	0.0563	-0.2014	-0.0748	101.4%
x		0.0455	0.0087	98.6%	-0.0140	0.1254	0.0037	0.0024	100.6%
σ		0.0266	0.0091	0.9%	0.0351	0.0624	0.2438	0.1338	1.1%
%RSD		58.3615	104.6443	0.9	251.7587	49.7524	6596.4383	5548.1478	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	98.1%	0.0144	0.0143	96.5%	0.0107	0.0059	0.0078
2	15:27:36	99.9%	0.0209	0.0168	98.9%	0.0188	0.0184	0.0176
3	15:28:13	100.3%	0.0153	0.0189	99.4%	0.0120	0.0186	0.0143
x		99.4%	0.0169	0.0167	98.3%	0.0138	0.0143	0.0132
σ		1.2%	0.0035	0.0023	1.6%	0.0044	0.0073	0.0049
%RSD		1.2	20.8043	13.7617	1.6	31.5971	50.7832	37.3659

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	108.7%	0.0062	101.8%	-0.0018	0.0258	0.0109	0.0142	0.0230
2	15:31:19	104.4%	0.0116	100.9%	0.0060	-0.0072	0.0088	0.0117	0.0279
3	15:31:55	106.1%	0.0085	99.1%	0.0018	0.0171	0.0096	0.0093	0.0070
x		106.4%	0.0088	100.6%	0.0020	0.0119	0.0097	0.0118	0.0193
σ		2.1%	0.0027	1.3%	0.0039	0.0171	0.0010	0.0025	0.0109
%RSD		2.0	30.4824	1.3	193.1700	143.8878	10.7334	21.0180	56.5385

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	-0.0341	0.0007	100.4%	0.0466	0.0673	-0.0750	0.2006	100.2%
2	15:31:19	0.0014	0.0083	100.5%	-0.0643	0.1050	-0.1601	-0.1603	100.8%
3	15:31:55	-0.0162	0.0263	100.6%	0.0363	0.1040	0.0262	0.1709	101.2%
x		-0.0163	0.0118	100.5%	0.0062	0.0921	-0.0696	0.0704	100.7%
σ		0.0178	0.0132	0.1%	0.0613	0.0215	0.0932	0.2003	0.5%
%RSD		108.9689	111.8443	0.1	989.8106	23.3586	133.9037	284.5408	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	99.2%	0.0078	0.0030	97.2%	0.0090	0.0074	0.0076
2	15:31:19	99.9%	0.0071	-0.0004	99.3%	0.0100	0.0069	0.0079
3	15:31:55	100.1%	0.0048	0.0063	99.6%	0.0073	0.0109	0.0072
x		99.7%	0.0066	0.0030	98.7%	0.0088	0.0084	0.0076
σ		0.5%	0.0016	0.0033	1.3%	0.0014	0.0022	0.0004
%RSD		0.5	23.7421	111.7805	1.3	15.6539	26.0911	4.6858

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	103.0%	-0.0000	98.5%	-0.0214	0.0028	0.0304	0.0402	1.6206
2	15:34:52	100.4%	0.0014	98.4%	-0.0143	-0.0077	0.0401	0.0297	1.5946
3	15:35:28	98.2%	0.0012	96.4%	-0.0139	-0.0282	0.0363	0.0664	1.5833
x		100.5%	0.0009	97.8%	-0.0166	-0.0110	0.0356	0.0454	1.5995
σ		2.4%	0.0008	1.2%	0.0042	0.0157	0.0049	0.0189	0.0191
%RSD		2.4	89.5441	1.2	25.3399	142.5530	13.7154	41.5484	1.1965

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	1.5201	1.4835	97.6%	0.0298	1.7316	0.0148	0.1282	97.4%
2	15:34:52	1.7741	1.5529	97.7%	0.0474	1.5537	-0.5381	-0.0070	98.5%
3	15:35:28	1.6583	1.5407	97.3%	0.0058	1.8377	0.0001	0.0800	98.6%
x		1.6508	1.5257	97.5%	0.0276	1.7077	-0.1744	0.0670	98.2%
σ		0.1272	0.0370	0.2%	0.0208	0.1435	0.3151	0.0685	0.7%
%RSD		7.7034	2.4270	0.2	75.3796	8.4019	180.6745	102.2155	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	96.7%	0.0006	-0.0010	96.6%	0.0045	0.0041	0.0037
2	15:34:52	97.8%	0.0024	0.0036	98.4%	0.0045	0.0031	0.0039
3	15:35:28	98.5%	-0.0035	0.0015	99.2%	0.0056	0.0061	0.0048
x		97.7%	-0.0002	0.0013	98.0%	0.0048	0.0045	0.0041
σ		0.9%	0.0030	0.0023	1.3%	0.0006	0.0015	0.0006
%RSD		1.0	1708.4396	172.3995	1.4	12.8052	34.3843	14.4127

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	106.2%	2.4815	99.0%	24.8782	24.9328	12.3757	12.6020	25.2201
2	15:38:24	102.7%	2.4700	98.0%	25.1597	24.6731	12.4229	12.5285	24.9248
3	15:39:01	100.4%	2.5132	95.8%	24.9560	25.0916	12.3734	12.5413	24.8817
x		103.1%	2.4883	97.6%	24.9979	24.8992	12.3907	12.5573	25.0089
σ		2.9%	0.0224	1.7%	0.1454	0.2113	0.0279	0.0393	0.1842
%RSD		2.8	0.8986	1.7	0.5816	0.8485	0.2255	0.3127	0.7366

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	28.5358	27.7279	96.9%	50.0927	51.7695	49.7783	49.6564	98.6%
2	15:38:24	28.6691	27.0726	99.0%	50.2693	50.7710	49.6180	49.7230	99.4%
3	15:39:01	28.4961	27.1119	98.3%	49.8056	49.9465	48.5312	48.2904	99.4%
x		28.5670	27.3042	98.0%	50.0559	50.8290	49.3092	49.2233	99.1%
σ		0.0906	0.3675	1.1%	0.2341	0.9129	0.6785	0.8086	0.5%
%RSD		0.3172	1.3459	1.1	0.4676	1.7960	1.3760	1.6427	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	97.8%	50.6951	50.3160	97.8%	49.3112	50.7057	49.9530
2	15:38:24	99.6%	49.9623	49.9085	99.5%	49.1451	51.1618	50.2489
3	15:39:01	99.0%	50.5094	50.1641	99.8%	49.1562	50.7982	50.0637
x		98.8%	50.3889	50.1295	99.0%	49.2042	50.8886	50.0885
σ		0.9%	0.3810	0.2059	1.1%	0.0929	0.2411	0.1495
%RSD		0.9	0.7560	0.4108	1.1	0.1888	0.4738	0.2985

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	103.7%	2.5332	99.5%	25.0041	24.8065	12.4984	12.5503	24.7139
2	15:44:04	105.5%	2.4331	98.9%	25.3712	24.8044	12.5344	12.5670	24.9566
3	15:44:41	99.0%	2.5841	98.2%	24.2516	25.0867	12.6905	12.8397	24.8597
x		102.7%	2.5168	98.9%	24.8756	24.8992	12.5744	12.6523	24.8434
σ		3.4%	0.0769	0.7%	0.5708	0.1624	0.1021	0.1625	0.1221
%RSD		3.3	3.0538	0.7	2.2944	0.6523	0.8122	1.2842	0.4917

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	28.9598	27.6713	97.8%	49.6937	50.7125	47.7390	49.6992	98.0%
2	15:44:04	29.4333	27.8009	97.6%	50.2713	50.4056	49.0552	49.6964	98.3%
3	15:44:41	28.5876	27.1096	97.8%	49.6636	49.6851	49.1311	49.2629	99.6%
x		28.9936	27.5273	97.8%	49.8762	50.2677	48.6418	49.5528	98.6%
σ		0.4239	0.3675	0.1%	0.3425	0.5274	0.7828	0.2511	0.9%
%RSD		1.4621	1.3350	0.1	0.6867	1.0491	1.6092	0.5067	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	97.2%	50.3360	49.8830	95.7%	48.6040	50.0634	49.4156
2	15:44:04	97.8%	50.5638	49.9847	98.1%	48.3624	49.6911	49.2465
3	15:44:41	99.0%	50.1785	49.3890	98.5%	48.6843	50.3444	49.6146
x		98.0%	50.3594	49.7522	97.4%	48.5502	50.0330	49.4256
σ		0.9%	0.1937	0.3187	1.5%	0.1675	0.3277	0.1843
%RSD		0.9	0.3847	0.6405	1.6	0.3451	0.6549	0.3728

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	100.2%	0.0031	96.4%	0.0898	0.0723	0.1194	0.1227	0.5078
2	15:50:20	101.3%	0.0001	95.7%	0.0546	0.0812	0.1367	0.1254	0.4501
3	15:50:57	102.7%	-0.0008	95.7%	0.0608	0.0575	0.1281	0.1369	0.4489
x		101.4%	0.0008	95.9%	0.0684	0.0704	0.1281	0.1283	0.4689
σ		1.3%	0.0021	0.4%	0.0188	0.0120	0.0087	0.0076	0.0337
%RSD		1.2	253.6509	0.4	27.4689	17.0282	6.7621	5.8887	7.1884

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	0.5364	0.4670	96.5%	0.0726	1.6492	-0.4006	0.1902	96.2%
2	15:50:20	0.4899	0.4238	97.2%	-0.0654	1.8829	-0.1967	-0.1544	97.6%
3	15:50:57	0.4212	0.4675	97.5%	-0.0231	1.7430	-0.2282	-0.1248	98.4%
x		0.4825	0.4528	97.0%	-0.0053	1.7584	-0.2752	-0.0297	97.4%
σ		0.0579	0.0251	0.5%	0.0707	0.1176	0.1098	0.1910	1.1%
%RSD		12.0035	5.5394	0.5	1336.5650	6.6874	39.8850	643.5585	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	95.9%	0.0172	0.0078	94.6%	0.0168	0.0171	0.0164
2	15:50:20	96.6%	0.0215	0.0167	97.2%	0.0247	0.0282	0.0257
3	15:50:57	96.5%	0.0169	0.0125	97.5%	0.0274	0.0211	0.0229
x		96.3%	0.0185	0.0123	96.4%	0.0230	0.0221	0.0217
σ		0.4%	0.0025	0.0045	1.6%	0.0055	0.0056	0.0048
%RSD		0.4	13.6978	36.3160	1.6	23.8465	25.4513	21.9716

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	100.6%	0.0010	98.5%	-0.0184	-0.0095	0.0236	0.0311	0.0865
2	15:53:58	101.0%	-0.0011	98.1%	-0.0127	0.0074	0.0214	0.0122	0.0793
3	15:54:35	101.7%	-0.0004	99.1%	-0.0108	0.0144	0.0249	0.0091	0.0682
x		101.1%	-0.0002	98.6%	-0.0140	0.0041	0.0233	0.0175	0.0780
σ		0.6%	0.0011	0.5%	0.0040	0.0123	0.0017	0.0119	0.0092
%RSD		0.6	621.5486	0.5	28.4476	298.2166	7.5038	68.0863	11.8513

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	0.0574	0.0932	94.6%	0.0491	0.3340	-0.0369	0.1420	97.4%
2	15:53:58	0.0230	0.0632	97.4%	0.1128	0.3019	0.3517	0.3516	99.8%
3	15:54:35	0.0815	0.0817	98.8%	-0.0179	0.3469	-0.0938	-0.1719	99.4%
x		0.0540	0.0794	96.9%	0.0480	0.3276	0.0736	0.1072	98.8%
σ		0.0294	0.0151	2.1%	0.0654	0.0232	0.2424	0.2635	1.3%
%RSD		54.4248	19.0549	2.2	136.2832	7.0768	329.1971	245.7661	1.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	96.7%	-0.0080	-0.0089	96.1%	0.0036	0.0062	0.0042
2	15:53:58	98.7%	-0.0060	-0.0063	98.5%	0.0070	0.0072	0.0060
3	15:54:35	99.0%	-0.0026	-0.0082	98.6%	0.0058	0.0085	0.0068
x		98.1%	-0.0056	-0.0078	97.8%	0.0055	0.0073	0.0057
σ		1.3%	0.0027	0.0014	1.4%	0.0017	0.0011	0.0013
%RSD		1.3	49.4488	17.6897	1.5	31.6713	15.6197	23.6181

K1608325-014A 8/3/2016 3:56:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	107.3%	20.8468	97.7%	21.7826	22.2098	22.1827	22.2289	21.7910
2	15:57:31	102.7%	21.8622	97.3%	21.7803	21.7440	21.8801	22.1210	22.3306
3	15:58:08	104.6%	21.4130	97.3%	22.0259	22.0099	22.4107	21.9345	22.3823
x		104.9%	21.3740	97.5%	21.8629	21.9879	22.1578	22.0948	22.1680
σ		2.3%	0.5088	0.2%	0.1412	0.2336	0.2661	0.1489	0.3275
%RSD		2.2	2.3806	0.2	0.6457	1.0626	1.2011	0.6740	1.4772

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	21.4202	21.8789	98.1%	21.6554	23.0374	21.1609	21.5495	97.7%
2	15:57:31	22.4016	22.0767	98.4%	22.0880	22.2971	21.3282	21.6736	97.2%
3	15:58:08	22.3866	21.9625	98.2%	21.9778	22.2335	21.4875	21.6853	98.3%
x		22.0695	21.9727	98.2%	21.9070	22.5227	21.3255	21.6361	97.8%
σ		0.5623	0.0993	0.1%	0.2248	0.4469	0.1633	0.0752	0.6%
%RSD		2.5481	0.4519	0.1	1.0263	1.9843	0.7659	0.3478	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	97.2%	21.8650	21.6409	96.4%	21.6222	21.5079	21.6232
2	15:57:31	98.6%	22.0165	21.6764	98.2%	21.7017	21.5448	21.6748
3	15:58:08	99.3%	21.7283	21.7217	99.1%	21.6012	21.6257	21.6991
x		98.4%	21.8700	21.6797	97.9%	21.6417	21.5595	21.6657
σ		1.1%	0.1442	0.0405	1.4%	0.0530	0.0602	0.0388
%RSD		1.1	0.6592	0.1867	1.4	0.2451	0.2794	0.1791

K1608344-013 8/3/2016 4:00:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	108.5%	-0.0007	99.0%	0.0387	0.0378	0.1323	0.1544	1.0409
2	16:01:28	103.7%	0.0122	95.9%	0.0410	0.0463	0.1470	0.1291	1.0761
3	16:02:04	101.3%	0.0113	98.1%	0.0398	0.0622	0.1485	0.1551	1.0481
x		104.5%	0.0076	97.7%	0.0398	0.0488	0.1426	0.1462	1.0550
σ		3.7%	0.0072	1.6%	0.0012	0.0124	0.0090	0.0148	0.0186
%RSD		3.5	95.1604	1.6	2.9163	25.4485	6.2800	10.1232	1.7604

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	1.1043	0.9774	97.7%	0.0758	1.7817	-0.4598	0.0700	97.7%
2	16:01:28	0.8953	0.9381	95.7%	-0.0495	2.1015	-0.0503	0.0216	97.2%
3	16:02:04	1.0311	0.9898	97.9%	-0.0586	1.9633	0.0138	-0.0574	97.6%
x		1.0103	0.9684	97.1%	-0.0107	1.9488	-0.1655	0.0114	97.5%
σ		0.1061	0.0270	1.2%	0.0751	0.1604	0.2570	0.0643	0.2%
%RSD		10.4978	2.7850	1.2	698.8406	8.2292	155.3050	564.9467	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	96.3%	0.0045	0.0040	95.9%	0.0309	0.0347	0.0290
2	16:01:28	96.9%	0.0079	0.0041	97.5%	0.0348	0.0361	0.0358
3	16:02:04	98.2%	0.0066	0.0142	98.4%	0.0363	0.0383	0.0387
x		97.1%	0.0063	0.0074	97.3%	0.0340	0.0364	0.0345
σ		1.0%	0.0017	0.0059	1.2%	0.0028	0.0018	0.0050
%RSD		1.0	26.8441	78.5456	1.3	8.2579	5.0458	14.5020

CCV5 8/3/2016 4:04:33 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	105.8%	24.7363	98.2%	25.7545	25.5584	25.1315	25.2519	25.7840
2	16:05:10	102.3%	24.6868	99.0%	25.4905	25.1486	24.7635	25.2669	25.5505
3	16:05:46	100.3%	24.6146	99.6%	25.2665	24.8390	24.8028	25.0468	25.1354
x		102.8%	24.6792	98.9%	25.5038	25.1820	24.8993	25.1885	25.4900
σ		2.8%	0.0612	0.7%	0.2443	0.3609	0.2021	0.1230	0.3285
%RSD		2.7	0.2479	0.7	0.9578	1.4330	0.8115	0.4883	1.2888

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	26.1223	25.3570	97.8%	25.1775	25.0620	25.8392	24.6146	98.6%
2	16:05:10	25.5515	25.3126	99.9%	25.3752	24.5947	24.9429	25.3141	99.0%
3	16:05:46	24.7302	24.7583	99.7%	24.9276	24.8762	25.1789	25.6995	99.5%
x		25.4680	25.1427	99.1%	25.1601	24.8443	25.3204	25.2094	99.0%
σ		0.6998	0.3336	1.2%	0.2243	0.2353	0.4646	0.5500	0.4%
%RSD		2.7478	1.3267	1.2	0.8915	0.9471	1.8347	2.1816	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	97.5%	24.8641	24.8259	98.2%	25.0333	24.8530	25.0661
2	16:05:10	99.8%	24.8740	24.6630	100.0%	25.1072	25.0653	25.1607
3	16:05:46	100.0%	24.8833	24.7352	100.2%	25.1722	25.2481	25.1943
x		99.1%	24.8738	24.7414	99.5%	25.1043	25.0555	25.1404
σ		1.4%	0.0096	0.0816	1.1%	0.0695	0.1977	0.0665
%RSD		1.4	0.0386	0.3300	1.1	0.2768	0.7892	0.2646

CCB5 8/3/2016 4:13:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	110.7%	0.0026	101.7%	-0.0038	0.0442	0.0095	0.0100	0.0267
2	16:14:10	105.0%	0.0031	101.3%	0.0035	0.0326	0.0055	0.0025	0.0219
3	16:14:47	102.8%	0.0024	101.5%	0.0003	0.0239	0.0168	0.0140	0.0041
x		106.1%	0.0027	101.5%	-0.0000	0.0335	0.0106	0.0088	0.0176
σ		4.1%	0.0003	0.2%	0.0037	0.0102	0.0057	0.0058	0.0119
%RSD		3.8	12.0980	0.2	26642.8290	30.3808	54.0039	65.7423	67.6377

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	-0.0158	0.0219	99.6%	-0.0428	0.1741	-0.1056	-0.0371	99.3%
2	16:14:10	0.0390	0.0192	98.7%	0.0639	-0.0051	0.3906	0.1930	100.1%
3	16:14:47	-0.0229	0.0164	101.3%	0.0114	0.1907	-0.1284	0.1882	101.5%
x		0.0001	0.0192	99.9%	0.0108	0.1199	0.0522	0.1147	100.3%
σ		0.0339	0.0028	1.3%	0.0533	0.1086	0.2933	0.1315	1.1%
%RSD		28273.6860	14.4764	1.3	492.8990	90.5581	561.7553	114.6503	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	98.7%	0.0088	0.0135	95.3%	0.0078	0.0097	0.0061
2	16:14:10	99.5%	0.0115	0.0113	97.6%	0.0055	0.0058	0.0055
3	16:14:47	99.9%	0.0133	0.0128	97.7%	0.0071	0.0094	0.0069
x		99.3%	0.0112	0.0125	96.9%	0.0068	0.0083	0.0062
σ		0.6%	0.0023	0.0011	1.3%	0.0012	0.0022	0.0007
%RSD		0.6	20.4867	9.1484	1.4	17.5686	26.3555	11.5269

LLCCVW2 8/3/2016 4:17:12 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	111.8%	0.0229	102.0%	0.1743	0.1905	0.1063	0.1049	0.4778
2	16:17:49	104.0%	0.0222	100.0%	0.1824	0.2020	0.1002	0.0967	0.4777
3	16:18:26	106.4%	0.0231	101.5%	0.1656	0.1986	0.1063	0.1163	0.4734
x		107.4%	0.0227	101.1%	0.1741	0.1970	0.1043	0.1060	0.4763
σ		4.0%	0.0005	1.0%	0.0084	0.0059	0.0035	0.0098	0.0025
%RSD		3.7	2.1680	1.0	4.8449	3.0015	3.3565	9.2836	0.5279
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	0.4323	0.4966	100.5%	0.4621	1.1062	0.9738	0.8781	100.4%
2	16:17:49	0.4907	0.4686	101.0%	0.5552	1.0625	0.7480	1.1965	100.3%
3	16:18:26	0.3776	0.4669	102.4%	0.4937	1.0171	1.0332	0.9922	101.9%
x		0.4335	0.4774	101.3%	0.5037	1.0619	0.9183	1.0223	100.9%
σ		0.0565	0.0167	1.0%	0.0473	0.0446	0.1505	0.1614	0.9%
%RSD		13.0374	3.4921	1.0	9.3968	4.1963	16.3868	15.7840	0.9
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	16:17:12	99.4%	0.0477	0.0534	96.8%	0.0223	0.0267	0.0221	
2	16:17:49	100.9%	0.0599	0.0576	99.1%	0.0259	0.0250	0.0260	
3	16:18:26	100.5%	0.0517	0.0613	99.4%	0.0209	0.0259	0.0229	
x		100.3%	0.0531	0.0574	98.4%	0.0231	0.0259	0.0237	
σ		0.8%	0.0062	0.0039	1.4%	0.0026	0.0009	0.0020	
%RSD		0.8	11.6343	6.8667	1.4	11.1832	3.3896	8.5979	

Service Request # K1608325 (Redigest Zn)_____
Calibration _____080516AMS03_____
QC in calibration__080516AMS03_____
QC Service Request # K1608011_____
STARLIMS run # 508566_____
Cal Std: MS20-75F ICSA Std: MS20-68H
ICV Std: MS20-75G ICSAB Std: MS20-68I
LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD 5.0 limit?	X		
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb.

Primary Review by _____ Date 8/5/16
Secondary Review by _____ Date 8/5/16

R:\icp\misc\data review forms\6020 DoD Review Checklist

Data Review Form

Service Request #:	**K1608325**
Instrument ID#:	**K-ICP-MS-03**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080516AMS03.csv**
RUNNO:	**508566**

There are no issues to report.

Primary Approver: _____ 8/5/16

Secondary Approver: _____ 8/5/16

Sample List

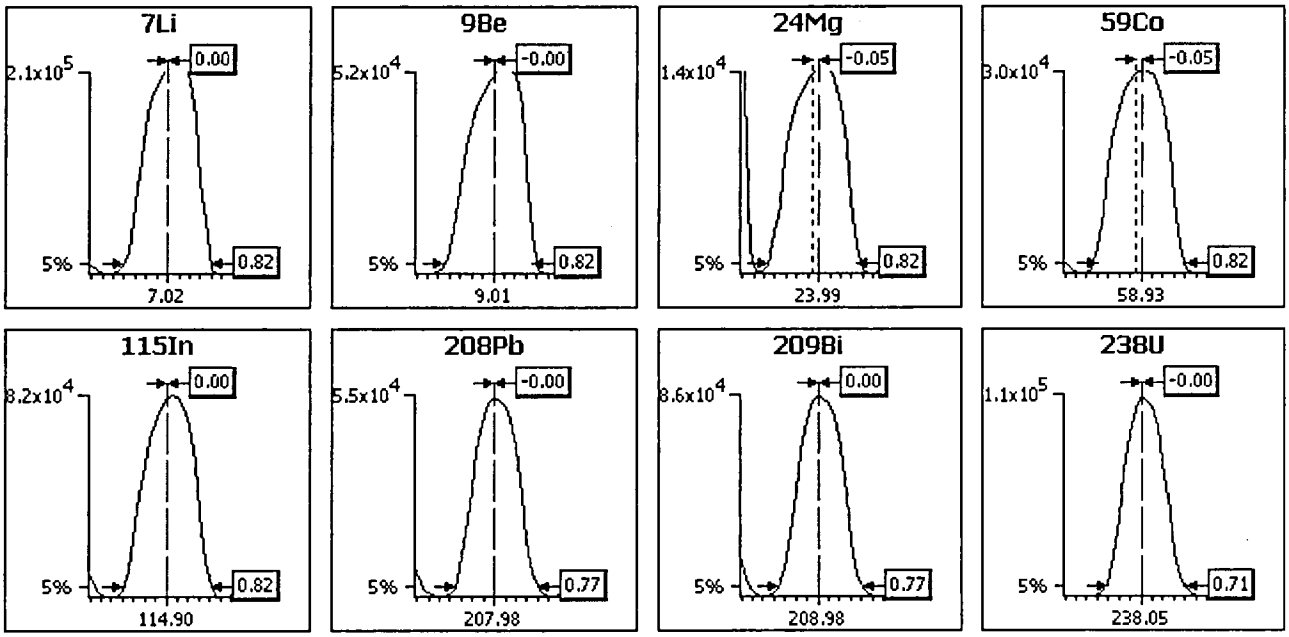
No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal. Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	CCB1	Unknown	1.000	0	1	1	145
7	LLICVW	Unknown	1.000	0	1	4	145
8	LRSTD	Unknown	1.000	1	1	1	145
9	ICSA	Unknown	1.000	0	1	5	145
10	ICSAB	Unknown	1.000	0	1	6	145
11	KQ1609201-01	Unknown	1.000	1	1	2	145
12	KQ1609201-02	Unknown	1.000	1	1	3	145
13	KQ1609201-03	Unknown	1.000	1	1	4	145
14	K1608011-007	Unknown	1.000	1	1	5	145
15	K1608011-007L	Unknown	1.000	1	1	6	145
16	K1608011-007A	Unknown	1.000	1	1	7	145
17	CCV2	Unknown	1.000	0	1	2	145
18	CCB2	Unknown	1.000	0	1	1	145
19	K1608207-015	Unknown	1.000	1	1	8	145
20	K1608209-015	Unknown	1.000	1	1	9	145
21	K1608210-015	Unknown	1.000	1	1	10	145
22	K1608325-014	Unknown	1.000	1	1	11	145
23	K1608344-013	Unknown	1.000	1	1	12	145
24	CCV3	Unknown	1.000	0	1	2	145
25	CCB3	Unknown	1.000	0	1	1	145
26	LLCCVW	Unknown	1.000	0	1	4	145

Performance Report

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.82	0.00
9Be	0.90	0.60	0.10	0.82	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.82	-0.05
115In	0.90	0.60	0.10	0.82	0.00
208Pb	0.90	0.60	0.10	0.77	-0.00
209Bi	0.90	0.60	0.10	0.77	0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	4.7
Focus	23.3
D1	-36.1
Pole Bias	0.3
Hexapole Bias	0.5
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-18.8
Lens 3	-200.0
Forward power	1357
Horizontal	150
Vertical	376
D2	-155
DA	-32.2
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	5:30:15 AM	0.250	219395.58	53374.477	14441.211	31635.198	85381.324	92278.225	1774.173	56833.348
2	5:31:28 AM	0.000	216799.65	52320.376	14251.662	31323.371	86029.139	93384.435	1717.412	57698.774
3	5:32:41 AM	0.000	212527.02	51402.663	14162.774	30968.157	85969.579	93441.517	1725.164	58051.257
4	5:33:53 AM	0.000	213919.62	51531.137	14088.158	31135.226	85938.285	93292.751	1749.168	58103.338
5	5:35:06 AM	0.000	216540.33	51523.343	13862.561	30871.830	85756.582	93084.886	1729.665	58561.766
x		0.050	215836.44	52030.400	14161.273	31186.756	85814.982	93096.363	1739.116	57849.697
σ		0.11	2679.42	835.32	212.79	303.88	262.89	477.01	22.83	645.71
%RSD		223.607	1.241	1.605	1.503	0.974	0.306	0.512	1.313	1.116

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	5:30:15 AM	88868.506	0.000	111865.05
2	5:31:28 AM	89567.314	0.000	113541.39
3	5:32:41 AM	90686.578	0.000	114116.27
4	5:33:53 AM	90799.699	0.000	114493.72
5	5:35:06 AM	90896.408	0.000	115034.49
x		90163.701	0.000	113810.18
σ		901.11	0.00	1216.10
%RSD		0.999	0.000	1.069

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	5:30:15 AM	0.019
2	5:31:28 AM	0.018
3	5:32:41 AM	0.018
4	5:33:53 AM	0.019
5	5:35:06 AM	0.019
x		0.0187
σ		0.00
%RSD		1.7832

Result : The performance report passed.

Dilution Corrected Concentrations

Cal. Blk 8/5/2016 5:39:58 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:39:58	-0.0118	0.0254	-0.0079	101.3%
2	05:40:09	0.0042	-0.0069	0.0063	100.9%
3	05:40:20	0.0075	-0.0185	0.0016	97.8%
x		-0.0000	-0.0000	0.0000	100.0%
σ		0.0103	0.0227	0.0073	1.9%
%RSD		0.0000	0.0000	0.0000	1.9

Cal. Stn 8/5/2016 5:42:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:42:12	25.0514	25.1194	24.6140	101.9%
2	05:42:22	25.2973	24.9918	25.3554	101.4%
3	05:42:33	24.6514	24.8888	25.0306	101.5%
x		25.0000	25.0000	25.0000	101.6%
σ		0.3260	0.1155	0.3717	0.3%
%RSD		1.3040	0.4619	1.4866	0.2

ICV1 8/5/2016 5:44:25 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:44:25	25.6702	29.6890	28.0159	100.5%
2	05:44:36	25.8448	29.9538	28.2114	100.4%
3	05:44:46	24.8765	28.5581	27.7659	101.1%
x		25.4638	29.4003	27.9977	100.7%
σ		0.5161	0.7412	0.2233	0.4%
%RSD		2.0267	2.5212	0.7976	0.4

CCV1 8/5/2016 5:46:39 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:46:39	25.3786	25.3760	25.4165	101.3%
2	05:46:50	25.0295	25.0916	24.9740	100.3%
3	05:47:00	25.2207	25.0019	24.5342	101.7%
x		25.2096	25.1565	24.9749	101.1%
σ		0.1748	0.1953	0.4411	0.7%
%RSD		0.6934	0.7763	1.7663	0.7

ICB1 8/5/2016 5:48:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:48:52	0.0726	0.0641	0.0891	101.6%
2	05:49:03	0.0731	0.1062	0.0653	99.7%
3	05:49:14	0.0719	0.0523	0.0796	100.5%
x		0.0725	0.0742	0.0780	100.6%
σ		0.0006	0.0283	0.0120	1.0%
%RSD		0.8264	38.1977	15.3424	1.0

CCB1 8/5/2016 5:57:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:57:26	-0.0388	-0.0200	-0.0370	101.0%
2	05:57:36	-0.0361	-0.0190	-0.0263	98.8%
3	05:57:47	-0.0478	0.0079	-0.0433	98.5%
x		-0.0409	-0.0104	-0.0355	99.4%
σ		0.0061	0.0158	0.0086	1.3%
%RSD		14.9863	152.7485	24.2370	1.3

LLICVW 8/5/2016 5:59:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:59:40	0.4505	0.4323	0.4425	99.2%
2	05:59:50	0.4367	0.4668	0.4864	97.7%
3	06:00:01	0.4301	0.3869	0.5136	97.5%
x		0.4391	0.4287	0.4808	98.2%
σ		0.0104	0.0401	0.0359	0.9%
%RSD		2.3645	9.3553	7.4625	0.9

LRSTD 8/5/2016 6:01:54 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:01:54	206.0177	206.6226	202.9570	98.5%
2	06:02:05	204.4385	201.2339	200.8658	99.6%
3	06:02:16	202.8644	204.3904	203.1290	99.2%
x		204.4402	204.0823	202.3173	99.1%
σ		1.5766	2.7075	1.2599	0.5%
%RSD		0.7712	1.3267	0.6228	0.5

ICSA 8/5/2016 6:05:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:05:52	2.0193	5.1031	1.7801	93.1%
2	06:06:03	2.0224	5.0883	1.7642	93.3%
3	06:06:14	2.0764	4.7413	1.8605	93.3%
x		2.0394	4.9776	1.8016	93.2%
σ		0.0321	0.2048	0.0516	0.2%
%RSD		1.5751	4.1136	2.8656	0.2

ICSAB 8/5/2016 6:08:08 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:08:08	26.6336	28.2492	24.3451	91.8%
2	06:08:19	26.4267	28.1931	24.7238	93.0%
3	06:08:29	26.2232	28.9694	24.6132	93.1%
x		26.4278	28.4705	24.5607	92.6%
σ		0.2052	0.4329	0.1947	0.7%
%RSD		0.7765	1.5205	0.7928	0.8

KQ1609201-01 8/5/2016 6:10:22 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:10:22	-0.0214	-0.0032	-0.0109	94.9%
2	06:10:32	-0.0145	0.0598	-0.0137	94.6%
3	06:10:43	-0.0069	0.0617	-0.0219	93.1%
x		-0.0143	0.0394	-0.0155	94.2%
σ		0.0073	0.0369	0.0057	1.0%
%RSD		50.9433	93.6065	36.6097	1.0

KQ1609201-02 8/5/2016 6:12:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:12:34	24.0525	27.2375	26.8497	95.6%
2	06:12:45	23.8612	28.1148	26.3448	94.9%
3	06:12:55	23.7234	27.8112	26.8798	94.1%
x		23.8790	27.7212	26.6914	94.9%
σ		0.1653	0.4456	0.3006	0.7%
%RSD		0.6923	1.6073	1.1260	0.8

KQ1609201-03 8/5/2016 6:14:46 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:14:46	24.0373	28.3844	27.0564	95.8%
2	06:14:57	24.2141	27.4928	26.8380	96.2%
3	06:15:08	24.8982	28.6710	26.4043	94.0%
x		24.3832	28.1827	26.7663	95.4%
σ		0.4547	0.6145	0.3319	1.2%
%RSD		1.8647	2.1803	1.2401	1.2

K1608011-007 8/5/2016 6:16:59 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:16:59	0.2927	0.3545	0.2731	95.7%
2	06:17:10	0.3067	0.3661	0.2769	94.6%
3	06:17:21	0.2960	0.3294	0.3064	95.1%
x		0.2985	0.3500	0.2855	95.1%
σ		0.0074	0.0188	0.0182	0.5%
%RSD		2.4652	5.3692	6.3785	0.6

K1608011-007L 8/5/2016 6:19:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:19:12	0.3974	0.3297	0.3730	96.7%
2	06:19:23	0.4467	0.4764	0.4205	94.8%
3	06:19:34	0.4724	0.4728	0.4131	94.2%
x		0.4388	0.4263	0.4022	95.2%
σ		0.0381	0.0837	0.0255	1.3%
%RSD		8.6846	19.6320	6.3415	1.3

K1608011-007A 8/5/2016 6:21:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:21:26	22.7930	23.0239	22.6704	95.8%
2	06:21:37	22.3784	22.8072	22.2122	94.6%
3	06:21:48	22.2870	22.4722	21.8112	95.7%
x		22.4861	22.7678	22.2313	95.4%
σ		0.2696	0.2780	0.4299	0.7%
%RSD		1.1991	1.2208	1.9339	0.7

CCV2 8/5/2016 6:23:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:23:40	24.5378	25.0376	24.9515	96.2%
2	06:23:51	24.7700	25.0390	24.9692	95.0%
3	06:24:02	25.0346	25.3246	24.7635	95.1%
x		24.7808	25.1337	24.8947	95.4%
σ		0.2486	0.1653	0.1140	0.6%
%RSD		1.0032	0.6576	0.4580	0.7

CCB2 8/5/2016 6:25:53 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:25:53	-0.0169	0.0107	-0.0213	94.9%
2	06:26:04	-0.0268	-0.0249	-0.0298	97.1%
3	06:26:15	-0.0110	-0.0167	0.0014	94.3%
x		-0.0182	-0.0103	-0.0166	95.4%
σ		0.0080	0.0187	0.0161	1.5%
%RSD		43.7226	180.9580	97.4558	1.5

K1608207-015 8/5/2016 6:28:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:28:06	0.3308	0.3330	0.2859	94.2%
2	06:28:17	0.2970	0.3973	0.3275	93.9%
3	06:28:28	0.3259	0.3241	0.3013	93.0%
x		0.3179	0.3514	0.3049	93.7%
σ		0.0182	0.0399	0.0210	0.7%
%RSD		5.7386	11.3615	6.8975	0.7

K1608209-015 8/5/2016 6:30:20 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:30:20	0.4010	0.4068	0.4051	93.4%
2	06:30:31	0.3375	0.3609	0.3307	94.2%
3	06:30:42	0.3547	0.4690	0.3844	93.6%
x		0.3644	0.4122	0.3734	93.8%
σ		0.0328	0.0543	0.0384	0.4%
%RSD		9.0135	13.1705	10.2791	0.4

K1608210-015 8/5/2016 6:32:36 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:32:36	0.2816	0.2995	0.2888	93.8%
2	06:32:47	0.2743	0.3900	0.2807	94.0%
3	06:32:57	0.2887	0.3743	0.2547	92.8%
x		0.2815	0.3546	0.2748	93.6%
σ		0.0072	0.0484	0.0178	0.6%
%RSD		2.5706	13.6407	6.4898	0.7

K1608325-014 8/5/2016 6:34:51 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:34:51	0.4234	0.5461	0.4245	92.6%
2	06:35:02	0.3883	0.4967	0.3946	93.7%
3	06:35:13	0.4344	0.4484	0.3683	92.3%
x		0.4153	0.4971	0.3958	92.9%
σ		0.0241	0.0488	0.0281	0.8%
%RSD		5.8036	9.8213	7.1022	0.8

K1608344-013 8/5/2016 6:37:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:37:06	0.5489	0.4987	0.4725	94.6%
2	06:37:17	0.5154	0.5805	0.5625	93.8%
3	06:37:28	0.5511	0.5989	0.5334	93.2%
x		0.5385	0.5594	0.5228	93.9%
σ		0.0200	0.0533	0.0459	0.7%
%RSD		3.7174	9.5304	8.7855	0.7

CCV3 8/5/2016 6:39:21 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:39:21	25.2609	25.7288	24.8825	94.6%
2	06:39:32	24.4702	24.7630	24.3337	95.1%
3	06:39:43	24.5560	24.4272	23.9673	96.2%
x		24.7624	24.9730	24.3945	95.3%
σ		0.4339	0.6757	0.4606	0.8%
%RSD		1.7522	2.7057	1.8882	0.9

CCB3 8/5/2016 6:41:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:41:34	-0.0182	-0.0102	-0.0126	95.1%
2	06:41:45	-0.0234	0.0042	-0.0016	94.4%
3	06:41:56	-0.0090	-0.0239	-0.0079	94.8%
x		-0.0169	-0.0100	-0.0074	94.7%
σ		0.0073	0.0141	0.0055	0.4%
%RSD		43.0510	140.4253	74.6547	0.4

LLCCVW 8/5/2016 6:43:50 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:43:50	0.4768	0.3745	0.4139	95.8%
2	06:44:00	0.4794	0.4953	0.4537	96.3%
3	06:44:12	0.4501	0.4373	0.4428	95.6%
x		0.4687	0.4357	0.4368	95.9%
σ		0.0162	0.0604	0.0206	0.4%
%RSD		3.4595	13.8632	4.7129	0.4

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 26, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on September 12, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37049:

SDG #	**Fraction:**
K1608207 K160820, K1608210, K1608325, K1608344	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #37049 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	(4) Metals (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	K1608207	09/12/16	09/26/16	1	4																														
A	K1608207	09/12/16	09/26/16	0	5																														
B	K1608209	09/12/16	09/26/16	1	9																														
C	K1608210	09/12/16	09/26/16	1	9																														
D	K1608325	09/12/16	09/26/16	1	13																														
E	K1608344	09/12/16	09/26/16	1	9																														
Total	J/PG			5	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\37049ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDGs: K1608207, K1608209, K1608210, K1608325, K1608344

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 23, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the July 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilution, laboratory control sample (LCS), field duplicate samples, split samples, and internal standards. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, split samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the method were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the method blanks reviewed by ADR with the exception of copper, lead, and zinc. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608207/ 6020A	ICB/CCB	Antimony Lead	0.020 ug/L 0.008 ug/L	All water samples in SDG K1608207
K1608207/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816
K1608209/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FTBL-SS-B34-0-6-071916
K1608209/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608209
K1608210/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608210

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608325/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B03-0-6-072116 FD072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116
K1608325/ 6020A	ICB/CCB	Antimony Lead	0.013 ug/L 0.008 ug/L	All water samples in SDG K1608325
K1608344/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FD072016
K1608344/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	EB072016

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1608207/ 6020A	EB071816	Lead	0.038 ug/L	0.038U ug/L
K1608209/ 6020A	EB071916	Lead	0.018 ug/L	0.018U ug/L
K1608210/ 6020A	EB071516	Lead	0.019 ug/L	0.019U ug/L
K1608325/ 6020A	FD072116	Antimony	0.093 mg/Kg	0.093U mg/Kg
K1608325/ 6020A	EB072116	Antimony Lead	0.012 ug/L 0.022 ug/L	0.012U ug/L 0.022U ug/L
K1608344/ 6020A	FD072016	Antimony	0.152 mg/Kg	0.152U mg/Kg
K1608344/ 6020A	EB072016	Antimony Lead	0.007 ug/L 0.034 ug/L	0.007U ug/L 0.034U ug/L

VI. Field Blanks

Ten equipment blanks were collected and analyzed for metals. One equipment blank had detections for copper, lead, and zinc. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of four MS/MSD pairs for antimony and lead. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R or serial dilution %R were within QC limits. The details are provided in Enclosures I and II.

X. Duplicate Sample Analysis/Triplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) and triplicate (TRP) analyses specified for the samples in these SDGs, and therefore duplicate and triplicate analyses were not performed for these SDGs.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XIII. Field Duplicates

Five field duplicate pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of antimony, copper, and lead in three duplicate pairs. The associated sample results were qualified as detected estimated (J). The field duplicate result comparisons are provided in Enclosure I.

Four split sample pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of lead in one split sample pair. The associated sample results were qualified as detected estimated (J). No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The split sample comparisons are provided in Enclosures I and II.

XIV. Internal Standards

All internal standard areas percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to field duplicate RPD and results reported below the LOQ, data were qualified as estimated in eight samples.

Due to split sample RPD, data were qualified as estimated in two samples.

Due to method blank contamination, data were qualified as not detected in four samples.

Due to calibration blank contamination, data were qualified as not detected in seven samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2016	FD071516	K1608210-012	FD	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B27-0-6-071516	K1608210-003	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B28-0-6-071516	K1608210-004	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B29-0-6-071516	K1608210-005	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B30-0-6-071516	K1608210-006	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B39-0-6-071516	K1608210-010	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B40-0-6-071516	K1608210-011	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B41-0-6-071516	K1608210-014	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B42-0-6-071516	K1608210-013	N	EPA 3050B	6020A	III
15-Jul-2016	EB071516	K1608210-015	EB	CLFAA	6020A	III
15-Jul-2016	EB071516RE	K1608210-015RE	EB	CLFAA	6020A	III
18-Jul-2016	FD071816	K1608207-014	FD	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B60-0-6-071816	K1608207-006	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B59-0-6-071816	K1608207-005	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B58-0-6-071816	K1608207-004	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816	K1608207-003	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	MS	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MSD	K1608207-003SD	MSD	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B52-0-6-071816	K1608207-011	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B51-0-6-071816	K1608207-010	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B53-0-6-071816	K1608207-012	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B54-0-6-071816	K1608207-013	N	EPA 3050B	6020A	III
18-Jul-2016	EB071816	K1608207-015	EB	CLFAA	6020A	III
18-Jul-2016	EB071816RE	K1608207-015RE	EB	CLFAA	6020A	III
19-Jul-2016	FD071916	K1608209-014	FD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B33-0-6-071916	K1608209-004	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Jul-2016	FTBL-SS-B34-0-6-071916	K1608209-005	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B35-0-6-071916	K1608209-006	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B36-0-6-071916	K1608209-007	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916	K1608209-010	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	MS	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MSD	K1608209-010SD	MSD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B46-0-6-071916	K1608209-011	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B47-0-6-071916	K1608209-012	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B48-0-6-071916	K1608209-013	N	EPA 3050B	6020A	III
19-Jul-2016	EB071916	K1608209-015	EB	CLFAA	6020A	III
19-Jul-2016	EB071916RE	K1608209-015RE	EB	CLFAA	6020A	III
20-Jul-2016	FD072016	K1608344-012	FD	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B21-0-6-072016	K1608344-002	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B22-0-6-072016	K1608344-003	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B23-0-6-072016	K1608344-004	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B24-0-6-072016	K1608344-005	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B15-0-6-072016	K1608344-008	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B16-0-6-072016	K1608344-009	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B17-0-6-072016	K1608344-010	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016	K1608344-011	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	MS	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MSD	K1608344-011SD	MSD	EPA 3050B	6020A	III
20-Jul-2016	EB072016	K1608344-013	EB	CLFAA	6020A	III
20-Jul-2016	EB072016RE	K1608344-013RE	EB	CLFAA	6020A	III
21-Jul-2016	FD072116	K1608325-010	FD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B09-0-6-072116	K1608325-003	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-Jul-2016	FTBL-SS-B11-0-6-072116	K1608325-005	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B10-0-6-072116	K1608325-004	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B12-0-6-072116	K1608325-006	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B07-0-12-072116	K1608325-001	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B08-0-12-072116	K1608325-002	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116	K1608325-009	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	MS	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MSD	K1608325-009SD	MSD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116	K1608325-011	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116RE	K1608325-011RE	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B05-0-6-072116	K1608325-012	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B06-0-6-072116	K1608325-013	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B01-0-12-072116	K1608325-007	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B02-0-12-072116	K1608325-008	N	EPA 3050B	6020A	III
21-Jul-2016	EB072116	K1608325-014	EB	CLFAA	6020A	III
21-Jul-2016	EB072116RE	K1608325-014RE	EB	CLFAA	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608207

Method Category: METALS

Method: 6020A **Matrix:** Soil

Sample ID: FD071816 **Collected:** 7/18/2016 12:00:00 AM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.166	J	0.021	LOD	0.043	LOQ	mg/Kg	J	Fd
COPPER	9.95	=	0.043	LOD	0.085	LOQ	mg/Kg	J	Fd
LEAD	21.2	J	0.011	LOD	0.043	LOQ	mg/Kg	J	Fd

Sample ID: FTBL-SS-B54-0-6-071816 **Collected:** 7/18/2016 12:20:00 PM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	2.16	J	0.023	LOD	0.046	LOQ	mg/Kg	J	Fd
COPPER	40.1	=	0.046	LOD	0.091	LOQ	mg/Kg	J	Fd
LEAD	330	J	0.011	LOD	0.046	LOQ	mg/Kg	J	Fd

Method Category: METALS

Method: 6020A **Matrix:** Water

Sample ID: EB071816 **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Initial/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.038	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Sample ID: EB071816RE **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Reanalysis-1/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608209

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608209

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/19/2016 12:00:00

Sample ID: FD071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.957	J	0.019	LOD	0.038	LOQ	mg/Kg	J	Fd
LEAD	169	J	0.009	LOD	0.038	LOQ	mg/Kg	J	Fd

7/19/2016 11:25:00

Sample ID: FTBL-SS-B45-0-6-071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.543	J	0.018	LOD	0.036	LOQ	mg/Kg	J	Fd
LEAD	56.0	J	0.009	LOD	0.036	LOQ	mg/Kg	J	Fd, ProfJudg

Method Category: METALS

Method: 6020A **Matrix:** Water

7/19/2016 1:50:00

Sample ID: EB071916 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.018	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/19/2016 1:50:00

Sample ID: EB071916RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608210

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/15/2016 12:00:00

Sample ID: FD071516 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.353	J	0.020	LOD	0.041	LOQ	mg/Kg	J	Fd

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608210

Method Category: METALS **Method:** 6020A **Matrix:** Soil

7/15/2016 12:20:00

Sample ID: FTBL-SS-B42-0-6-071516 *Collected:* PM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.894	J	0.019	LOD	0.039	LOQ	mg/Kg	J	Fd

Method Category: METALS **Method:** 6020A **Matrix:** Water

7/15/2016 3:15:00

Sample ID: EB071516 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.019	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/15/2016 3:15:00

Sample ID: EB071516RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608325

Method Category: METALS **Method:** 6020A **Matrix:** Soil

7/21/2016 12:00:00

Sample ID: FD072116 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.093	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS **Method:** 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.012	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608325

Method Category: METALS

Method: 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.13	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.022	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

7/21/2016 1:50:00

Sample ID: EB072116RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608344

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/20/2016 12:00:00

Sample ID: FD072016 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.152	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A **Matrix:** Water

7/20/2016 1:50:00

Sample ID: EB072016 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.007	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
COPPER	0.15	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.034	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Fd	Field Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

K1608207

Method Blank Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071816 FTBL-SS-B51-0-6-071816 FTBL-SS-B52-0-6-071816 FTBL-SS-B53-0-6-071816 FTBL-SS-B54-0-6-071816 FTBL-SS-B57-0-6-071816 FTBL-SS-B58-0-6-071816 FTBL-SS-B59-0-6-071816 FTBL-SS-B60-0-6-071816

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071816

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B57-0-6-071816MS (Dry) FTBL-SS-B57-0-6-071816MSD (Dry) (FTBL-SS-B57-0-6-071816)	ANTIMONY LEAD	38 -	38 83	72.00-124.00 84.00-118.00	- -	ANTIMONY LEAD	No Qual, Sb, Post Spike = 102% Pb, Serial Dilution OK

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B54-0-6-071816 (Dry)	FD071816 (Dry)			
ZINC	67.3	110	48	50.00	No Qualifiers Applied
ANTIMONY	2.16	0.166	171	50.00	J(all detects)
COPPER	40.1	9.95	120	50.00	
LEAD	330	21.2	176	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071816RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049A4a
SDG #: K1608207
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR~~IV~~
SD

Date: 9/15/18
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. MSD = %Rec out; PB ok, %RPD ok, SER ok = NA
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	SER=(-)
X.	Laboratory control samples	N	Not reviewed for ADR validation.
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	FTBL-SS-B52-0-6-071816	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	EB071816	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 31049A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: 3D
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DUP-11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)
Soil preparation factor applied: 100X
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.020	0.1										
Pb			0.008	0.04	0.038									

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Quality Control
Outlier Reports

K1608209

Method Blank Outlier Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609300-03	8/24/2016 9:32:00 PM	LEAD	0.006 mg/Kg	FD071916 FTBL-SS-B33-0-6-071916 FTBL-SS-B34-0-6-071916 FTBL-SS-B35-0-6-071916 FTBL-SS-B36-0-6-071916 FTBL-SS-B45-0-6-071916 FTBL-SS-B46-0-6-071916 FTBL-SS-B47-0-6-071916 FTBL-SS-B48-0-6-071916

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071916

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071916(Initial/TOT)	LEAD	0.018 ug/L	0.018U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608209 Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	LEAD	123	134	84.00-118.00	-	LEAD	No Qual, Serial Dilution OK
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	ANTIMONY	42	41	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 98%

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B45-0-6-071916 (Dry)	FD071916 (Dry)			
COPPER	18.7	24.0	25	50.00	No Qualifiers Applied
ZINC	54.7	61.6	12	50.00	
ANTIMONY	0.543	0.957	55	50.00	J(all detects)
LEAD	56.0	169	100	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071916	COPPER LEAD	J J	0.07 0.018	0.10 0.020	LOQ LOQ	ug/L ug/L	J (all detects)
EB071916RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

LDC #: 37049B4a
SDG #: K1608209
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/8/16
Page: 1 of 1
Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD: Sb out; Ba ok; SER ok = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (5)
X.	Laboratory control samples	N	
XI.	~~Field~~ Split Duplicates	SW	SD = (5, FTBL-SS-B45-0-6-071916-QA) (SDG: FA355653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B33-0-6-071916	K1608209-004	Soil	07/19/16
2	FTBL-SS-B34-0-6-071916	K1608209-005	Soil	07/19/16
3	FTBL-SS-B35-0-6-071916	K1608209-006	Soil	07/19/16
4	FTBL-SS-B36-0-6-071916	K1608209-007	Soil	07/19/16
5	FTBL-SS-B45-0-6-071916	K1608209-010	Soil	07/19/16
6	FTBL-SS-B46-0-6-071916	K1608209-011	Soil	07/19/16
7	FTBL-SS-B47-0-6-071916	K1608209-012	Soil	07/19/16
8	FTBL-SS-B48-0-6-071916	K1608209-013	Soil	07/19/16
9	FD071916	K1608209-014	Soil	07/19/16
10	EB071916	K1608209-015	Water	07/19/16
11	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	Soil	07/19/16
12	FTBL-SS-B45-0-6-071916MSD	K1608209-010MSD	Soil	07/19/16
13				
14				
15				

LDC #: 37044A8A

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: OD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, (Co) (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC:11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Comments: Mercury by CVAA if performed

LDC #: 37049B4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 2

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.092	0.23										

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.018									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049B4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Page: 1 of
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	5	FTBL-SS-B45-0-6-071916-QA (SDG: FA35653)		
Antimony	0.543	2.1	118	NQ
Copper	18.7	17.3	8	
Lead	56.0	215	117	Jdet/A (det)
Zinc	54.7	48.1	13	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049B4a.wpd

Quality Control
Outlier Reports

K1608210

Method Blank Outlier Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071516 FTBL-SS-B27-0-6-071516 FTBL-SS-B28-0-6-071516 FTBL-SS-B29-0-6-071516 FTBL-SS-B30-0-6-071516 FTBL-SS-B39-0-6-071516 FTBL-SS-B40-0-6-071516 FTBL-SS-B41-0-6-071516 FTBL-SS-B42-0-6-071516

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071516

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071516(Initial/TOT)	LEAD	0.019 ug/L	0.019U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071516	COPPER LEAD	J J	0.07 0.019	0.10 0.020	LOQ LOQ	ug/L ug/L	J (all detects)
EB071516RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B42-0-6-071516 (Dry)	FD071516 (Dry)			
COPPER	24.1	23.3	3	50.00	No Qualifiers Applied
LEAD	122	110	10	50.00	
ZINC	68.8	76.6	11	50.00	
ANTIMONY	0.894	0.353	87	50.00	J(all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049C4a
SDG #: K1608210
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (B, FTBL-SS-B27-0-6-071516-DA) (SDG: FA35653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B27-0-6-071516	K1608210-003	Soil	07/15/16
2	FTBL-SS-B28-0-6-071516	K1608210-004	Soil	07/15/16
3	FTBL-SS-B29-0-6-071516	K1608210-005	Soil	07/15/16
4	FTBL-SS-B30-0-6-071516	K1608210-006	Soil	07/15/16
5	FTBL-SS-B39-0-6-071516	K1608210-010	Soil	07/15/16
6	FTBL-SS-B40-0-6-071516	K1608210-011	Soil	07/15/16
7	FD071516	K1608210-012	Soil	07/15/16
8	FTBL-SS-B42-0-6-071516	K1608210-013	Soil	07/15/16
9	FTBL-SS-B41-0-6-071516	K1608210-014	Soil	07/15/16
10	EB071516	K1608210-015	Water	07/15/16
11	FTBL-SS-B27-0-6-071516MS	K1608210-003MS	Soil	07/15/16
12	FTBL-SS-B27-0-6-071516MSD	K1608210-003MSD	Soil	07/15/16
13				
14				
15				

LDC #: 37046C4A

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049C4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.019									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049C4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: 3D
2nd Reviewer: 1

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y/N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B42-0-6-071516-QA (SDG: FA35653)		
Antimony	0.894	0.83U	7	
Copper	24.1	24.4	1	
Lead	122	102	18	
Zinc	68.8	61.8	11	

Quality Control
Outlier Reports

K1608325

Method Blank Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609275-03	8/24/2016 5:38:00 PM	COPPER LEAD ZINC	0.035 mg/Kg 0.038 mg/Kg 0.36 mg/Kg	FD072116 FTBL-SS-B01-0-12-072116 FTBL-SS-B02-0-12-072116 FTBL-SS-B03-0-6-072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B04-0-6-072116RE FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116 FTBL-SS-B07-0-12-072116 FTBL-SS-B08-0-12-072116 FTBL-SS-B09-0-6-072116 FTBL-SS-B10-0-6-072116 FTBL-SS-B11-0-6-072116 FTBL-SS-B12-0-6-072116

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072116

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072116(Initial/TOT)	COPPER	0.13 ug/L	0.13U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B03-0-6-072116MS (Dry) FTBL-SS-B03-0-6-072116MSD (Dry) (FTBL-SS-B03-0-6-072116)	ANTIMONY	50	50	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 101%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072116	ANTIMONY	J	0.012	0.050	LOQ	ug/L	J (all detects)
EB072116RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B03-0-6-072116 (Dry)	FD072116 (Dry)			
ANTIMONY	0.136	0.093	38	50.00	No Qualifiers Applied
COPPER	9.48	7.54	23	50.00	
LEAD	23.6	15.0	45	50.00	
ZINC	45.5	47.2	4	50.00	

LDC #: 37049D4a
SDG #: K1608325
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16

Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D = SB out; PS in = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (9)
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (9, FTBL-SS-B03-0-6-072116-2A)
XII.	Internal Standard (ICP-MS)	A	(SD6: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B07-0-12-072116	K1608325-001	Soil	07/21/16
2	FTBL-SS-B08-0-12-072116	K1608325-002	Soil	07/21/16
3	FTBL-SS-B09-0-6-072116	K1608325-003	Soil	07/21/16
4	FTBL-SS-B10-0-6-072116	K1608325-004	Soil	07/21/16
5	FTBL-SS-B11-0-6-072116	K1608325-005	Soil	07/21/16
6	FTBL-SS-B12-0-6-072116	K1608325-006	Soil	07/21/16
7	FTBL-SS-B01-0-12-072116	K1608325-007	Soil	07/21/16
8	FTBL-SS-B02-0-12-072116	K1608325-008	Soil	07/21/16
9	FTBL-SS-B03-0-6-072116	K1608325-009	Soil	07/21/16
10	FD072116	K1608325-010	Soil	07/21/16
11	FTBL-SS-B04-0-6-072116	K1608325-011	Soil	07/21/16
12	FTBL-SS-B05-0-6-072116	K1608325-012	Soil	07/21/16
13	FTBL-SS-B06-0-6-072116	K1608325-013	Soil	07/21/16
14	EB072116	K1608325-014	Water	07/21/16
15	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	Soil	07/21/16

LDC #: 37049D4a

SDG #: K1608325

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/16

Reviewer: JD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

	Client ID	Lab ID	Matrix	Date
16	FTBL-SS-B03-0-6-072116MSD	K1608325-009MSD	Soil	07/21/16
17				
18				
19				
20				
21				

Notes:

LDC #: 31045D4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-13	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
14	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
QC-15-10	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049D4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9-13

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.048	0.12	0.093									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	14									
Sb			0.013	0.065	0.012									
Pb			0.008	0.04	0.022									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049D4a

VALIDATION FINDINGS WORKSHEET

Split Duplicates

Reviewer: SB
2nd Reviewer: [signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	9	FTBL-SS-B03-0-6-072116-QA (SDG: FA35653)		
Antimony	0.136	2.8U	181	NQ
Copper	9.48	9.8	3	
Lead	23.6	25.7	9	
Zinc	45.5	52.3	14	

NQ = No qual because one or both samples < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049D4a.wpd

Quality Control
Outlier Reports

K1608344

Method Blank Outlier Report

Lab Reporting Batch ID: K1608344 **Laboratory:** ALS_K

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name:** Arcadis_FtBliss_ALS_160627

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609920-03	8/24/2016 8:29:00 PM	LEAD ZINC	0.007 mg/Kg 0.14 mg/Kg	FD072016 FTBL-SS-B15-0-6-072016 FTBL-SS-B16-0-6-072016 FTBL-SS-B17-0-6-072016 FTBL-SS-B18-0-6-072016 FTBL-SS-B21-0-6-072016 FTBL-SS-B22-0-6-072016 FTBL-SS-B23-0-6-072016 FTBL-SS-B24-0-6-072016

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072016(Initial/TOT)	COPPER	0.15 ug/L	0.15U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B18-0-6-072016MS (Dry) FTBL-SS-B18-0-6-072016MSD (Dry) (FTBL-SS-B18-0-6-072016)	ANTIMONY	38	38	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 103%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072016	ANTIMONY	J	0.007	0.050	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B18-0-6-072016 (Dry)	FD072016 (Dry)			
ANTIMONY	0.126	0.152	19	50.00	No Qualifiers Applied
COPPER	16.8	14.2	17	50.00	
LEAD	25.2	20.2	22	50.00	
ZINC	51.6	42.6	19	50.00	

LDC #: 37049E4a (9 of 30)

SDG #: K1608344

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/17

Page: 1 of 1

Reviewer: SD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = Sb out = PS ok = NC
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(8)
X.	Laboratory control samples	N	
XI.	~~Field Duplicates~~ Split	N	SD=(8, FTBL-SS-B18-0-6-072016-DA)
XII.	Internal Standard (ICP-MS)	A	(SDG: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	~~N~~ A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B21-0-6-072016	K1608344-002	Soil	07/20/16
2	FTBL-SS-B22-0-6-072016	K1608344-003	Soil	07/20/16
3	FTBL-SS-B23-0-6-072016	K1608344-004	Soil	07/20/16
4	FTBL-SS-B24-0-6-072016	K1608344-005	Soil	07/20/16
5	FTBL-SS-B15-0-6-072016	K1608344-008	Soil	07/20/16
6	FTBL-SS-B16-0-6-072016	K1608344-009	Soil	07/20/16
7	FTBL-SS-B17-0-6-072016	K1608344-010	Soil	07/20/16
8	FTBL-SS-B18-0-6-072016	K1608344-011	Soil	07/20/16
9	FD072016	K1608344-012	Soil	07/20/16
10	EB072016	K1608344-013	Water	07/20/16
11	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	Soil	07/20/16
12	FTBL-SS-B18-0-6-072016MSD	K1608344-011MSD	Soil	07/20/16
13				
14				
15				

LDC #: 37042EU4 (9 of 50)

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DC, 11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37042E4a (10)

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	9									
Sb			0.092	0.23	0.152									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 10

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06	0.007									
Pb			0.008	0.04	0.034									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049E4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: JB
2nd Reviewer: CL

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B18-0-6-072016-QA (SDG: FA35653)		
Antimony	0.126	0.74U	142	NQ
Copper	16.8	14.6	14	
Lead	25.2	22.4	12	
Zinc	51.6	39.3	27	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049E4a.wpd

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 21, 2016

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1608207

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-SS-B57-0-6-071816	K1608207-003	Soil	07/18/16
FTBL-SS-B58-0-6-071816	K1608207-004	Soil	07/18/16
FTBL-SS-B59-0-6-071816	K1608207-005	Soil	07/18/16
FTBL-SS-B60-0-6-071816	K1608207-006	Soil	07/18/16
FTBL-SS-B51-0-6-071816	K1608207-010	Soil	07/18/16
FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Copper, Lead, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Lead Zinc	0.026 mg/Kg 0.19 mg/Kg	All samples in SDG K1608207
ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

Sample EB071816 was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
EB071816	07/18/16	Copper Lead Zinc	0.15 ug/L 0.038 ug/L 0.3 ug/L	All soil samples in SDG K1608207

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For FTBL-SS-B57-0-6-071816MS/MSD, no data were qualified for Antimony and Lead percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

LDC #: 37049A4a

SDG #: K1608207

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~/IV

SD

Date: 9/15/16

Page: 1 of 1

Reviewer: SD

2nd Reviewer: A

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	7/18/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	EB=(10)
VII.	Matrix Spike/Matrix Spike Duplicates	SW	MSD=(11,12)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(1)
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	~~FTBL-SS-B52-0-6-071816~~	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	~~EB071816~~	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 37049A6

VALIDATION FINDINGS CHECKLIST

Reviewer: SD
2nd Reviewer: MC

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?	✓			
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.				
Target analytes were detected in the field duplicates.				
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 37048A4m

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: JD
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-S	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
QC:11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,

Comments: Mercury by CVAA if performed

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: All

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Pb	0.026			0.13										
Zn	0.19			0.95										

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 3D
2nd Reviewer: JL

METHOD: Trace Metals (EPA Method 200.7/200.8)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 07/18/16
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All

Analyte	Blank ID	Sample Identification											
[redacted]	10	Action Limit	No Qual.										
Cu	0.15	0.000750											
Pb	0.038	0.000190											
Zn	0.3	0.001500											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: SO
2nd Reviewer: M

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	11/12	S	Sb	38 (72-124)	38 (72-124)		1	No Qual. (PS ok)
			Pb		83 (84-118)			No Qual. (SER ok)

Comments:

LDC #: 37049A1 (4)

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: JD
2nd Reviewer: A

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV 17:17	ICP/MS (Initial calibration)	Cu	12.9 ug/L	12.5 ug/L	103%R	103%R	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV 19:20	ICP/MS (Continuing calibration)	Pb	24.99 ug/L	25 ug/L	100%R	100%R	Y
	CVAA (Contining calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: _____

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: JO
2nd Reviewer: JC

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICS AB 17:35	ICP interference check	Zn	21.67 ug/L	25ug/L	87%R	87%R	Y
LCS 19:17	Laboratory control sample	Cu	484.15 ug/L	500 ug/L	97%R	97%R	
MS 19:11	Matrix spike	Pb	(SSR-SR) 79.24 mg/kg	87.20 mg/kg	91%R	91%R	
MSD 19:14	Duplicate	Zn	139.83 mg/kg	139.09 mg/kg	0.5%RPD	0.5%RPD	
SER 19:05	ICP serial dilution	Cu	44.66 ug/L	41.93 ug/L	7%D	7%D	

Comments: *SER results = before 5x D:1 / 25x D:1 applied.

LDC #: 57049A4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: DO
2nd reviewer: SZ

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for (1) Sb were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)(%solids)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

%solids: 0.94
RD = 0.455335 ug/L
FV = 100ml
In. W = 1.25g
Dil = 5

Recalculation: $\frac{(0.455335\ ug/L)(100ml)(5)}{(1.25g)(0.94)} \times \frac{1mg}{1000ug} = 0.193\ mg/kg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Sb	0.193	0.193	Y
	2	Cu	24.0	24.0	
	3	Pb	49.9	49.9	
	4	Zn	39.6	39.6	
	5	Sb	0.822	0.822	

Note:

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September 08, 2016

Analytical Report for Service Request No: K1608344

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

RE: Closed Castner Firing Range / 06261038.0001.00400

Dear (b) (6),

Enclosed are the results of the sample(s) submitted to our laboratory July 22, 2016
For your reference, these analyses have been assigned our service request number **K1608344.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is (b) (6). You may also contact me via email at (b) (6)

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

(b) (6)
Senior Project
Manager

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Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
Chain of Custody
Total Solids
Metals
Raw Data
    Total Solids
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1608344
Project:	Closed Castner Firing Range/ 06261038.0001.00400	**Date Received:**	07/2216
Sample Matrix:	Soil and Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Fifteen samples were received for analysis at ALS Environmental on 07/22/16. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:
Antimony recoveries are generally low for soil and sediment samples when digested using EPA Method 3050B. Despite anticipated low recoveries, the method is still generally prescribed because of its versatility for general metals analysis. Antimony results (in conjunction with the matrix spike recovery) from this procedure should only be used as indicators to estimate concentrations. The matrix spike recoveries of Antimony for sample FTBL-SS-B18-0-6-072016 were below the DoD QSM control criterion. Since low recoveries resulted from a method defect and were possibly magnified by certain matrix components, no corrective action was appropriate. Alternative procedures that specifically target Antimony are available but were not specified for this project. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control.

No other anomalies associated with the analysis of these samples were observed.

Approved by___ (b) (6) _____

TRRP

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Appendix A ALS Kelso-Laboratory Data Package Signature Page

This data package consists of:

☒ This signature page, the laboratory review checklist, and the following reportable data:

☒ R1 Field chain-of-custody documentation;

☒ R2 Sample identification cross-reference;

☒ R3 Test reports (analytical data sheets) for each environmental sample that includes:

a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

☒ R4 Surrogate recovery data including:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

☒ R5 Test reports/summary forms for blank samples;

☒ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c) The laboratory's LCS QC limits.

☒ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits

☒ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

☒ R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;

☒ R10 Other problems or anomalies.

☒ The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable:] [This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

[redacted] (b) (6)	[redacted] (b) (6)	Senior Project Mgr	09/08/16
Name (Printed)	Sig	Official Title (printed)	Date

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608344				
Reviewer Name: [redacted]			Prep Batch Number(s): Various				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X1			
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/08/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1608344				
Reviewer Name: [redacted]			Prep Batch Number(s): Various				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 09/08/2016
Project Name: Closed Castner Firing Range	Laboratory Job Number: K1608344
Reviewer Name: (b) (6)	Prep Batch Number(s): Various

ER#[5]	Description
X1	See Total Metals Matrix Spike Recovery Exceptions narrative notes.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Chain of Custody

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Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: h1608344

Project Manager:	(b) (6)	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
Send copy to:			
Sampler's Name:			

REQUESTED ANALYSIS

TAT
- ■ Standard 15 day
- ☐ Same Day * 100%
- ☐ Next Day ***
- ☐ 3 Day
- ■ EDD

Surcharges. Please call for availability

Due Date:

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present		
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice
Cooler Custody Seals:	Yes	No	N/A	Total Containers:
Sample Custody Seals:	Yes	No	N/A	

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Explosives	x lead TCLP	Comments
FTBL-BS-B19-0-12-072016	S	072016	0915		2	X		X	Hold
FTBL-SS-B21-0-6-072016	S	072016	0900		1	X			
FTBL-SS-B22-0-6-072016	S	072016	0915		1	X			
FTBL-SS-B23-0-6-072016	S	072016	0925		1	X			
FTBL-SS-B24-0-6-072016	S	072016	0935		1	X			
FTBL-SS-B13-0-12-072016	S	072016	1330		2	X		X	Hold
FTBL-SS-B14-0-12-072016	S	072016	1255		2	X		X	Hold
FTBL-SS-B15-0-6-072016	S	072016	1145		1	X			
FTBL-SS-B16-0-6-072016	S	072016	1155		1	X			
FTBL-SS-B17-0-6-072016	S	072016	1205		1	X			
FTBL-SS-B18-0-6-072016	S	072016	1215		1	X			

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6)		072016/1400	(b) (6)		07/20/16 1400
		072016 - 1700			7/22/16 1000

* Note: Contact (b) (6) befor running TCLP Pb samples.

Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: KL1608344

Project Manager:	(b) (6)	**Bill to:**	**PO NUMBER:** 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
Send copy to:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present		
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice
Cooler Custody Seals:	Yes	No	N/A	Total Containers:
Sample Custody Seals:	Yes	No	N/A	

REQUESTED ANALYSIS

TAT

- ■ Standard 15 day
- ☐ Same Day ' 100%
- ☐ Next Day ***
- ☐ 3 Day
- ■ EDD

Surcharges. Please call for availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Explosives	TCLP Lead	Comments
FD072016		072016	—		1	X			
FTBL-SS-B18-0-6-072016-MS		072016	1215		1	X			
FTBL-SS-B18-0-6-072016-MSD		072016	1215		1	X			
EB072016		072016	1350		1	X			
FTBL-SS-B20-0-12-072016		072016	1100		2	X		X	Hold
FTBL-SS-B20-12-24-072016		072016	1120		2	X		X	

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6)		072016/1400	(b) (6)		07/20/16 1400
		07/20/16 - 1700			7/22/16 1000

Revised: 6/10/2016

PC Greg

Cooler Receipt and Preservation Form

Client Arcadis Service Request K16 08344

Received: 7/22/16 Opened: 7/22/16 By: [signature] Unloaded: 7/22/16 By: [signature]

1. Samples were received via? *Mail* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 front + back
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
-0.6	-0.8	0.7	0.5	-0.2	370		7768 0588 9254	

4. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Page____of____

Total Solids

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www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608344
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/20/16
Sample Matrix:	Soil	**Date Received:**	07/22/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
FTBL-SS-B21-0-6-072016	K1608344-002	**90.8**	-	1	08/02/16 12:48	
FTBL-SS-B22-0-6-072016	K1608344-003	**91.0**	-	1	08/02/16 12:48	
FTBL-SS-B23-0-6-072016	K1608344-004	**85.6**	-	1	08/02/16 12:48	
FTBL-SS-B24-0-6-072016	K1608344-005	**89.0**	-	1	08/02/16 12:48	
FTBL-SS-B15-0-6-072016	K1608344-008	**91.7**	-	1	08/02/16 12:48	
FTBL-SS-B16-0-6-072016	K1608344-009	**91.5**	-	1	08/02/16 12:48	
FTBL-SS-B17-0-6-072016	K1608344-010	**89.8**	-	1	08/02/16 12:48	
FTBL-SS-B18-0-6-072016	K1608344-011	**89.8**	-	1	08/02/16 12:48	
FD072016	K1608344-012	**87.8**	-	1	08/02/16 12:48	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608344
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/20/16
Sample Matrix:	Soil	**Date Received:**	07/22/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
FTBL-SS-B18-0-6-072016	K1608344-011DUP	-	89.8	90.2	90.0	<1	20	08/02/16
Batch QC	K1608358-008DUP	-	70.1	72.0	71.1	3	20	08/02/16

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608344
Project No.:	06261038.0001.00400	**Date Collected:**	7/20/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B21-0-6-072016** **Lab Code:** **K1608344-002**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.045	0.022	0.018	5.0	08/19/16	08/24/16	0.102		J
Copper	6020A	0.090	0.045	0.018	5.0	08/19/16	08/24/16	7.25		
Lead	6020A	0.045	0.011	0.004	5.0	08/19/16	08/24/16	11.4		
Zinc	6020A	0.45	0.22	0.09	5.0	08/19/16	08/24/16	43.5		

% Solids: **90.8**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608344
Date Collected: 7/20/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B22-0-6-072016 **Lab Code:** K1608344-003

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.045	0.023	0.018	5.0	08/19/16	08/24/16	0.066		J
Copper	6020A	0.091	0.045	0.018	5.0	08/19/16	08/24/16	7.50		
Lead	6020A	0.045	0.011	0.005	5.0	08/19/16	08/24/16	10.5		
Zinc	6020A	0.45	0.23	0.09	5.0	08/19/16	08/24/16	42.4		

% Solids: 91.0

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608344
Project No.:	06261038.0001.00400	**Date Collected:**	7/20/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B23-0-6-072016** **Lab Code:** **K1608344-004**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.045	0.022	0.018	5.0	08/19/16	08/24/16	0.124		J
Copper	6020A	0.089	0.045	0.018	5.0	08/19/16	08/24/16	9.87		
Lead	6020A	0.045	0.011	0.004	5.0	08/19/16	08/24/16	13.4		
Zinc	6020A	0.45	0.22	0.09	5.0	08/19/16	08/24/16	49.1		

% Solids: **85.6**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608344
Date Collected: 7/20/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B24-0-6-072016 **Lab Code:** K1608344-005

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.044	0.022	0.018	5.0	08/19/16	08/24/16	0.182		J
Copper	6020A	0.088	0.044	0.018	5.0	08/19/16	08/24/16	11.2		
Lead	6020A	0.044	0.011	0.004	5.0	08/19/16	08/24/16	19.9		
Zinc	6020A	0.44	0.22	0.09	5.0	08/19/16	08/24/16	51.5		

% Solids: 89.0

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608344
Date Collected: 7/20/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B15-0-6-072016 **Lab Code:** K1608344-008

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.043	0.022	0.017	5.0	08/19/16	08/24/16	0.159		J
Copper	6020A	0.087	0.043	0.017	5.0	08/19/16	08/24/16	11.9		
Lead	6020A	0.043	0.011	0.004	5.0	08/19/16	08/24/16	17.0		
Zinc	6020A	0.43	0.22	0.09	5.0	08/19/16	08/24/16	48.9		

% Solids: 91.7

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608344
Date Collected: 7/20/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FTBL-SS-B16-0-6-072016 **Lab Code:** K1608344-009

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.045	0.022	0.018	5.0	08/19/16	08/24/16	0.093		J
Copper	6020A	0.090	0.045	0.018	5.0	08/19/16	08/24/16	8.16		
Lead	6020A	0.045	0.011	0.004	5.0	08/19/16	08/24/16	8.61		
Zinc	6020A	0.45	0.22	0.09	5.0	08/19/16	08/24/16	35.5		

% Solids: 91.5

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608344
Project No.:	06261038.0001.00400	**Date Collected:**	7/20/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B17-0-6-072016** **Lab Code:** **K1608344-010**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.044	0.022	0.018	5.0	08/19/16	08/24/16	0.100		J
Copper	6020A	0.088	0.044	0.018	5.0	08/19/16	08/24/16	10.6		
Lead	6020A	0.044	0.011	0.004	5.0	08/19/16	08/24/16	10.6		
Zinc	6020A	0.44	0.22	0.09	5.0	08/19/16	08/24/16	41.0		

% Solids: **89.8**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608344
Project No.:	06261038.0001.00400	**Date Collected:**	7/20/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	SOIL	**Units:**	mg/Kg
		Basis:	DRY

Sample Name: **FTBL-SS-B18-0-6-072016** **Lab Code:** **K1608344-011**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.048	0.024	0.019	5.0	08/19/16	08/24/16	0.126		J
Copper	6020A	0.097	0.048	0.019	5.0	08/19/16	08/24/16	16.8		
Lead	6020A	0.048	0.012	0.005	5.0	08/19/16	08/24/16	25.2		
Zinc	6020A	0.48	0.24	0.10	5.0	08/19/16	08/24/16	51.6		

% Solids: **89.8**

Comments:

Metals
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: SOIL

Service Request: K1608344
Date Collected: 7/20/2016
Date Received: 7/22/2016
Units: mg/Kg
Basis: DRY

Sample Name: FD072016
Lab Code: K1608344-012

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.044	0.022	0.018	5.0	08/19/16	08/25/16	0.152		J
Copper	6020A	0.088	0.044	0.018	5.0	08/19/16	08/25/16	14.2		
Lead	6020A	0.044	0.011	0.004	5.0	08/19/16	08/25/16	20.2		
Zinc	6020A	0.44	0.22	0.09	5.0	08/19/16	08/25/16	42.6		

% Solids: 87.8

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Service Request: K1608344
Project No.: 06261038.0001.00400
Date Collected:
Project Name: Closed Castner Firing Range
Date Received:
Matrix: SOIL
Units: mg/Kg
Basis: DRY

Sample Name: Method Blank
Lab Code: KQ1609920-03

Analyte	Analysis Method	LOQ	LOD	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.025	0.020	5.0	08/19/16	08/24/16	0.025	U	J
Copper	6020A	0.100	0.050	0.020	5.0	08/19/16	08/24/16	0.050	U	
Lead	6020A	0.050	0.012	0.005	5.0	08/19/16	08/24/16	0.007	J	
Zinc	6020A	0.50	0.25	0.10	5.0	08/19/16	08/24/16	0.14	J	

% Solids: 100.0

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	25.1	100	25.0	24.6	98	24.8	99	6020A
Copper	12.5	12.9	103	25.0	25.2	101	25.5	102	6020A
Lead	25.0	25.7	103	25.0	25.1	100	24.8	99	6020A
Zinc	25.0	25.3	101	25.0	24.2	97	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	25.4	102	24.7	99	6020A
Copper				25.0	25.0	100	25.5	102	6020A
Lead				25.0	26.2	105	25.0	100	6020A
Zinc				25.0	24.8	99	24.6	98	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99	24.8	99	6020A
Copper				25.0	25.5	102	25.3	101	6020A
Lead				25.0	25.4	102	24.7	99	6020A
Zinc				25.0	24.6	98	24.6	98	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	25.5	102	25.3	101	6020A
Copper				25.0	25.0	100	25.8	103	6020A
Lead				25.0	25.5	102	25.4	102	6020A
Zinc				25.0	24.7	99	25.2	101	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99			6020A
Copper				25.0	26.0	104			6020A
Lead				25.0	25.6	102			6020A
Zinc				25.0	24.9	100			6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	26.2	105	25.0	24.1	96	24.2	97	6020A
Copper	12.5	13.4	107	25.0	25.8	103	26.0	104	6020A
Lead	25.0	25.6	102	25.0	24.6	98	24.3	97	6020A
Zinc	25.0	25.9	104	25.0	24.7	99	24.9	100	6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608344

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVS1									
	Antimony	0.104	0.100	104	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Copper	0.178	0.200	89	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Lead	0.102	0.100	102	80.0 - 120.0	MS	8/24/2016	17:29	082416d
	Zinc	0.992	1.000	99	80.0 - 120.0	MS	8/24/2016	17:29	082416d
LLCCVS1									
	Antimony	0.129	0.100	129	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Copper	0.191	0.200	96	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Lead	0.108	0.100	108	70.0 - 130.0	MS	8/24/2016	18:47	082416d
	Zinc	0.848	1.000	85	70.0 - 130.0	MS	8/24/2016	18:47	082416d
LLCCVS2									
	Antimony	0.098	0.100	98	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Copper	0.202	0.200	101	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Lead	0.102	0.100	102	70.0 - 130.0	MS	8/24/2016	20:02	082416d
	Zinc	1.141	1.000	114	70.0 - 130.0	MS	8/24/2016	20:02	082416d
LLCCVS3									
	Antimony	0.092	0.100	92	70.0 - 130.0	MS	8/24/2016	21:17	082416d
	Copper	0.223	0.200	112	70.0 - 130.0	MS	8/24/2016	21:17	082416d
	Lead	0.104	0.100	104	70.0 - 130.0	MS	8/24/2016	21:17	082416d
	Zinc	0.966	1.000	97	70.0 - 130.0	MS	8/24/2016	21:17	082416d
LLCCVS4									
	Antimony	0.081	0.100	81	70.0 - 130.0	MS	8/24/2016	22:34	082416d
	Copper	0.186	0.200	93	70.0 - 130.0	MS	8/24/2016	22:34	082416d
	Lead	0.106	0.100	106	70.0 - 130.0	MS	8/24/2016	22:34	082416d
	Zinc	0.973	1.000	97	70.0 - 130.0	MS	8/24/2016	22:34	082416d
LLICVS1									
	Antimony	0.088	0.100	88	80.0 - 120.0	MS	8/25/2016	13:04	082516a
	Copper	0.199	0.200	100	80.0 - 120.0	MS	8/25/2016	13:04	082516a
	Lead	0.101	0.100	101	80.0 - 120.0	MS	8/25/2016	13:04	082516a
	Zinc	0.996	1.000	100	80.0 - 120.0	MS	8/25/2016	13:04	082516a

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608344

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCVS1									
	Antimony	0.107	0.100	107	70.0 - 130.0	MS	8/25/2016	13:41	082516a
	Copper	0.229	0.200	114	70.0 - 130.0	MS	8/25/2016	13:41	082516a
	Lead	0.095	0.100	95	70.0 - 130.0	MS	8/25/2016	13:41	082516a
	Zinc	1.051	1.000	105	70.0 - 130.0	MS	8/25/2016	13:41	082516a

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.040	U	0.040	U	0.040	U	0.048	J	6020A
Copper	0.040	U	0.040	U	0.040	U	0.040	U	6020A
Lead	0.010	U	0.010	U	0.010	U	0.010	U	6020A
Zinc	0.20	U	0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.040	U	0.040	U	0.040	U	6020A
Copper			0.040	U	0.040	U	0.040	U	6020A
Lead			0.010	U	0.010	U	0.010	U	6020A
Zinc			0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.040	U	0.040	U	0.040	U	6020A
Copper			0.040	U	0.040	U	0.040	U	6020A
Lead			0.010	U	0.010	U	0.010	U	6020A
Zinc			0.20	U	0.20	U	0.20	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.060	J	0.040	U	0.092	J			6020A
Copper	0.040	U	0.040	U	0.040	U			6020A
Lead	0.010	U	0.010	U	0.010	U			6020A
Zinc	0.20	U	0.20	U	0.20	U			6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.0	0.0				
Copper	0.0	50.0	0.6	45.6	91			
Lead	0.0		0.1	0.1				
Zinc	0.0	25.0	0.2	21.7	87			

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.0	0.1				
Copper	0.0	50.0	0.6	48.8	98			
Lead	0.0		0.1	0.1				
Zinc	0.0	25.0	0.3	23.0	92			

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 89.8

Sample Name: FTBL-SS-B18-0-6-072016S **Lab Code:** K1608344-011S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	37.393		0.126		98.547	38	J	6020A
Copper	84 - 119	63.786		16.843		49.27	95		6020A
Lead	84 - 118	114.525		25.198		98.55	91		6020A
Zinc	82 - 119	147.69		51.56		98.55	98		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Units:** MG/KG

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: SOIL **% Solids:** 89.8

Sample Name: FTBL-SS-B18-0-6-072016SD **Lab Code:** K1608344-011SD

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	72 - 124	36.503		0.126		96.834	38	J	6020A
Copper	84 - 119	60.645		16.843		48.42	90		6020A
Lead	84 - 118	111.256		25.198		96.83	89		6020A
Zinc	82 - 119	140.88		51.56		96.83	92		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** DRY

Matrix: WATER

Sample Name: FTBL-SS-B18-0-6-072016A **Lab Code:** K1608344-011A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	51.69		0.26		50.0	103		6020A
Copper	75 - 125	82.85		34.79		50.0	96		6020A
Lead	75 - 125	98.703		52.043		50.0	93		6020A
Zinc	75 - 125	156.77		106.50		50.0	101		6020A

Metals

- 6 -

DUPLICATES

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608344
Project No.:	06261038.0001.00400	**Units:**	MG/KG
Project Name:	Closed Castner Firing Range	**Basis:**	DRY
Matrix:	SOIL	**% Solids:**	89.8

Sample Name: **FTBL-SS-B18-0-6-072016SD** **Lab Code:** **K1608344-011SD**

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Antimony	20	37.393		36.503		2.4		6020A
Copper	20	63.786		60.645		5.0		6020A
Lead	20	114.525		111.256		2.9		6020A
Zinc	20	147.69		140.88		4.7		6020A

An empty field in the Control Limit column indicates the control limit is not applicable.

Form VI - IN

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	1000.0	1042.7	104					
Copper	500.0	520.9	104					
Lead	1000.0	1032.4	103					
Zinc	1000.0	1064.9	106					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **FTBL-SS-B18-0-6-072016L** **Lab Code:** **K1608344-011L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	0.261		0.235	J	10		MS
Copper	34.79		36.19		4		MS
Lead	52.04		54.32		4		MS
Zinc	106.50		112.00		5		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-04**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.10	0.05	0.04	MS
Copper	65		0.20	0.10	0.04	MS
Lead	208		0.100	0.025	0.010	MS
Zinc	66		1.00	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-04**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	45.000	3000	6020A
Copper	45.000	3000	6020A
Lead	45.000	3000	6020A
Zinc	45.000	3000	6020A

Comments:

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Weight (g)	Final Volume(mL)
K1608344-002	8/19/2016	1.23	100.0
K1608344-003	8/19/2016	1.21	100.0
K1608344-004	8/19/2016	1.31	100.0
K1608344-005	8/19/2016	1.27	100.0
K1608344-008	8/19/2016	1.26	100.0
K1608344-009	8/19/2016	1.22	100.0
K1608344-010	8/19/2016	1.26	100.0
K1608344-011	8/19/2016	1.15	100.0
K1608344-011S	8/19/2016	1.13	100.0
K1608344-011SD	8/19/2016	1.15	100.0
K1608344-012	8/19/2016	1.30	100.0
KQ1609920-03	8/19/2016	1.00	100.0
KQ1609920-04	8/19/2016	100.0	100.0

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Blank	1.0	17:11			X								X		X										X	
Standard 1	1.0	17:14			X								X		X										X	
ICV1	1.0	17:17			X								X		X										X	
CCV1	1.0	17:20			X								X		X										X	
ICB1	1.0	17:23			X								X		X										X	
CCB1	1.0	17:26			X								X		X										X	
LLICVS1	1.0	17:29			X								X		X										X	
ICS-A1	1.0	17:32			X								X		X										X	
ICS-AB1	1.0	17:35			X								X		X										X	
ZZZZZZ	5.0	17:38																								
ZZZZZZ	5.0	17:41																								
ZZZZZZ	5.0	17:44																								
ZZZZZZ	5.0	17:47																								
ZZZZZZ	5.0	17:50																								
ZZZZZZ	5.0	17:53																								
ZZZZZZ	5.0	17:56																								
ZZZZZZ	5.0	17:59																								
ZZZZZZ	5.0	18:02																								
CCV2	1.0	18:05			X								X		X										X	
CCB2	1.0	18:08			X								X		X										X	
ZZZZZZ	5.0	18:11																								
ZZZZZZ	5.0	18:14																								
ZZZZZZ	1.0	18:17																								
ZZZZZZ	1.0	18:20																								
ZZZZZZ	5.0	18:23																								
ZZZZZZ	5.0	18:26																								
ZZZZZZ	5.0	18:29																								
ZZZZZZ	5.0	18:32																								
ZZZZZZ	1.0	18:35																								
ZZZZZZ	5.0	18:38																								
CCV3	1.0	18:41			X								X		X										X	
CCB3	1.0	18:44			X								X		X										X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
LLCCVS1	1.0	18:47			X								X		X										X	
ZZZZZZ	5.0	18:50																								
ZZZZZZ	5.0	18:53																								
ZZZZZZ	5.0	18:56																								
ZZZZZZ	5.0	18:59																								
ZZZZZZ	5.0	19:02																								
ZZZZZZ	5.0	19:05																								
ZZZZZZ	5.0	19:08																								
ZZZZZZ	5.0	19:11																								
ZZZZZZ	5.0	19:14																								
ZZZZZZ	5.0	19:17																								
CCV4	1.0	19:20			X								X		X										X	
CCB4	1.0	19:23			X								X		X										X	
ZZZZZZ	1.0	19:26																								
ZZZZZZ	5.0	19:29																								
ZZZZZZ	5.0	19:32																								
ZZZZZZ	5.0	19:35																								
ZZZZZZ	5.0	19:38																								
ZZZZZZ	5.0	19:41																								
ZZZZZZ	5.0	19:44																								
ZZZZZZ	5.0	19:47																								
ZZZZZZ	5.0	19:50																								
ZZZZZZ	5.0	19:53																								
CCV5	1.0	19:56			X								X		X										X	
CCB5	1.0	19:59			X								X		X										X	
LLCCVS2	1.0	20:02			X								X		X										X	
ZZZZZZ	5.0	20:05																								
ZZZZZZ	5.0	20:08																								
ZZZZZZ	5.0	20:11																								
ZZZZZZ	5.0	20:14																								
ZZZZZZ	5.0	20:17																								
ZZZZZZ	5.0	20:20																								

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	5.0	20:23																												
ZZZZZZ	5.0	20:26																												
KQ1609920-03	5.0	20:29			X								X		X											X				
K1608344-002	5.0	20:32			X								X		X											X				
CCV6	1.0	20:35			X								X		X											X				
CCB6	1.0	20:38			X								X		X											X				
K1608344-003	5.0	20:41			X								X		X											X				
K1608344-004	5.0	20:44			X								X		X											X				
K1608344-005	5.0	20:47			X								X		X											X				
K1608344-008	5.0	20:50			X								X		X											X				
K1608344-009	5.0	20:53			X								X		X											X				
K1608344-010	5.0	20:56			X								X		X											X				
K1608344-011	5.0	20:59			X								X		X											X				
K1608344-011L	5.0	21:02			X								X		X											X				
K1608344-011A	5.0	21:05			X								X		X											X				
K1608344-011S	5.0	21:08			X								X		X											X				
CCV7	1.0	21:11			X								X		X											X				
CCB7	1.0	21:14			X								X		X											X				
LLCCVS3	1.0	21:17			X								X		X											X				
K1608344-011SD	5.0	21:20			X								X		X											X				
KQ1609920-04	5.0	21:23			X								X		X											X				
ZZZZZZ	1.0	21:26																												
ZZZZZZ	5.0	21:29																												
ZZZZZZ	5.0	21:32																												
ZZZZZZ	5.0	21:35																												
ZZZZZZ	5.0	21:38																												
ZZZZZZ	5.0	21:41																												
ZZZZZZ	5.0	21:44																												
ZZZZZZ	5.0	21:47																												
ZZZZZZ	1.0	21:50																												
CCV8	1.0	21:52			X								X		X											X				
CCB8	1.0	21:55			X								X		X											X				

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Run Number:** 082416d

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/24/2016 **End Date:** 8/24/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
ZZZZZZ	5.0	21:58																												
ZZZZZZ	5.0	22:01																												
ZZZZZZ	5.0	22:04																												
ZZZZZZ	5.0	22:07																												
ZZZZZZ	5.0	22:10																												
ZZZZZZ	1.0	22:13																												
ZZZZZZ	5.0	22:16																												
ZZZZZZ	5.0	22:19																												
ZZZZZZ	5.0	22:22																												
ZZZZZZ	5.0	22:25																												
CCV9	1.0	22:28			X								X		X											X				
CCB9	1.0	22:31			X								X		X											X				
LLCCVS4	1.0	22:34			X								X		X											X				

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Run Number:** 082516a

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-04 **Method:** MS

Start Date: 8/25/2016 **End Date:** 8/25/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Blank	1.0	12:47			X								X		X										X	
Standard 1	1.0	12:49			X								X		X										X	
ICV2	1.0	12:52			X								X		X										X	
CCV1	1.0	12:55			X								X		X										X	
ICB2	1.0	12:58			X								X		X										X	
CCB1	1.0	13:01			X								X		X										X	
LLICVS1	1.0	13:04			X								X		X										X	
ICS-A1	1.0	13:07			X								X		X										X	
ICS-AB1	1.0	13:10			X								X		X										X	
ZZZZZZ	1.0	13:13																								
ZZZZZZ	1.0	13:16																								
ZZZZZZ	5.0	13:19																								
K1608344-012	5.0	13:22			X								X		X										X	
ZZZZZZ	500.0	13:24																								
CCV2	1.0	13:27			X								X		X										X	
CCB2	1.0	13:30			X								X		X										X	
ZZZZZZ	1.0	13:33																								
LLCCVS1	1.0	13:41			X								X		X										X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608344

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
Blank	Blank	1711	100		100		100							
Standard 1	Standard 1	1714	101		101		102							
ICV1	ICV	1717	101		103		100							
CCV1	CCV	1720	101		102		101							
ICB1	ICB	1723	101		102		99							
CCB1	CCB	1726	99		100		100							
LLICVS1	LLICVS1	1729	99		102		100							
ICS-A1	ICSA	1732	85		88		94							
ICS-AB1	ICSAB	1735	87		89		94							
ZZZZZZ	ZZZZZZ	1738												
ZZZZZZ	ZZZZZZ	1741												
ZZZZZZ	ZZZZZZ	1744												
ZZZZZZ	ZZZZZZ	1747												
ZZZZZZ	ZZZZZZ	1750												
ZZZZZZ	ZZZZZZ	1753												
ZZZZZZ	ZZZZZZ	1756												
ZZZZZZ	ZZZZZZ	1759												
ZZZZZZ	ZZZZZZ	1802												
CCV2	CCV	1805	103		105		103							
CCB2	CCB	1808	102		102		101							
ZZZZZZ	ZZZZZZ	1811												
ZZZZZZ	ZZZZZZ	1814												
ZZZZZZ	ZZZZZZ	1817												
ZZZZZZ	ZZZZZZ	1820												
ZZZZZZ	ZZZZZZ	1823												
ZZZZZZ	ZZZZZZ	1826												
ZZZZZZ	ZZZZZZ	1829												
ZZZZZZ	ZZZZZZ	1832												
ZZZZZZ	ZZZZZZ	1835												
ZZZZZZ	ZZZZZZ	1838												
CCV3	CCV	1841	98		95		94							
CCB3	CCB	1844	98		99		101							
LLCCVS1	LLCCVS1	1847	101		102		103							
ZZZZZZ	ZZZZZZ	1850												
ZZZZZZ	ZZZZZZ	1853												
ZZZZZZ	ZZZZZZ	1856												
ZZZZZZ	ZZZZZZ	1859												
ZZZZZZ	ZZZZZZ	1902												
ZZZZZZ	ZZZZZZ	1905												
ZZZZZZ	ZZZZZZ	1908												
ZZZZZZ	ZZZZZZ	1911												
ZZZZZZ	ZZZZZZ	1914												
ZZZZZZ	ZZZZZZ	1917												
CCV4	CCV	1920	109		108		107							

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608344

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
CCB4	CCB	1923	108		109		106							
ZZZZZZ	ZZZZZZ	1926												
ZZZZZZ	ZZZZZZ	1929												
ZZZZZZ	ZZZZZZ	1932												
ZZZZZZ	ZZZZZZ	1935												
ZZZZZZ	ZZZZZZ	1938												
ZZZZZZ	ZZZZZZ	1941												
ZZZZZZ	ZZZZZZ	1944												
ZZZZZZ	ZZZZZZ	1947												
ZZZZZZ	ZZZZZZ	1950												
ZZZZZZ	ZZZZZZ	1953												
CCV5	CCV	1956	109		106		105							
CCB5	CCB	1959	108		107		106							
LLCCVS2	LLCCVS2	2002	107		108		108							
ZZZZZZ	ZZZZZZ	2005												
ZZZZZZ	ZZZZZZ	2008												
ZZZZZZ	ZZZZZZ	2011												
ZZZZZZ	ZZZZZZ	2014												
ZZZZZZ	ZZZZZZ	2017												
ZZZZZZ	ZZZZZZ	2020												
ZZZZZZ	ZZZZZZ	2023												
ZZZZZZ	ZZZZZZ	2026												
KQ1609920-03	Method Blank	2029	95		98		98							
K1608344-002	FTBL-SS-B21-0-6-	2032	104		102		116							
CCV6	CCV	2035	104		105		108							
CCB6	CCB	2038	101		103		103							
K1608344-003	FTBL-SS-B22-0-6-	2041	101		100		113							
K1608344-004	FTBL-SS-B23-0-6-	2044	100		102		115							
K1608344-005	FTBL-SS-B24-0-6-	2047	102		102		114							
K1608344-008	FTBL-SS-B15-0-6-	2050	86		92		99							
K1608344-009	FTBL-SS-B16-0-6-	2053	83		90		97							
K1608344-010	FTBL-SS-B17-0-6-	2056	83		90		97							
K1608344-011	FTBL-SS-B18-0-6-	2059	87		91		97							
K1608344-011L	FTBL-SS-B18-0-6-	2102	95		99		103							
K1608344-011A	FTBL-SS-B18-0-6-	2105	86		90		98							
K1608344-011S	FTBL-SS-B18-0-6-	2108	86		92		99							
CCV7	CCV	2111	98		101		101							
CCB7	CCB	2114	96		98		99							
LLCCVS3	LLCCVS3	2117	95		98		101							
K1608344-011SD	FTBL-SS-B18-0-6-	2120	87		91		99							
KQ1609920-04	Lab Control	2123	94		97		98							
ZZZZZZ	ZZZZZZ	2126												
ZZZZZZ	ZZZZZZ	2129												
ZZZZZZ	ZZZZZZ	2132												

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608344

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/24/2016 End Date: 08/24/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
ZZZZZZ	ZZZZZZ	2135												
ZZZZZZ	ZZZZZZ	2138												
ZZZZZZ	ZZZZZZ	2141												
ZZZZZZ	ZZZZZZ	2144												
ZZZZZZ	ZZZZZZ	2147												
ZZZZZZ	ZZZZZZ	2150												
CCV8	CCV	2152	102		103		103							
CCB8	CCB	2155	104		103		101							
ZZZZZZ	ZZZZZZ	2158												
ZZZZZZ	ZZZZZZ	2201												
ZZZZZZ	ZZZZZZ	2204												
ZZZZZZ	ZZZZZZ	2207												
ZZZZZZ	ZZZZZZ	2210												
ZZZZZZ	ZZZZZZ	2213												
ZZZZZZ	ZZZZZZ	2216												
ZZZZZZ	ZZZZZZ	2219												
ZZZZZZ	ZZZZZZ	2222												
ZZZZZZ	ZZZZZZ	2225												
CCV9	CCV	2228	107		107		105							
CCB9	CCB	2231	105		106		105							
LLCCVS4	LLCCVS4	2234	105		107		104							

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608344

ICP-MS Instrument ID: K-ICP-MS-04 Start Date: 08/25/2016 End Date: 08/25/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ge-K3_72	Q	Element In-K2_115	Q	Element Lu-K2_175	Q	Element	Q	Element	Q	Element	Q
Blank	Blank	1247	100		100		100							
Standard 1	Standard 1	1249	103		98		100							
ICV2	ICV	1252	102		100		100							
CCV1	CCV	1255	101		100		101							
ICB2	ICB	1258	101		102		100							
CCB1	CCB	1301	100		102		100							
LLICVS1	LLICVS1	1304	104		99		100							
ICS-A1	ICSA	1307	85		88		94							
ICS-AB1	ICSAB	1310	83		88		94							
ZZZZZZ	ZZZZZZ	1313												
ZZZZZZ	ZZZZZZ	1316												
ZZZZZZ	ZZZZZZ	1319												
K1608344-012	FD072016	1322	87		88		95							
ZZZZZZ	ZZZZZZ	1324												
CCV2	CCV	1327	92		97		99							
CCB2	CCB	1330	94		97		97							
ZZZZZZ	ZZZZZZ	1333												
LLCCVS1	LLCCVS1	1341	99		100		99							

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1608344
Project No.:	06261038.0001.00400	**Date Collected:**	7/20/2016
Project Name:	Closed Castner Firing Range	**Date Received:**	7/22/2016
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **EB072016** **Lab Code:** **K1608344-013**

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	08/02/16	08/03/16	0.007	J	
Copper	6020A	0.10	0.05	0.02	1.0	08/02/16	08/03/16	0.15		
Lead	6020A	0.020	0.010	0.004	1.0	08/02/16	08/03/16	0.034		
Zinc	6020A	0.5	0.5	0.2	1.0	08/04/16	08/05/16	0.5		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: WATER

Service Request: K1608344
Date Collected:
Date Received:
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1609039-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Antimony	6020A	0.050	0.012	0.006	1.0	08/02/16	08/03/16	0.012	U	
Copper	6020A	0.10	0.05	0.02	1.0	08/02/16	08/03/16	0.05	J	
Lead	6020A	0.020	0.010	0.004	1.0	08/02/16	08/03/16	0.004	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: ARCADIS U.S., Inc.
Project No.: 06261038.0001.00400
Project Name: Closed Castner Firing Range
Matrix: WATER

Service Request: K1608344
Date Collected:
Date Received:
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1609201-01

Analyte	Analysis Method	LOQ	LOD	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Zinc	6020A	0.5	0.5	0.2	1.0	08/04/16	08/05/16	0.5	U	

Comments:

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony	25.0	26.1	104	25.0	24.8	99	25.1	100	6020A
Copper	12.5	12.4	99	25.0	25.0	100	25.2	101	6020A
Lead	25.0	25.2	101	25.0	25.0	100	25.4	102	6020A
Zinc	25.0	25.5	102	25.0	25.2	101	24.8	99	6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.8	99	24.8	99	6020A
Copper				25.0	25.5	102	25.5	102	6020A
Lead				25.0	25.1	100	25.4	102	6020A
Zinc				25.0	24.8	99			6020A

Metals
- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICV Source: Inorganic Ventures **CCV Source:** ALS MIXED

Concentration Units: ug/L

	Initial Calibration			Continuing Calibration					
Analyte	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	Method
Antimony				25.0	24.7	99			6020A
Copper				25.0	25.2	101			6020A
Lead				25.0	25.1	100			6020A

Metals

- 2a -

LOW LEVEL INITIAL CALIBRATION AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Client: ARCADIS U.S., Inc. **SDG No.:** K1608344

Contract: 06261038.0001.00400 **Lab Code:** ALSK **Case No.:** **SAS No.:**

Initial Calibration Source: Inorganic Ventures

Continuing Calibration Source: ALS MIXED

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICVW1									
	Antimony	0.051	0.05	102	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Copper	0.101	0.10	101	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
	Lead	0.020	0.02	100	80.0 - 120.0	MS	8/3/2016	12:32	080316CMS
LLCCVW1									
	Antimony	0.046	0.05	92	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Copper	0.090	0.10	90	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
	Lead	0.020	0.02	100	70.0 - 130.0	MS	8/3/2016	14:37	080316CMS
LLCCVW2									
	Antimony	0.057	0.05	114	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Copper	0.106	0.10	106	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
	Lead	0.024	0.02	120	70.0 - 130.0	MS	8/3/2016	16:17	080316CMS
LLICVW1									
	Zinc	0.44	0.50	88	80.0 - 120.0	MS	8/5/2016	05:59	080516AMS
LLCCVW1									
	Zinc	0.47	0.50	94	70.0 - 130.0	MS	8/5/2016	06:43	080516AMS

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony	0.012	J	0.006	U	0.020	J	0.006	U	6020A
Copper	0.02	U	0.02	U	0.02	U	0.02	U	6020A
Lead	0.005	J	0.004	U	0.008	J	0.007	J	6020A
Zinc	0.2	U	0.2	U	0.2	U	0.2	U	6020A

Metals

- 3 -

BLANKS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Method
Antimony			0.006	U	0.013	J			6020A
Copper			0.02	U	0.02	U			6020A
Lead			0.008	J	0.006	J			6020A

Metals

- 4 -

ICP INTERFERENCE CHECK SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03** **ICS Source:** **Inorganic Ventures**

Concentration Units): **ug/L**

Analyte	True		Initial Found			Final Found		
	Sol.A	Sol.AB	Sol.A	Sol.AB	%R	Sol.A	Sol.AB	%R
Antimony	0.0		0.06	0.04				
Copper	0.0	50.0	2.38	47.7	95			
Lead	0.0		0.17	0.14				
Zinc	0.0	25.0	2.04	26.4	106			

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** NA

Matrix: WATER

Sample Name: Batch QC1A **Lab Code:** K1608011-007A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Zinc	75 - 125	22.49		0.30	J	20.0	111		6020A

Metals
- 5B -
POST SPIKE SAMPLE RECOVERY

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range **Basis:** NA

Matrix: WATER

Sample Name: Batch QC2A **Lab Code:** K1608325-014A

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	21.680		0.012	J	20.0	108		6020A
Copper	75 - 125	22.09		0.13		20.0	110		6020A
Lead	75 - 125	21.666		0.022		20.0	108		6020A

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	50.1	100					
Copper	12.5	12.6	101					
Lead	50	50.1	100					
Zinc	25	23.9	96					

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Antimony	50	49.8	100					
Copper	12.5	12.7	102					
Lead	50	49.4	99					
Zinc	25	24.4	98					

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **Batch QC1L** **Lab Code:** **K1608011-007L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Zinc	0.30	J	2.19	J	630		MS

Metals

- 9 -

ICP SERIAL DILUTIONS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Units:** UG/L

Project Name: Closed Castner Firing Range

Sample Name: **Batch QC2L** **Lab Code:** **K1608325-014L**

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Antimony	0.012	J	0.030	U	100.0		MS
Copper	0.13		0.10	U	100.0		MS
Lead	0.022		0.029	J	32		MS

Metals

- 10 -

DETECTION LIMITS

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP/ICP-MS ID #: **K-ICP-MS-03**

GFAA ID #: **AA ID #:**

Analyte	Isotope	Back-ground	LOQ ug/L	LOD ug/L	MDL ug/L	M
Antimony	123		0.050	0.013	0.006	MS
Copper	65		0.10	0.05	0.02	MS
Lead	208		0.020	0.010	0.004	MS
Zinc	66		0.50	0.50	0.20	MS

Comments:

Metals
-12-
ICP LINEAR RANGES (QUARTERLY)

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

ICP ID Number: **K-ICP-MS-03**

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony	15.000	2000	6020A
Copper	15.000	2000	6020A
Lead	15.000	2000	6020A
Zinc	15.000	2000	6020A

Comments:

Metals

-13-

PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608344-013	8/2/2016	25.0	25.0
KQ1609039-01	8/2/2016	25.0	25.0
KQ1609039-02	8/2/2016	25.0	25.0
KQ1609039-02Dup	8/2/2016	25.0	25.0

Metals
-13-
PREPARATION LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400

Project Name: Closed Castner Firing Range

Method: MS

Sample ID	Preparation Date	Initial Volume	Final Volume(mL)
K1608344-013	8/4/2016	25.0	25.0
KQ1609201-01	8/4/2016	25.0	25.0
KQ1609201-02	8/4/2016	25.0	25.0
KQ1609201-03	8/4/2016	25.0	25.0

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Cal. Blk	1.0	11:58			X								X		X											
Cal. Stn	1.0	12:05			X								X		X											
ICV1	1.0	12:08			X								X		X											
CCV1	1.0	12:13			X								X		X											
ZZZZZZ	1.0	12:20																								
ICB1	1.0	12:24			X								X		X											
CCB1	1.0	12:28			X								X		X											
LLICVW1	1.0	12:32			X								X		X											
ZZZZZZ	1.0	12:35																								
ICS-A1	1.0	12:43			X								X		X											
ICS-AB1	1.0	12:46			X								X		X											
ZZZZZZ	1.0	12:50																								
ZZZZZZ	1.0	13:06																								
ZZZZZZ	1.0	13:10																								
ZZZZZZ	1.0	13:14																								
ZZZZZZ	5.0	13:18																								
ZZZZZZ	1.0	13:22																								
ZZZZZZ	1.0	13:25																								
ZZZZZZ	1.0	13:29																								
ZZZZZZ	1.0	13:33																								
CCV2	1.0	13:36			X								X		X											
CCB2	1.0	13:44			X								X		X											
ZZZZZZ	1.0	13:48																								
ZZZZZZ	1.0	13:52																								
ZZZZZZ	1.0	13:55																								
ZZZZZZ	1.0	13:59																								
ZZZZZZ	1.0	14:03																								
ZZZZZZ	1.0	14:07																								
ZZZZZZ	1.0	14:10																								
ZZZZZZ	1.0	14:14																								
ZZZZZZ	1.0	14:17																								
CCV3	1.0	14:21			X								X		X											

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Run Number:** 080316CMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/3/2016 **End Date:** 8/3/2016

Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.0	14:30																												
CCB3	1.0	14:34			X								X		X															
LLCCVW1	1.0	14:37			X								X		X															
ZZZZZZ	1.0	14:41																												
ZZZZZZ	1.0	14:45																												
ZZZZZZ	1.0	14:50																												
ZZZZZZ	1.0	14:55																												
ZZZZZZ	5.0	14:59																												
ZZZZZZ	1.0	15:02																												
ZZZZZZ	1.0	15:06																												
ZZZZZZ	1.0	15:10																												
ZZZZZZ	1.0	15:14																												
CCV4	1.0	15:17			X								X		X															
ZZZZZZ	1.0	15:27																												
CCB4	1.0	15:30			X								X		X															
KQ1609039-01	1.0	15:34			X								X		X															
KQ1609039-02	1.0	15:37			X								X		X															
KQ1609039-02Dup	1.0	15:43			X								X		X															
ZZZZZZ	1.0	15:49																												
K1608325-014L	5.0	15:53			X								X		X															
K1608325-014A	1.0	15:56			X								X		X															
K1608344-013	1.0	16:00			X								X		X															
CCV5	1.0	16:04			X								X		X															
CCB5	1.0	16:13			X								X		X															
LLCCVW2	1.0	16:17			X								X		X															

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

- 14 -

ANALYSIS RUN LOG

Client: ARCADIS U.S., Inc. **Service Request:** K1608344

Project No.: 06261038.0001.00400 **Run Number:** 080516AMS03

Project Name: Closed Castner Firing Range

Instrument ID Number: K-ICP-MS-03 **Method:** MS

Start Date: 8/5/2016 **End Date:** 8/5/2016

Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
Cal. Blk	1.0	05:39																							X	
Cal. Stn	1.0	05:42																							X	
ICV1	1.0	05:44																							X	
CCV1	1.0	05:46																							X	
ICB1	1.0	05:48																							X	
CCB1	1.0	05:57																							X	
LLICVW1	1.0	05:59																							X	
ZZZZZZ	1.0	06:01																								
ICS-A1	1.0	06:05																							X	
ICS-AB1	1.0	06:08																							X	
KQ1609201-01	1.0	06:10																							X	
KQ1609201-02	1.0	06:12																							X	
KQ1609201-03	1.0	06:14																							X	
ZZZZZZ	1.0	06:16																								
K1608011-007L	5.0	06:19																							X	
K1608011-007A	1.0	06:21																							X	
CCV2	1.0	06:23																							X	
CCB2	1.0	06:25																							X	
ZZZZZZ	1.0	06:28																								
ZZZZZZ	1.0	06:30																								
ZZZZZZ	1.0	06:32																								
ZZZZZZ	1.0	06:34																								
K1608344-013	1.0	06:37																							X	
CCV3	1.0	06:39																							X	
CCB3	1.0	06:41																							X	
LLCCVW1	1.0	06:43																							X	

*** - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14**

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608344

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
Cal. Blk	Cal. Blk	1158	100		100		100		100		100		100	
Cal. Stn	Cal. Stn	1205	97		99		100		100		101		102	
ICV1	ICV1	1208	96		99		100		100		100		102	
CCV1	CCV1	1213	103		99		100		100		101		101	
ZZZZZZ	ZZZZZZ	1220												
ICB1	ICB1	1224	107		100		100		101		100		100	
CCB1	CCB1	1228	107		101		100		101		101		100	
LLICVW1	LLICVW1	1232	103		99		99		100		100		100	
ZZZZZZ	ZZZZZZ	1235												
ICS-A1	ICSA	1243	100		95		94		90		92		93	
ICS-AB1	ICSAB	1246	103		97		95		92		95		97	
ZZZZZZ	ZZZZZZ	1250												
ZZZZZZ	ZZZZZZ	1306												
ZZZZZZ	ZZZZZZ	1310												
ZZZZZZ	ZZZZZZ	1314												
ZZZZZZ	ZZZZZZ	1318												
ZZZZZZ	ZZZZZZ	1322												
ZZZZZZ	ZZZZZZ	1325												
ZZZZZZ	ZZZZZZ	1329												
ZZZZZZ	ZZZZZZ	1333												
CCV2	CCV2	1336	95		95		97		99		99		101	
CCB2	CCB2	1344	99		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1348												
ZZZZZZ	ZZZZZZ	1352												
ZZZZZZ	ZZZZZZ	1355												
ZZZZZZ	ZZZZZZ	1359												
ZZZZZZ	ZZZZZZ	1403												
ZZZZZZ	ZZZZZZ	1407												
ZZZZZZ	ZZZZZZ	1410												
ZZZZZZ	ZZZZZZ	1414												
ZZZZZZ	ZZZZZZ	1417												
CCV3	CCV3	1421	102		98		98		98		98		99	
ZZZZZZ	ZZZZZZ	1430												
CCB3	CCB3	1434	104		99		100		101		100		99	
LLCCVW1	LLCCVW1	1437	103		100		99		101		100		99	
ZZZZZZ	ZZZZZZ	1441												
ZZZZZZ	ZZZZZZ	1445												
ZZZZZZ	ZZZZZZ	1450												
ZZZZZZ	ZZZZZZ	1455												
ZZZZZZ	ZZZZZZ	1459												
ZZZZZZ	ZZZZZZ	1502												
ZZZZZZ	ZZZZZZ	1506												
ZZZZZZ	ZZZZZZ	1510												
ZZZZZZ	ZZZZZZ	1514												

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: NRAS No.: SDG NO.: K1608344

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/03/2016 End Date: 08/03/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Li_6	Q	Element Sc_45	Q	Element Ga_71	Q	Element Rh_103	Q	Element In_115	Q	Element Lu_175	Q
CCV4	CCV4	1517	98		98		98		99		99		100	
ZZZZZZ	ZZZZZZ	1527												
CCB4	CCB4	1530	106		101		101		101		100		99	
KQ1609039-01	Method Blank	1534	101		98		98		98		98		98	
KQ1609039-02	Lab Control	1537	103		98		98		99		99		99	
KQ1609039-02Dup	Lab Control	1543	103		99		98		99		98		97	
ZZZZZZ	ZZZZZZ	1549												
K1608325-014L	Batch QC2L	1553	101		99		97		99		98		98	
K1608325-014A	Batch QC2A	1556	105		98		98		98		98		98	
K1608344-013	EB072016	1600	105		98		97		98		97		97	
CCV5	CCV5	1604	103		99		99		99		99		100	
CCB5	CCB5	1613	106		102		100		100		99		97	
LLCCVW2	LLCCVW2	1617	107		101		101		101		100		98	

Metals

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: ALS Group USA, Corp. Contract: 06261038.0001.00400

Lab Code: ALSK Case No.: _____ NRAS No.: _____ SDG NO.: K1608344

ICP-MS Instrument ID: K-ICP-MS-03 Start Date: 08/05/2016 End Date: 08/05/2016

Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element Ga_71	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
Cal. Blk	Cal. Blk	0539	100											
Cal. Stn	Cal. Stn	0542	102											
ICV1	ICV1	0544	101											
CCV1	CCV1	0546	101											
ICB1	ICB1	0548	101											
CCB1	CCB1	0557	99											
LLICVW1	LLICVW1	0559	98											
ZZZZZZ	ZZZZZZ	0601												
ICS-A1	ICSA	0605	93											
ICS-AB1	ICSAB	0608	93											
KQ1609201-01	Method Blank	0610	94											
KQ1609201-02	Lab Control	0612	95											
KQ1609201-03	Duplicate Lab	0614	95											
ZZZZZZ	ZZZZZZ	0616												
K1608011-007L	Batch QC1L	0619	95											
K1608011-007A	Batch QC1A	0621	95											
CCV2	CCV2	0623	95											
CCB2	CCB2	0625	95											
ZZZZZZ	ZZZZZZ	0628												
ZZZZZZ	ZZZZZZ	0630												
ZZZZZZ	ZZZZZZ	0632												
ZZZZZZ	ZZZZZZ	0634												
K1608344-013	EB072016	0637	94											
CCV3	CCV3	0639	95											
CCB3	CCB3	0641	95											
LLCCVW1	LLCCVW1	0643	96											

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Total Solids

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

Benchsheet

Service Request #: K1608358, KQ1609085, K1608344 **Run #:** 508076
Test: TS **Balance ID:** K-Balance-16
Method: 160.3 Modified

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1608358-001	1.30	10.82	9.88	8.58	79.3	
	K1608358-002	1.30	11.44	9.90	8.60	75.2	
	K1608358-003	1.29	12.93	11.58	10.3	79.6	
	K1608358-004	1.29	11.55	11.19	9.90	85.7	
	K1608358-005	1.29	12.53	10.26	8.97	71.6	
	K1608358-006	1.29	11.87	12.42	11.1	93.8	
	K1608358-007	1.28	10.89	10.64	9.36	86.0	
	K1608358-008	1.29	14.29	11.31	10.0	70.1	
	K1608358-008DUP	1.29	14.02	11.39	10.1	72.0	3
	K1608358-009	1.30	10.61	11.64	10.3	97.5	
	K1608344-002	1.29	12.73	12.85	11.6	90.8	
	K1608344-003	1.29	12.09	12.29	11.0	91.0	
	K1608344-004	1.32	12.02	11.61	10.3	85.6	
	K1608344-005	1.29	13.47	13.28	12.0	89.0	
	K1608344-008	1.28	11.32	11.66	10.4	91.7	
	K1608344-009	1.29	10.97	11.33	10.0	91.5	
	K1608344-010	1.29	11.07	11.23	9.94	89.8	
	K1608344-011	1.29	13.01	12.97	11.7	89.8	
	K1608344-011DUP	1.30	13.84	13.79	12.5	90.2	<1
	K1608344-012	1.29	13.08	12.77	11.5	87.8	

	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
Oven1	K-OVEN 07	105	105	8/2/2016	12:48	8/3/2016	08:03	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	K-Balance-16	1.00, 100.01	1.00, 100.00	8/2/2016	12:28	8/2/2016	12:48
Calibration2	K-Balance-16	1.00, 100.01	1.00, 100.01	8/3/2016	08:25	8/3/2016	08:28

Comments: ZR Reviewed 8-3-16 L.J.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 268973 **Prep Workflow:** MetDigSICP **Status:** Prepped **Prep Date:** 08/19/2016 11:30
Team: Metals **Prep Method:** EPA 3050B **Current Step:** Digestion **Due Date:** 08/08/2016
Analyst: AURBAN **Rush/NPDES:** N/A **Hold Date:** 01/16/2017

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1609920-03	Method Blank		1.00 g	As Received.	100 mL			10% HNO3, 10% HCl
KQ1609920-04	Lab Control Sample		1.00 g	As Received.	100 mL	1 mL 2 mL 1 mL	174221 174411 174614	10% HNO3, 10% HCl
K1608344-002	FTBL-SS-B21-0-6-072016	.02	1.23 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608344-003	FTBL-SS-B22-0-6-072016	.02	1.21 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608344-004	FTBL-SS-B23-0-6-072016	.02	1.31 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608344-005	FTBL-SS-B24-0-6-072016	.02	1.27 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608344-008	FTBL-SS-B15-0-6-072016	.02	1.26 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608344-009	FTBL-SS-B16-0-6-072016	.02	1.22 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608344-010	FTBL-SS-B17-0-6-072016	.02	1.26 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608344-011	FTBL-SS-B18-0-6-072016	.02	1.15 g	As Received.	100 mL			10% HNO3, 10% HCl
K1608344-011: KQ1609920-01	Matrix Spike	.02	1.13 g	As Received.	100 mL	1 mL 2 mL 1 mL	174221 174411 174614	10% HNO3, 10% HCl
K1608344-011: KQ1609920-02	Duplicate Matrix Spike	.02	1.15 g	As Received.	100 mL	1 mL 2 mL 1 mL	174221 174411 174614	10% HNO3, 10% HCl
K1608344-012	FD072016	.02	1.30 g	As Received.	100 mL			10% HNO3, 10% HCl

13 Total Samples consisting of 9 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
K-MET SS1	Spike	174411	7/12/2017
K-MET SS3	Spike	174614	3/18/2017
K-MET SS4	Spike	174221	10/14/2016

Preparation Materials

Step	Name	ID
Digestion	Teflon Chips	69101
Digestion	K-MET HCL	87502
Digestion	K-MET HNO3	87968
Digestion	K-MET 100ml Centrifuge Tube	172987
Digestion	K-MET H2O2	175009

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-Balance-02	Date Checked	8/19/16	
Digestion	K-BlockDigester-07	Corrected Temperature	95.0	deg C
Digestion	K-BlockDigester-07	Observed Temperature	95.0	deg C
Digestion	K-BlockDigester-	Thermometer		NONE

Digestion	K-Block Digester-07	Correction Factor	0.0	deg C

	07	ID 1110798		
Digestion	K-Block Digester-07	Thermometer Location	22	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	19-AUG-16 11:30	19-AUG-16 13:30	AURBAN		N	

Comments

First reflux on at 1130 off at 1145. Second reflux on at 1150 off at 1250. HCl reflux on at 1315 off at 1330. SS5 used had lot #: met2-82-E

Review

Reviewed by: _____ Date: 8/19/16

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
	V	100*	1000ml	50	
	Zn	100*	1000ml	50	
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	.6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	50	500ml	100	
	Mo	50	500ml	100	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	

K-MET GFLCSW	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.

** Denotes 10.000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

Service Request # K1608344
Calibration 082416DMS04
QC in calibration 082416DMS04
QC Service Request # K1608344
STARLIMS run # 511491

CAL STD	MS20-83-G	ICSA STD	MS20-83-H
ICV STD	MS20-72-E	ICSAB STD	MS20-83-I
LLICV STD	MS20-72-F		
Internal STD	MS20-58-A		

6020 DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD limit?	X		
12. Spikes within DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?		X	
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?	X		
21. Cd Correction Applied?		X	
22. Was run prematurely stopped, If so why?		X	

Comments: LRSTD : 1000ppb
#12 needs rerun.

Primary Review by JDM Date 8/25/16
Secondary Review by [signature] Date 8/25/16

Data Review Form

Service Request #: **K1608344**
Instrument ID#: **K-ICP-MS-04**
DataFile Name: **R:\ICP\WIP\DATA\K-ICP-MS-04 (NexION)\082416d.txt**
RUNNO: **511491**

K1608344-011MS - Metals T
MS Recovery
6020A/Metals T - Sb-KED2 - Recovery: 38 Limits: 72 - 124
K1608344-011DMS - Metals T
DMS Recovery
6020A/Metals T - Sb-KED2 - Recovery: 38 Limits: 72 - 124

SD, PS, LCSW pass.

Analytical Method 6020A

Primary Approver: JDB 9/25/16
Secondary Approver: 9/25/16

Dataset Report

User Name: ALKLS.ALKLSXP373
Computer Name: ALKLSXP373
Dataset File Path: C:\NexIONData\DataSet\082416D\
Report Date/Time: Thursday, August 25, 2016 11:24:35

The Dataset

Sample ID	Date and Time	Read Type	Description	Batch ID	Samp. File Name
RINSE	17:08:50 Wed 24-Aug-16	Sample			C:\NexIONData\DataSet\082416D\RINSE.001
Blank	17:11:50 Wed 24-Aug-16	Blank			C:\NexIONData\DataSet\082416D\Blank.002
Standard 1	17:14:49 Wed 24-Aug-16	Standard #1			C:\NexIONData\DataSet\082416D\Standard 1
ICV	17:17:47 Wed 24-Aug-16	QC Std #1			C:\NexIONData\DataSet\082416D\ICV.004
CCV	17:20:47 Wed 24-Aug-16	QC Std #2			C:\NexIONData\DataSet\082416D\CCV.005
ICB	17:23:46 Wed 24-Aug-16	QC Std #3			C:\NexIONData\DataSet\082416D\ICB.006
CCB	17:26:46 Wed 24-Aug-16	QC Std #4			C:\NexIONData\DataSet\082416D\CCB.007
LLICVS	17:29:46 Wed 24-Aug-16	QC Std #5			C:\NexIONData\DataSet\082416D\LLICVS.00
ICSA	17:32:44 Wed 24-Aug-16	QC Std #7			C:\NexIONData\DataSet\082416D\ICSA.009
ICSAB	17:35:43 Wed 24-Aug-16	QC Std #8			C:\NexIONData\DataSet\082416D\ICSAB.010
KQ1609275-03	17:38:44 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\KQ160927
K1608325-001	17:41:43 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-002	17:44:42 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-003	17:47:41 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-004	17:50:40 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-005	17:53:39 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-006	17:56:38 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-007	17:59:37 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-008	18:02:36 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
CCV	18:05:38 Wed 24-Aug-16	QC Std #2			C:\NexIONData\DataSet\082416D\CCV.020
CCB	18:08:37 Wed 24-Aug-16	QC Std #4			C:\NexIONData\DataSet\082416D\CCB.021
K1608325-009	18:11:39 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-009L	18:14:38 Wed 24-Aug-16	Sample	25		C:\NexIONData\DataSet\082416D\K1608325-
1000ppb LR	18:17:38 Wed 24-Aug-16	Sample			C:\NexIONData\DataSet\082416D\1000ppb LI
RINSE	18:20:39 Wed 24-Aug-16	Sample			C:\NexIONData\DataSet\082416D\RINSE.025
K1608325-009A	18:23:39 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-009S	18:26:38 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-009SD	18:29:37 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
KQ1609275-04	18:32:36 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\KQ160927
MO STD	18:35:37 Wed 24-Aug-16	Sample			C:\NexIONData\DataSet\082416D\MO STD.0
K1608325-010	18:38:37 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
CCV	18:41:38 Wed 24-Aug-16	QC Std #2			C:\NexIONData\DataSet\082416D\CCV.032
CCB	18:44:37 Wed 24-Aug-16	QC Std #4			C:\NexIONData\DataSet\082416D\CCB.033
LLCCVS	18:47:37 Wed 24-Aug-16	QC Std #6			C:\NexIONData\DataSet\082416D\LLCCVS.0
K1608325-011	18:50:38 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-012	18:53:37 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
K1608325-013	18:56:36 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608325-
KQ1609274-01	18:59:35 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\KQ160927
K1608207-003	19:02:34 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608207-
K1608207-003L	19:05:33 Wed 24-Aug-16	Sample	25		C:\NexIONData\DataSet\082416D\K1608207-
K1608207-003A	19:08:32 Wed 24-Aug-16	Sample	5 +50ppb		C:\NexIONData\DataSet\082416D\K1608207-
K1608207-003S	19:11:32 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608207-
K1608207-003SD	19:14:31 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608207-
KQ1609274-02	19:17:30 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\KQ160927
CCV	19:20:30 Wed 24-Aug-16	QC Std #2			C:\NexIONData\DataSet\082416D\CCV.045
CCB	19:23:30 Wed 24-Aug-16	QC Std #4			C:\NexIONData\DataSet\082416D\CCB.046
MO STD	19:26:29 Wed 24-Aug-16	Sample			C:\NexIONData\DataSet\082416D\MO STD.0
K1608207-004	19:29:30 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608207-
K1608207-005	19:32:29 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608207-
K1608207-006	19:35:28 Wed 24-Aug-16	Sample	5		C:\NexIONData\DataSet\082416D\K1608207-

K1608207-010	19:38:27 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-011	19:41:26 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-012	19:44:25 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-013	19:47:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608207-014	19:50:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608207-
K1608210-003	19:53:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
CCV	19:56:24 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.057
CCB	19:59:24 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.058
LLCCVS	20:02:24 Wed 24-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.0
K1608210-004	20:05:25 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-005	20:08:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-006	20:11:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-010	20:14:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-011	20:17:21 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-012	20:20:20 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-013	20:23:19 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
K1608210-014	20:26:18 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608210-
KQ1609920-03	20:29:17 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160992
K1608344-002	20:32:16 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
CCV	20:35:18 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.070
CCB	20:38:17 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.071
K1608344-003	20:41:19 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-004	20:44:18 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-005	20:47:17 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-008	20:50:16 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-009	20:53:15 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-010	20:56:14 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011	20:59:13 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011L	21:02:12 Wed 24-Aug-16	Sample	25	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011A	21:05:11 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexIONData\DataSet\082416D\K1608344-
K1608344-011S	21:08:09 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
CCV	21:11:10 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.082
CCB	21:14:10 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.083
LLCCVS	21:17:09 Wed 24-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.0
K1608344-011SD	21:20:10 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
KQ1609920-04	21:23:09 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160992
MO STD	21:26:10 Wed 24-Aug-16	Sample		C:\NexIONData\DataSet\082416D\MO STD.0
K1608344-012	21:29:11 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608344-
KQ1609300-03	21:32:10 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160930
K1608209-004	21:35:09 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-005	21:38:10 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-006	21:41:08 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-007	21:44:08 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010	21:47:07 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
CCV	21:50:07 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.095
CCV	21:52:26 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.096
CCB	21:55:25 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.097
K1608209-010L	21:58:26 Wed 24-Aug-16	Sample	25	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010A	22:01:25 Wed 24-Aug-16	Sample	5 +50ppb	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010S	22:04:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-010SD	22:07:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
KQ1609300-04	22:10:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\KQ160930
MO STD	22:13:24 Wed 24-Aug-16	Sample		C:\NexIONData\DataSet\082416D\MO STD.1
K1608209-011	22:16:25 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-012	22:19:24 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-013	22:22:23 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
K1608209-014	22:25:22 Wed 24-Aug-16	Sample	5	C:\NexIONData\DataSet\082416D\K1608209-
CCV	22:28:23 Wed 24-Aug-16	QC Std #2		C:\NexIONData\DataSet\082416D\CCV.108
CCB	22:31:22 Wed 24-Aug-16	QC Std #4		C:\NexIONData\DataSet\082416D\CCB.109
LLCCVS	22:34:22 Wed 24-Aug-16	QC Std #6		C:\NexIONData\DataSet\082416D\LLCCVS.1

K1608209-005	09:25:53 Thu 25-Aug-16	Sample	5	C:\NexION Data\DataSet\082416D\K1608209-
CCV	09:28:54 Thu 25-Aug-16	QC Std #2		C:\NexION Data\DataSet\082416D\CCV.112
CCB	09:31:53 Thu 25-Aug-16	QC Std #4		C:\NexION Data\DataSet\082416D\CCB.113
LLCCVS	09:34:53 Thu 25-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.1
LLCCVS	09:37:11 Thu 25-Aug-16	QC Std #6		C:\NexION Data\DataSet\082416D\LLCCVS.1
LLCCVS	09:45:34 Thu 25-Aug-16	Sample		C:\NexION Data\DataSet\082416D\LLCCVS.1

SmartTune Wizard - Details

)ptimization Details

;martTune file: C:\NexIONData\Wizard\SmartTune\CAS SmartTune Full FAST.swz

)ptimization Status

;tart Time: 8/24/2016 10:24:21 AM

1ass Calibration and Resolution
Optimization Settings:
Method: C:\NexIONData\Method\CAS Tuning.mth.
MassCal File: C:\NexIONData\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.1 for Mass Cal. and 0.1 for Resolution
Peak height (%) for Res. Opt.: 5

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.704)
Target/Obtained mass (9.0122/9.075), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.700)
Target/Obtained mass (58.9332/58.925), Target/Obtained resolution (0.7/0.692)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.684)
Target/Obtained mass (139.905/139.925), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (207.977/207.975), Target/Obtained resolution (0.7/0.695)
Target/Obtained mass (208.98/208.975), Target/Obtained resolution (0.7/0.693)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.694)
Passed] Optimum value(s): N/A

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Wednesday, August 24, 2016 10:28:39
Sample Description:
Method File: C:\NexION Data\Method\CAS Daily Performance.mth
Dataset File: C:\NexION Data\Dataset\Default\Daily Performance Check.3538
MassCal File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Li	7.0	28977.1	28977.093	224.933	0.8	Standard
	Be	9.0	9171.5	9171.478	210.427	2.3	Standard
	Mg	24.0	27457.0	27457.035	520.912	1.9	Standard
	Co	58.9	29211.7	29211.711	545.363	1.9	Standard
	In	114.9	62607.9	62607.857	1090.759	1.7	Standard
	Pb	208.0	46834.1	46834.063	274.246	0.6	Standard
	Bi	209.0	37192.9	37192.893	507.538	1.4	Standard
	U	238.1	43013.5	43013.464	453.345	1.1	Standard
⌈	CeO	155.9	779.9	0.017	0.001	4.1	Standard
|>	Ce	139.9	45218.5	45218.523	413.726	0.9	Standard
⌊	Ce++	70.0	932.4	0.021	0.001	3.8	Standard
	Bkgd	220.0	0.0	0.000	0.000		Standard

Replicates

Repeat 1

Analyte	Mass	Meas. Intensity
Li	7	29031.469
Be	9	9361.733
Mg	24	27615.332
Co	59	28951.975
In	115	64276.276
Pb	208	47208.808
Bi	209	37692.994
U	238	42650.238
CeO	156	777.354
Ce	140	44997.422
Ce++	70	927.363
Bkgd	220	0.000

Repeat 2

Analyte	Mass	Meas. Intensity
Li	7	29141.025
Be	9	9108.236
Mg	24	26532.616
Co	59	28640.681
In	115	61917.224
Pb	208	46594.984
Bi	209	37748.474
U	238	42578.023
CeO	156	757.353
Ce	140	44627.598
Ce++	70	934.031
Bkgd	220	0.000

Repeat 3

Analyte	Mass	Meas. Intensity
Li	7	29227.201
Be	9	9417.770
Mg	24	27790.338
Co	59	30092.328
In	115	62519.840

Pb	208	47038.174
Bi	209	37085.407
U	238	43216.603
CeO	156	839.358
Ce	140	45696.302
Ce++	70	991.368
Bkgd	220	0.000

Repeat 4

Analyte	Mass	Meas. Intensity
Li	7	28730.862
Be	9	8927.455
Mg	24	27696.155
Co	59	29285.320
In	115	62902.849
Pb	208	46708.146
Bi	209	36791.315
U	238	42935.758
CeO	156	778.688
Ce	140	45420.759
Ce++	70	920.696
Bkgd	220	0.000

Repeat 5

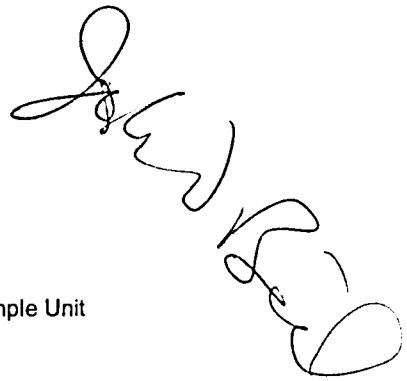
Analyte	Mass	Meas. Intensity
Li	7	28754.910
Be	9	9042.194
Mg	24	27650.734
Co	59	29088.251
In	115	61423.098
Pb	208	46620.206
Bi	209	36646.276
U	238	43686.696
CeO	156	746.686
Ce	140	45350.536
Ce++	70	888.694
Bkgd	220	0.000

Current Conditions File Data

Current Value	Description
0.87	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
16.00	Plasma Gas Flow
-9.50	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-14.50	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.87	DRC Mode NEB
-6.50	DRC Mode QRO
-1.50	DRC Mode CRO
-10.00	DRC Mode Cell Entrance/Exit Voltage
3.50	Cell Gas A
0.00	Cell Gas B
280.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-40.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

LABWORKS - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, August 24, 2016 17:11:50
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\Blank.002
User Name: JDB
Batch ID:



Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.0	32.8			ppb
|	Cu-KED3	65	13.0	35.3			ppb
|	Zn-KED3	66	7.3	41.7			ppb
⌊>	Ge-KED3	72	13511.1	1.9			ppb
⌈>	In-KED2	115	14199.0	2.3			ppb
|	Sb-KED2	121	42.7	39.0			ppb
⌊	Sb-KED2	123	27.6	18.6			ppb
⌈>	Lu-KED2	175	53932.4	3.5			ppb
⌊	Pb-KED2	208	22.0	9.1			ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, August 24, 2016 17:14:49
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\Standard 1.003
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16807.2	1.4	25.00000	1.4	ppb
|	Cu-KED3	65	8560.9	2.8	25.00000	1.3	ppb
|	Zn-KED3	66	1556.4	4.3	25.00000	4.6	ppb
⌊>	Ge-KED3	72	13608.8	2.5			ppb
⌈>	In-KED2	115	14381.4	0.7			ppb
|	Sb-KED2	121	9195.6	3.3	25.00000	4.0	ppb
⌊	Sb-KED2	123	7378.3	0.3	25.00000	1.0	ppb
⌈>	Lu-KED2	175	55017.8	3.0			ppb
⌊	Pb-KED2	208	137772.3	1.9	25.00000	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICV
Sample Date/Time: Wednesday, August 24, 2016 17:17:47
Sample Description:
Autosampler Position: 3
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICV.004
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8589.9	2.5	12.78956	2.9	ppb
|	Cu-KED3	65	4412.3	1.1	12.89705	1.0	ppb
|	Zn-KED3	66	1572.1	2.8	25.30139	1.6	ppb
⌊>	Ge-KED3	72	13577.8	1.6			ppb
⌈>	In-KED2	115	14638.3	3.0			ppb
|	Sb-KED2	121	9479.1	1.7	25.33934	4.7	ppb
⌊	Sb-KED2	123	7544.5	1.2	25.12285	1.8	ppb
⌈>	Lu-KED2	175	54101.6	1.2			ppb
⌊	Pb-KED2	208	139481.6	0.5	25.72290	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	102				
|	Cu-KED3	65	103				
|	Zn-KED3	66	101				
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		103			
|	Sb-KED2	121	101				
⌊	Sb-KED2	123	100				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	103				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 17:20:47
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.005
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16960.7	2.6	25.10516	2.6	ppb
|	Cu-KED3	65	8668.6	3.4	25.19456	3.0	ppb
|	Zn-KED3	66	1512.7	4.2	24.17422	4.2	ppb
⌊>	Ge-KED3	72	13673.2	1.1			ppb
⌈>	In-KED2	115	14452.9	1.7			ppb
|	Sb-KED2	121	9229.0	3.9	24.96286	3.6	ppb
⌊	Sb-KED2	123	7304.6	1.4	24.63300	2.9	ppb
⌈>	Lu-KED2	175	54586.1	1.1			ppb
⌊	Pb-KED2	208	137297.6	2.0	25.09856	3.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	101				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICB
Sample Date/Time: Wednesday, August 24, 2016 17:23:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICB.006
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22.0	32.8	-0.00014	8386.3	ppb
|	Cu-KED3	65	12.7	19.9	-0.00121	643.5	ppb
|	Zn-KED3	66	6.0	72.6	-0.02350	286.9	ppb
⌊>	Ge-KED3	72	13625.8	2.5			ppb
⌈>	In-KED2	115	14461.3	1.6			ppb
|	Sb-KED2	121	38.7	29.4	-0.01291	243.6	ppb
⌊	Sb-KED2	123	38.0	9.9	0.03369	39.4	ppb
⌈>	Lu-KED2	175	53483.9	1.0			ppb
⌊	Pb-KED2	208	13.3	37.7	-0.00159	57.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 17:26:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.007
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	22.7	36.7	0.00125	970.9	ppb
	Cu-KED3	65	8.7	52.0	-0.01257	105.8	ppb
	Zn-KED3	66	4.7	32.7	-0.04239	60.3	ppb
>	Ge-KED3	72	13371.3	1.4			ppb
>	In-KED2	115	14142.7	2.4			ppb
	Sb-KED2	121	31.3	14.7	-0.03076	48.0	ppb
	Sb-KED2	123	30.5	29.5	0.01001	280.9	ppb
>	Lu-KED2	175	53810.6	4.7			ppb
	Pb-KED2	208	16.0	21.7	-0.00111	53.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		99			
>	In-KED2	115		100			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		100			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLICVS
Sample Date/Time: Wednesday, August 24, 2016 17:29:46
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLICVS.008
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	153.3	19.6	0.19913	22.3	ppb
	Cu-KED3	65	72.7	7.6	0.17827	13.1	ppb
	Zn-KED3	66	67.7	6.0	0.99191	8.4	ppb
>	Ge-KED3	72	13385.6	3.2			ppb
>	In-KED2	115	14481.7	1.7			ppb
	Sb-KED2	121	89.3	14.9	0.12403	27.2	ppb
	Sb-KED2	123	59.0	10.8	0.10449	21.7	ppb
>	Lu-KED2	175	54129.1	2.2			ppb
	Pb-KED2	208	576.7	2.9	0.10230	4.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	100				
	Cu-KED3	65	89				
	Zn-KED3	66	99				
>	Ge-KED3	72		99			
>	In-KED2	115		102			
	Sb-KED2	121	124				
	Sb-KED2	123	104				
>	Lu-KED2	175		100			
	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: ICSA
Sample Date/Time: Wednesday, August 24, 2016 17:32:44
Sample Description:
Autosampler Position: 5
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICSA.009
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	332.7	3.7	0.55414	6.0	ppb
|	Cu-KED3	65	186.7	3.6	0.60816	1.7	ppb
|	Zn-KED3	66	16.3	24.7	0.19385	42.6	ppb
⌊>	Ge-KED3	72	11490.6	2.0			ppb
⌈>	In-KED2	115	12531.7	2.8			ppb
|	Sb-KED2	121	46.0	7.5	0.02611	35.9	ppb
⌊	Sb-KED2	123	35.0	19.6	0.04193	71.1	ppb
⌈>	Lu-KED2	175	50920.0	2.5			ppb
⌊	Pb-KED2	208	400.7	3.0	0.07445	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICSAB
Sample Date/Time: Wednesday, August 24, 2016 17:35:43
Sample Description:
Autosampler Position: 6
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\ICSAB.010
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26192.0	1.0	45.28134	1.4	ppb
|	Cu-KED3	65	13434.6	2.3	45.61223	2.5	ppb
|	Zn-KED3	66	1162.0	0.9	21.66620	2.3	ppb
⌊>	Ge-KED3	72	11715.5	2.2			ppb
⌈>	In-KED2	115	12651.5	2.6			ppb
|	Sb-KED2	121	45.3	28.7	0.02319	181.7	ppb
⌊	Sb-KED2	123	35.1	10.2	0.04096	38.2	ppb
⌈>	Lu-KED2	175	50557.3	1.4			ppb
⌊	Pb-KED2	208	394.7	8.2	0.07378	7.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	91				
|	Cu-KED3	65	91				
|	Zn-KED3	66	87				
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-03
Sample Date/Time: Wednesday, August 24, 2016 17:38:44
Sample Description: 5
Autosampler Position: 301
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-03.011
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	61.3	30.3	0.06850	47.1	ppb
|	Cu-KED3	65	33.3	27.9	0.06992	44.8	ppb
|	Zn-KED3	66	47.3	19.2	0.72670	23.0	ppb
⌊>	Ge-KED3	72	12296.0	2.1			ppb
⌈>	In-KED2	115	13169.9	3.8			ppb
|	Sb-KED2	121	16.0	21.7	-0.07051	11.9	ppb
⌊	Sb-KED2	123	13.2	33.6	-0.04629	31.7	ppb
⌈>	Lu-KED2	175	50708.9	4.0			ppb
⌊	Pb-KED2	208	412.7	13.3	0.07694	9.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		93			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-001
Sample Date/Time: Wednesday, August 24, 2016 17:41:43
Sample Description: 5
Autosampler Position: 302
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-001.012
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13757.3	1.6	22.92116	4.4	ppb
|	Cu-KED3	65	7001.0	2.0	22.89886	3.7	ppb
|	Zn-KED3	66	7941.5	1.0	143.43907	4.0	ppb
⌊>	Ge-KED3	72	12156.5	3.2			ppb
⌈>	In-KED2	115	12735.7	1.5			ppb
|	Sb-KED2	121	143.3	12.0	0.32411	16.8	ppb
⌊	Sb-KED2	123	123.1	12.3	0.37762	15.2	ppb
⌈>	Lu-KED2	175	52570.6	3.6			ppb
⌊	Pb-KED2	208	339169.4	1.9	64.43031	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		90			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-002
Sample Date/Time: Wednesday, August 24, 2016 17:44:42
Sample Description: 5
Autosampler Position: 303
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-002.013
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13016.6	2.5	22.77098	5.3	ppb
|	Cu-KED3	65	6751.9	2.3	23.18430	3.7	ppb
|	Zn-KED3	66	5180.9	1.5	98.20744	4.2	ppb
⌊>	Ge-KED3	72	11578.4	2.8			ppb
⌈>	In-KED2	115	12674.1	2.3			ppb
|	Sb-KED2	121	264.7	9.6	0.70356	13.8	ppb
⌊	Sb-KED2	123	222.5	8.1	0.76279	6.9	ppb
⌈>	Lu-KED2	175	52425.4	0.8			ppb
⌊	Pb-KED2	208	988623.6	1.3	188.16684	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		89			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-003
Sample Date/Time: Wednesday, August 24, 2016 17:47:41
Sample Description: 5
Autosampler Position: 304
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-003.014
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	37074.1	1.7	63.83479	2.0	ppb
	Cu-KED3	65	19023.0	0.7	64.32801	1.5	ppb
	Zn-KED3	66	6079.6	2.6	113.34517	2.0	ppb
>	Ge-KED3	72	11764.5	1.3			ppb
>	In-KED2	115	12862.4	0.8			ppb
	Sb-KED2	121	206.7	5.0	0.51311	6.3	ppb
	Sb-KED2	123	150.0	7.7	0.47561	10.0	ppb
>	Lu-KED2	175	52008.2	3.0			ppb
	Pb-KED2	208	662759.4	0.8	127.20702	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		87			
>	In-KED2	115		91			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		96			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-004
Sample Date/Time: Wednesday, August 24, 2016 17:50:40
Sample Description: 5
Autosampler Position: 305
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-004.015
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20673.6	2.3	37.60755	5.4	ppb
|	Cu-KED3	65	10600.9	1.0	37.86567	4.6	ppb
|	Zn-KED3	66	5676.8	0.6	111.84245	4.2	ppb
⌊>	Ge-KED3	72	11144.0	3.6			ppb
⌈>	In-KED2	115	12459.0	3.1			ppb
|	Sb-KED2	121	181.3	5.7	0.45406	8.6	ppb
⌊	Sb-KED2	123	157.3	8.5	0.52186	6.6	ppb
⌈>	Lu-KED2	175	51653.5	0.3			ppb
⌊	Pb-KED2	208	614372.4	0.8	118.67650	0.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		82			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-005
Sample Date/Time: Wednesday, August 24, 2016 17:53:39
Sample Description: 5
Autosampler Position: 306
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-005.016
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21096.9	0.7	37.17840	0.7	ppb
|	Cu-KED3	65	10701.0	2.6	37.03459	2.8	ppb
|	Zn-KED3	66	7196.1	0.3	137.40686	0.4	ppb
⌊>	Ge-KED3	72	11489.3	0.6			ppb
⌈>	In-KED2	115	12782.4	3.8			ppb
|	Sb-KED2	121	136.7	20.7	0.30233	29.4	ppb
⌊	Sb-KED2	123	102.7	15.2	0.29951	24.1	ppb
⌈>	Lu-KED2	175	51442.2	2.3			ppb
⌊	Pb-KED2	208	314204.3	1.1	60.96955	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		95			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-006
Sample Date/Time: Wednesday, August 24, 2016 17:56:38
Sample Description: 5
Autosampler Position: 307
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608325-006.017
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21272.5	2.5	37.41008	2.6	ppb
|	Cu-KED3	65	10863.5	1.7	37.52093	2.4	ppb
|	Zn-KED3	66	5860.9	1.4	111.65831	1.7	ppb
⌊>	Ge-KED3	72	11513.3	0.7			ppb
⌈>	In-KED2	115	12420.1	1.0			ppb
|	Sb-KED2	121	197.3	6.1	0.50611	7.9	ppb
⌊	Sb-KED2	123	148.1	12.3	0.48789	13.4	ppb
⌈>	Lu-KED2	175	51833.9	2.3			ppb
⌊	Pb-KED2	208	724076.6	0.8	139.41677	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		87			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		96			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-007
Sample Date/Time: Wednesday, August 24, 2016 17:59:37
Sample Description: 5
Autosampler Position: 308
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-007.018
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10852.1	1.5	16.07406	2.7	ppb
|	Cu-KED3	65	5567.8	2.2	16.20625	6.0	ppb
|	Zn-KED3	66	4650.8	3.2	74.63535	0.6	ppb
⌊>	Ge-KED3	72	13662.2	3.7			ppb
⌈>	In-KED2	115	14062.1	1.1			ppb
|	Sb-KED2	121	264.7	5.7	0.62158	8.1	ppb
⌊	Sb-KED2	123	210.7	11.9	0.63777	13.3	ppb
⌈>	Lu-KED2	175	57306.8	2.3			ppb
⌊	Pb-KED2	208	539086.9	1.0	93.89746	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-008
Sample Date/Time: Wednesday, August 24, 2016 18:02:36
Sample Description: 5
Autosampler Position: 309
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-008.019
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17839.1	2.7	26.20102	3.2	ppb
|	Cu-KED3	65	9274.7	1.9	26.74852	2.2	ppb
|	Zn-KED3	66	4843.8	1.3	77.07091	2.9	ppb
⌊>	Ge-KED3	72	13783.3	2.0			ppb
⌈>	In-KED2	115	14057.2	1.9			ppb
|	Sb-KED2	121	582.0	0.7	1.50842	1.5	ppb
⌊	Sb-KED2	123	444.3	6.2	1.45116	6.6	ppb
⌈>	Lu-KED2	175	58223.4	2.2			ppb
⌊	Pb-KED2	208	1459810.9	2.2	250.17360	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:05:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.020
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17135.6	1.7	24.98285	3.5	ppb
|	Cu-KED3	65	8893.8	2.2	25.46074	3.4	ppb
|	Zn-KED3	66	1576.1	3.8	24.84199	7.9	ppb
⌊>	Ge-KED3	72	13893.1	4.0			ppb
⌈>	In-KED2	115	14877.2	4.0			ppb
|	Sb-KED2	121	9245.7	0.8	24.31655	4.1	ppb
⌊	Sb-KED2	123	7555.7	3.9	24.78177	6.6	ppb
⌈>	Lu-KED2	175	55457.5	2.6			ppb
⌊	Pb-KED2	208	137693.1	1.3	24.78655	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	102				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121	97				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:08:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.021
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	14.0	0.0	-0.01249	3.0	ppb
	Cu-KED3	65	11.0	48.1	-0.00683	212.3	ppb
	Zn-KED3	66	3.0	88.2	-0.07146	59.4	ppb
>	Ge-KED3	72	13835.4	1.9			ppb
>	In-KED2	115	14472.1	1.4			ppb
	Sb-KED2	121	31.3	32.1	-0.03275	86.5	ppb
	Sb-KED2	123	34.1	27.5	0.02006	150.2	ppb
>	Lu-KED2	175	54671.8	1.2			ppb
	Pb-KED2	208	36.7	69.5	0.00259	175.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		102			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		101			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009
Sample Date/Time: Wednesday, August 24, 2016 18:11:39
Sample Description: 5
Autosampler Position: 310
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009.022
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11933.7	1.9	20.14639	2.4	ppb
|	Cu-KED3	65	6132.0	2.8	20.32837	3.5	ppb
|	Zn-KED3	66	5327.7	2.3	97.49563	2.9	ppb
⌊>	Ge-KED3	72	11985.4	0.7			ppb
⌈>	In-KED2	115	13108.1	2.8			ppb
|	Sb-KED2	121	118.7	10.8	0.23844	20.1	ppb
⌊	Sb-KED2	123	103.7	10.5	0.29124	10.1	ppb
⌈>	Lu-KED2	175	54162.2	0.8			ppb
⌊	Pb-KED2	208	274508.7	0.6	50.56962	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		89			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009L
Sample Date/Time: Wednesday, August 24, 2016 18:14:38
Sample Description: 25
Autosampler Position: 311
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009L.023
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2746.3	2.8	4.29828	2.7	ppb
|	Cu-KED3	65	1408.7	5.7	4.32558	5.8	ppb
|	Zn-KED3	66	1215.1	2.8	20.64461	2.8	ppb
⌊>	Ge-KED3	72	12848.8	0.3			ppb
⌈>	In-KED2	115	13843.8	3.1			ppb
|	Sb-KED2	121	55.3	47.2	0.03917	187.1	ppb
⌊	Sb-KED2	123	37.4	10.2	0.03755	47.4	ppb
⌈>	Lu-KED2	175	53517.1	2.7			ppb
⌊	Pb-KED2	208	59031.8	1.1	11.00953	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: 1000ppb LR
Sample Date/Time: Wednesday, August 24, 2016 18:17:38
Sample Description:
Autosampler Position: 124
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\1000ppb LR.024
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	648384.3	0.2	985.81018	2.0	ppb
	Cu-KED3	65	330737.8	0.4	987.68136	2.3	ppb
	Zn-KED3	66	59287.1	1.0	976.46035	1.1	ppb
>	Ge-KED3	72	13331.6	1.9			ppb
>	In-KED2	115	13975.8	2.9			ppb
	Sb-KED2	121	353649.3	1.6	994.41063	3.8	ppb
	Sb-KED2	123	282852.1	1.0	990.18826	2.0	ppb
>	Lu-KED2	175	53911.2	1.8			ppb
	Pb-KED2	208	5431439.9	0.6	1005.54435	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		99			
>	In-KED2	115		98			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		100			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: RINSE
Sample Date/Time: Wednesday, August 24, 2016 18:20:39
Sample Description:
Autosampler Position: 123
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\RINSE.025
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41.3	14.8	0.02882	30.6	ppb
|	Cu-KED3	65	25.7	12.5	0.03717	26.2	ppb
|	Zn-KED3	66	5.3	21.7	-0.03280	55.1	ppb
⌊>	Ge-KED3	72	13542.1	0.9			ppb
⌈>	In-KED2	115	14338.2	1.5			ppb
|	Sb-KED2	121	232.7	13.2	0.51860	14.5	ppb
⌊	Sb-KED2	123	187.3	5.5	0.54366	4.9	ppb
⌈>	Lu-KED2	175	53342.4	1.0			ppb
⌊	Pb-KED2	208	95.3	7.9	0.01376	9.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009A
Sample Date/Time: Wednesday, August 24, 2016 18:23:39
Sample Description: 5 +50ppb
Autosampler Position: 312
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009A.026
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	40409.1	1.7	67.01339	5.5	ppb
|	Cu-KED3	65	20276.0	1.2	66.04478	5.7	ppb
|	Zn-KED3	66	7901.2	2.8	142.01360	7.4	ppb
⌊>	Ge-KED3	72	12234.2	4.8			ppb
⌈>	In-KED2	115	12949.2	2.6			ppb
|	Sb-KED2	121	16770.5	0.7	50.76768	2.2	ppb
⌊	Sb-KED2	123	13440.7	1.8	50.68347	1.6	ppb
⌈>	Lu-KED2	175	54912.7	1.7			ppb
⌊	Pb-KED2	208	519477.1	0.7	94.41346	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		102			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009S
Sample Date/Time: Wednesday, August 24, 2016 18:26:38
Sample Description: 5
Autosampler Position: 313
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009S.027
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	65584.9	0.8	112.13773	1.2	ppb
|	Cu-KED3	65	33389.6	1.2	112.11907	1.1	ppb
|	Zn-KED3	66	15616.9	0.7	289.28340	1.3	ppb
⌊>	Ge-KED3	72	11849.2	0.7			ppb
⌈>	In-KED2	115	12960.3	0.8			ppb
|	Sb-KED2	121	33177.2	1.3	100.42942	1.5	ppb
⌊	Sb-KED2	123	26765.4	1.7	100.92564	2.2	ppb
⌈>	Lu-KED2	175	54560.4	2.0			ppb
⌊	Pb-KED2	208	1229425.3	0.7	224.90150	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		88			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-009SD
Sample Date/Time: Wednesday, August 24, 2016 18:29:37
Sample Description: 5
Autosampler Position: 314
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-009SD.028
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66172.2	0.2	114.45741	2.3	ppb
|	Cu-KED3	65	34069.6	1.1	115.75200	3.2	ppb
|	Zn-KED3	66	15807.7	1.2	296.24495	3.0	ppb
⌊>	Ge-KED3	72	11716.5	2.2			ppb
⌈>	In-KED2	115	12999.1	3.3			ppb
|	Sb-KED2	121	33638.9	0.9	101.57730	2.6	ppb
⌊	Sb-KED2	123	26790.3	2.4	100.72949	1.1	ppb
⌈>	Lu-KED2	175	55716.5	2.2			ppb
⌊	Pb-KED2	208	1258981.6	0.6	225.53414	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609275-04
Sample Date/Time: Wednesday, August 24, 2016 18:32:36
Sample Description: 5
Autosampler Position: 315
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609275-04.029
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	61075.7	3.3	100.43228	6.8	ppb
|	Cu-KED3	65	31670.8	3.0	102.28434	6.7	ppb
|	Zn-KED3	66	11449.9	3.2	203.96576	6.8	ppb
⌊>	Ge-KED3	72	12340.3	3.9			ppb
⌈>	In-KED2	115	13527.4	3.5			ppb
|	Sb-KED2	121	69023.1	2.8	200.40854	3.7	ppb
⌊	Sb-KED2	123	55565.4	2.6	200.86105	1.2	ppb
⌈>	Lu-KED2	175	52621.8	2.6			ppb
⌊	Pb-KED2	208	1037460.7	1.3	196.79045	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		91			
⌈>	In-KED2	115		95			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 18:35:37
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.030
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27.3	40.3	0.00900	195.2	ppb
|	Cu-KED3	65	18.3	50.7	0.01675	165.5	ppb
|	Zn-KED3	66	9.3	37.6	0.03604	167.3	ppb
⌊>	Ge-KED3	72	13239.1	1.4			ppb
⌈>	In-KED2	115	13908.3	1.9			ppb
|	Sb-KED2	121	70.0	37.5	0.07925	90.3	ppb
⌊	Sb-KED2	123	51.9	7.0	0.08756	17.6	ppb
⌈>	Lu-KED2	175	53323.3	1.0			ppb
⌊	Pb-KED2	208	81.3	56.2	0.01120	77.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-010
Sample Date/Time: Wednesday, August 24, 2016 18:38:37
Sample Description: 5
Autosampler Position: 316
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-010.031
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	9698.0	0.8	16.79328	2.3	ppb
	Cu-KED3	65	5084.2	2.2	17.28809	3.3	ppb
	Zn-KED3	66	5760.2	1.9	108.18915	3.8	ppb
>	Ge-KED3	72	11685.1	3.0			ppb
>	In-KED2	115	12868.9	1.0			ppb
	Sb-KED2	121	107.3	11.4	0.20975	18.7	ppb
	Sb-KED2	123	81.4	15.7	0.21414	21.2	ppb
>	Lu-KED2	175	53831.3	2.1			ppb
	Pb-KED2	208	185656.8	1.2	34.42119	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		86			
>	In-KED2	115		91			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		100			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 18:41:38
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.032
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16089.7	1.1	24.71959	0.9	ppb
|	Cu-KED3	65	8286.4	2.4	24.99570	1.0	ppb
|	Zn-KED3	66	1495.7	1.2	24.81916	3.0	ppb
⌊>	Ge-KED3	72	13174.1	1.9			ppb
⌈>	In-KED2	115	13475.5	1.6			ppb
|	Sb-KED2	121	8777.4	1.5	25.47231	2.9	ppb
⌊	Sb-KED2	123	7030.6	1.5	25.43173	3.0	ppb
⌈>	Lu-KED2	175	50414.2	1.9			ppb
⌊	Pb-KED2	208	132601.6	0.6	26.24905	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	100				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		95			
|	Sb-KED2	121	102				
⌊	Sb-KED2	123	102				
⌈>	Lu-KED2	175		93			
⌊	Pb-KED2	208	105				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 18:44:37
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.033
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	19.3	6.0	-0.00325	55.2	ppb
	Cu-KED3	65	9.7	11.9	-0.00910	36.4	ppb
	Zn-KED3	66	4.7	32.7	-0.04127	62.9	ppb
>	Ge-KED3	72	13171.7	0.7			ppb
>	In-KED2	115	14028.9	2.1			ppb
	Sb-KED2	121	46.0	45.4	0.01047	547.5	ppb
	Sb-KED2	123	41.2	15.7	0.04839	41.0	ppb
>	Lu-KED2	175	54678.5	2.9			ppb
	Pb-KED2	208	18.0	29.4	-0.00079	120.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		97			
>	In-KED2	115		99			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		101			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 18:47:37
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.034
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	164.7	11.5	0.21089	14.6	ppb
|	Cu-KED3	65	78.7	7.4	0.19056	11.0	ppb
|	Zn-KED3	66	60.3	5.8	0.84822	6.9	ppb
⌊>	Ge-KED3	72	13696.6	1.9			ppb
⌈>	In-KED2	115	14455.7	2.5			ppb
|	Sb-KED2	121	103.3	19.0	0.16216	29.2	ppb
⌊	Sb-KED2	123	66.2	14.5	0.12906	23.9	ppb
⌈>	Lu-KED2	175	55465.8	1.9			ppb
⌊	Pb-KED2	208	621.3	2.9	0.10770	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	105				
|	Cu-KED3	65	95				
|	Zn-KED3	66	85				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121	162				
⌊	Sb-KED2	123	129				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	108				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: K1608325-011
Sample Date/Time: Wednesday, August 24, 2016 18:50:38
Sample Description: 5
Autosampler Position: 317
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-011.035
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	54822.3	1.3	80.74822	1.8	ppb
	Cu-KED3	65	27637.7	1.5	79.94694	1.9	ppb
	Zn-KED3	66	7522.6	2.1	119.98855	2.7	ppb
>	Ge-KED3	72	13754.3	1.3			ppb
>	In-KED2	115	14517.5	4.1			ppb
	Sb-KED2	121	3769.8	1.0	10.09079	3.6	ppb
	Sb-KED2	123	3063.5	1.3	10.23489	3.1	ppb
>	Lu-KED2	175	59191.7	1.9			ppb
	~~Pb-KED2~~	~~208~~	~~17281705.6~~	1.8	~~2914.29614~~	~~3.2~~	~~ppb~~ Over Linear Range

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		102			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		110			
	Pb-KED2	208					

JS 8/25/16

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-012
Sample Date/Time: Wednesday, August 24, 2016 18:53:37
Sample Description: 5
Autosampler Position: 318
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-012.036
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22589.2	2.2	33.48770	1.4	ppb
|	Cu-KED3	65	11756.8	1.0	34.22973	0.6	ppb
|	Zn-KED3	66	5648.8	0.7	90.71860	1.7	ppb
⌊>	Ge-KED3	72	13655.9	1.4			ppb
⌈>	In-KED2	115	14287.6	2.4			ppb
|	Sb-KED2	121	338.7	9.0	0.81325	10.6	ppb
⌊	Sb-KED2	123	261.4	2.7	0.80057	5.4	ppb
⌈>	Lu-KED2	175	58186.6	0.4			ppb
⌊	Pb-KED2	208	924924.8	1.8	158.60167	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-013
Sample Date/Time: Wednesday, August 24, 2016 18:56:36
Sample Description: 5
Autosampler Position: 319
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608325-013.037
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41003.4	2.0	59.51113	1.9	ppb
|	Cu-KED3	65	21144.6	1.7	60.26971	1.7	ppb
|	Zn-KED3	66	7660.1	1.9	120.40587	1.9	ppb
⌊>	Ge-KED3	72	13954.8	0.0			ppb
⌈>	In-KED2	115	14325.4	2.8			ppb
|	Sb-KED2	121	409.3	3.7	1.00495	5.5	ppb
⌊	Sb-KED2	123	319.9	4.4	0.99729	3.8	ppb
⌈>	Lu-KED2	175	57653.5	3.8			ppb
⌊	Pb-KED2	208	2271766.3	1.6	393.66609	5.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-01
Sample Date/Time: Wednesday, August 24, 2016 18:59:35
Sample Description: 5
Autosampler Position: 320
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609274-01.038
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43.3	57.7	0.03308	122.6	ppb
|	Cu-KED3	65	15.0	52.9	0.00665	382.5	ppb
|	Zn-KED3	66	30.3	33.3	0.37974	48.8	ppb
⌊>	Ge-KED3	72	13463.3	3.6			ppb
⌈>	In-KED2	115	14766.0	0.5			ppb
|	Sb-KED2	121	20.0	30.0	-0.06477	25.0	ppb
⌊	Sb-KED2	123	12.7	16.2	-0.05278	13.0	ppb
⌈>	Lu-KED2	175	55555.5	1.6			ppb
⌊	Pb-KED2	208	311.3	19.9	0.05187	21.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003
Sample Date/Time: Wednesday, August 24, 2016 19:02:34
Sample Description: 5
Autosampler Position: 321
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003.039
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28814.4	2.1	41.50209	1.6	ppb
|	Cu-KED3	65	14819.0	0.3	41.93087	3.0	ppb
|	Zn-KED3	66	8934.1	0.9	139.47166	3.3	ppb
⌊>	Ge-KED3	72	14061.6	2.9			ppb
⌈>	In-KED2	115	14689.3	1.3			ppb
|	Sb-KED2	121	205.3	11.9	0.43063	13.9	ppb
⌊	Sb-KED2	123	164.6	6.4	0.45335	9.3	ppb
⌈>	Lu-KED2	175	57238.9	3.8			ppb
⌊	Pb-KED2	208	433908.8	2.3	75.73415	5.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003L
Sample Date/Time: Wednesday, August 24, 2016 19:05:33
Sample Description: 25
Autosampler Position: 322
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003L.040
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	6288.1	2.0	8.76190	3.4	ppb
|	Cu-KED3	65	3266.0	1.3	8.93159	1.4	ppb
|	Zn-KED3	66	1912.1	1.8	28.85805	3.3	ppb
⌊>	Ge-KED3	72	14494.7	2.2			ppb
⌈>	In-KED2	115	15519.0	0.6			ppb
|	Sb-KED2	121	60.0	10.0	0.03384	45.2	ppb
⌊	Sb-KED2	123	60.4	10.9	0.09519	20.6	ppb
⌈>	Lu-KED2	175	57681.9	1.8			ppb
⌊	Pb-KED2	208	91301.6	0.9	15.79201	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003A
Sample Date/Time: Wednesday, August 24, 2016 19:08:32
Sample Description: 5 +50ppb
Autosampler Position: 323
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003A.041
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	62226.6	0.4	89.95883	2.0	ppb
|	Cu-KED3	65	32106.4	1.7	91.14252	1.3	ppb
|	Zn-KED3	66	12167.2	2.4	190.48179	1.2	ppb
⌊>	Ge-KED3	72	14015.5	1.6			ppb
⌈>	In-KED2	115	14573.8	2.7			ppb
|	Sb-KED2	121	19122.8	1.9	51.43981	3.0	ppb
⌊	Sb-KED2	123	15311.4	0.1	51.31767	2.8	ppb
⌈>	Lu-KED2	175	58962.8	1.4			ppb
⌊	Pb-KED2	208	707622.0	1.1	119.76963	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003S
Sample Date/Time: Wednesday, August 24, 2016 19:11:32
Sample Description: 5
Autosampler Position: 324
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-003S.042
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	96007.5	0.1	138.82164	1.4	ppb
|	Cu-KED3	65	49006.2	0.3	139.17446	1.8	ppb
|	Zn-KED3	66	20364.2	0.9	319.02374	2.3	ppb
⌊>	Ge-KED3	72	14013.5	1.5			ppb
⌈>	In-KED2	115	14800.8	1.8			ppb
|	Sb-KED2	121	28194.5	0.5	74.71318	1.5	ppb
⌊	Sb-KED2	123	22952.5	0.5	75.76965	1.7	ppb
⌈>	Lu-KED2	175	59182.4	1.5			ppb
⌊	Pb-KED2	208	1516079.5	1.5	255.67736	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-003SD
Sample Date/Time: Wednesday, August 24, 2016 19:14:31
Sample Description: 5
Autosampler Position: 325
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608207-003SD.043
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	92556.9	0.8	133.49609	0.6	ppb
|	Cu-KED3	65	47803.9	1.7	135.41397	1.6	ppb
|	Zn-KED3	66	20692.3	1.3	323.33310	1.4	ppb
⌊>	Ge-KED3	72	14046.9	0.6			ppb
⌈>	In-KED2	115	14549.2	2.4			ppb
|	Sb-KED2	121	28670.1	2.0	77.28767	1.5	ppb
⌊	Sb-KED2	123	22927.2	1.9	76.98748	0.6	ppb
⌈>	Lu-KED2	175	59706.6	3.3			ppb
⌊	Pb-KED2	208	1436600.4	0.8	240.26528	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609274-02
Sample Date/Time: Wednesday, August 24, 2016 19:17:30
Sample Description: 5
Autosampler Position: 326
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609274-02.044
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	70748.1	0.2	96.82903	1.2	ppb
	Cu-KED3	65	36111.6	1.7	97.07193	2.4	ppb
	Zn-KED3	66	12892.5	2.6	191.12099	2.6	ppb
>	Ge-KED3	72	14802.7	1.0			ppb
>	In-KED2	115	15212.7	1.3			ppb
	Sb-KED2	121	74789.3	0.9	192.98203	0.7	ppb
	Sb-KED2	123	60683.4	0.5	195.04042	1.7	ppb
>	Lu-KED2	175	58837.9	1.6			ppb
	Pb-KED2	208	1124414.0	1.0	190.73309	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		110			
>	In-KED2	115		107			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		109			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:20:30
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.045
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18383.8	2.5	25.27169	2.7	ppb
|	Cu-KED3	65	9437.8	1.7	25.47483	1.6	ppb
|	Zn-KED3	66	1655.8	1.2	24.57229	0.4	ppb
⌊>	Ge-KED3	72	14724.3	1.5			ppb
⌈>	In-KED2	115	15360.0	2.7			ppb
|	Sb-KED2	121	9712.0	2.1	24.73703	4.8	ppb
⌊	Sb-KED2	123	7787.7	2.0	24.70856	1.7	ppb
⌈>	Lu-KED2	175	57876.7	0.3			ppb
⌊	Pb-KED2	208	145007.0	1.6	24.99489	1.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:23:30
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.046
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	13.3	37.7	-0.01453	47.2	ppb
	Cu-KED3	65	6.7	22.9	-0.02015	20.1	ppb
	Zn-KED3	66	5.7	27.0	-0.03408	65.7	ppb
>	Ge-KED3	72	14603.5	0.7			ppb
>	In-KED2	115	15432.7	2.2			ppb
	Sb-KED2	121	40.7	45.7	-0.01501	302.0	ppb
	Sb-KED2	123	39.5	14.4	0.03020	54.9	ppb
>	Lu-KED2	175	57083.2	3.2			ppb
	Pb-KED2	208	24.7	33.8	0.00027	595.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		108			
>	In-KED2	115		109			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		106			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 19:26:29
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.047
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45.3	33.7	0.03175	68.3	ppb
|	Cu-KED3	65	21.3	21.1	0.02158	58.8	ppb
|	Zn-KED3	66	12.3	9.4	0.07171	24.1	ppb
⌊>	Ge-KED3	72	14183.7	0.4			ppb
⌈>	In-KED2	115	15440.8	1.1			ppb
|	Sb-KED2	121	45.3	43.5	-0.00303	1610.4	ppb
⌊	Sb-KED2	123	37.5	10.7	0.02371	49.6	ppb
⌈>	Lu-KED2	175	58055.4	0.6			ppb
⌊	Pb-KED2	208	42.7	31.9	0.00326	71.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		109			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-004
Sample Date/Time: Wednesday, August 24, 2016 19:29:30
Sample Description: 5
Autosampler Position: 327
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-004.048
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	38324.0	2.2	55.70299	1.7	ppb
|	Cu-KED3	65	19463.9	0.5	55.56223	0.7	ppb
|	Zn-KED3	66	8024.6	0.9	126.33502	0.7	ppb
⌊>	Ge-KED3	72	13933.5	0.5			ppb
⌈>	In-KED2	115	14781.9	2.2			ppb
|	Sb-KED2	121	170.7	0.7	0.33556	2.1	ppb
⌊	Sb-KED2	123	146.1	11.5	0.38802	12.2	ppb
⌈>	Lu-KED2	175	57759.3	3.0			ppb
⌊	Pb-KED2	208	623994.7	0.4	107.85250	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		104			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-005
Sample Date/Time: Wednesday, August 24, 2016 19:32:29
Sample Description: 5
Autosampler Position: 328
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-005.049
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51880.7	1.5	75.41537	1.2	ppb
|	Cu-KED3	65	26494.9	1.2	75.63921	0.9	ppb
|	Zn-KED3	66	10611.6	0.9	167.09160	0.9	ppb
⌊>	Ge-KED3	72	13934.5	0.4			ppb
⌈>	In-KED2	115	15004.5	2.2			ppb
|	Sb-KED2	121	232.7	2.2	0.49126	4.3	ppb
⌊	Sb-KED2	123	187.0	1.1	0.51469	3.6	ppb
⌈>	Lu-KED2	175	58713.1	2.4			ppb
⌊	Pb-KED2	208	728798.5	1.7	123.89703	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-006
Sample Date/Time: Wednesday, August 24, 2016 19:35:28
Sample Description: 5
Autosampler Position: 329
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-006.050
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	29405.6	1.2	42.95843	0.9	ppb
|	Cu-KED3	65	14882.1	0.9	42.69577	0.6	ppb
|	Zn-KED3	66	5575.1	2.0	88.19339	1.6	ppb
⌊>	Ge-KED3	72	13860.7	0.4			ppb
⌈>	In-KED2	115	14677.0	3.6			ppb
|	Sb-KED2	121	158.7	6.9	0.30646	7.4	ppb
⌊	Sb-KED2	123	126.1	4.0	0.32579	7.8	ppb
⌈>	Lu-KED2	175	57848.1	5.2			ppb
⌊	Pb-KED2	208	330871.8	1.4	57.19315	6.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-010
Sample Date/Time: Wednesday, August 24, 2016 19:38:27
Sample Description: 5
Autosampler Position: 330
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608207-010.051
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	51983.8	3.1	90.56508	2.2	ppb
|	Cu-KED3	65	26918.0	0.7	92.11651	0.6	ppb
|	Zn-KED3	66	7764.8	1.2	146.52507	0.8	ppb
⌊>	Ge-KED3	72	11626.4	1.2			ppb
⌈>	In-KED2	115	13035.0	0.3			ppb
|	Sb-KED2	121	670.0	5.7	1.90100	6.3	ppb
⌊	Sb-KED2	123	528.7	1.4	1.88879	1.7	ppb
⌈>	Lu-KED2	175	53206.2	1.0			ppb
⌊	Pb-KED2	208	1462819.1	1.7	274.36736	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-011
Sample Date/Time: Wednesday, August 24, 2016 19:41:26
Sample Description: 5
Autosampler Position: 331
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-011.052
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	45899.0	0.8	66.48188	2.2	ppb
|	Cu-KED3	65	23565.4	2.1	67.03101	2.7	ppb
|	Zn-KED3	66	8274.4	0.4	129.79045	1.4	ppb
⌊>	Ge-KED3	72	13986.8	1.4			ppb
⌈>	In-KED2	115	14860.9	2.0			ppb
|	Sb-KED2	121	292.7	4.1	0.65563	5.0	ppb
⌊	Sb-KED2	123	242.4	6.2	0.70362	9.4	ppb
⌈>	Lu-KED2	175	58682.7	2.6			ppb
⌊	Pb-KED2	208	965939.5	0.8	164.33001	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-012
Sample Date/Time: Wednesday, August 24, 2016 19:44:25
Sample Description: 5
Autosampler Position: 332
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-012.053
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25665.0	2.0	37.12008	0.8	ppb
|	Cu-KED3	65	13310.2	1.4	37.82131	3.4	ppb
|	Zn-KED3	66	8906.8	0.2	139.61537	1.9	ppb
⌊>	Ge-KED3	72	13999.2	2.1			ppb
⌈>	In-KED2	115	14424.7	2.7			ppb
|	Sb-KED2	121	186.0	12.2	0.38957	18.6	ppb
⌊	Sb-KED2	123	154.5	7.0	0.42957	11.6	ppb
⌈>	Lu-KED2	175	56911.2	2.5			ppb
⌊	Pb-KED2	208	406149.2	0.3	71.23355	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-013
Sample Date/Time: Wednesday, August 24, 2016 19:47:24
Sample Description: 5
Autosampler Position: 333
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-013.054
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	60574.8	0.9	86.47060	0.7	ppb
|	Cu-KED3	65	31329.7	1.3	87.85406	2.8	ppb
|	Zn-KED3	66	9541.5	2.4	147.56608	4.0	ppb
⌊>	Ge-KED3	72	14191.7	1.6			ppb
⌈>	In-KED2	115	14977.8	0.6			ppb
|	Sb-KED2	121	1812.8	3.2	4.63512	2.7	ppb
⌊	Sb-KED2	123	1476.5	1.4	4.72678	1.4	ppb
⌈>	Lu-KED2	175	58036.3	1.4			ppb
⌊	Pb-KED2	208	4205697.3	0.5	723.19926	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608207-014
Sample Date/Time: Wednesday, August 24, 2016 19:50:23
Sample Description: 5
Autosampler Position: 334
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608207-014.055
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15787.4	1.0	23.13021	1.2	ppb
|	Cu-KED3	65	8129.6	1.5	23.38826	1.5	ppb
|	Zn-KED3	66	16313.6	0.7	259.22062	1.1	ppb
⌊>	Ge-KED3	72	13812.3	0.4			ppb
⌈>	In-KED2	115	14486.5	1.6			ppb
|	Sb-KED2	121	180.7	6.8	0.37154	6.8	ppb
⌊	Sb-KED2	123	144.1	14.0	0.39149	17.4	ppb
⌈>	Lu-KED2	175	59269.4	1.4			ppb
⌊	Pb-KED2	208	296209.2	1.8	49.87713	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		110			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-003
Sample Date/Time: Wednesday, August 24, 2016 19:53:22
Sample Description: 5
Autosampler Position: 335
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-003.056
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	27002.8	1.6	38.82126	2.7	ppb
|	Cu-KED3	65	13815.7	0.7	39.00251	1.6	ppb
|	Zn-KED3	66	16568.9	2.6	258.23377	4.0	ppb
⌊>	Ge-KED3	72	14087.3	1.7			ppb
⌈>	In-KED2	115	14691.7	1.9			ppb
|	Sb-KED2	121	162.0	6.9	0.31531	10.8	ppb
⌊	Sb-KED2	123	125.1	0.4	0.32150	2.1	ppb
⌈>	Lu-KED2	175	60334.2	2.1			ppb
⌊	Pb-KED2	208	359687.9	1.4	59.50909	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 19:56:24
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.057
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18444.6	2.0	25.32049	0.8	ppb
|	Cu-KED3	65	9444.5	2.5	25.45800	1.2	ppb
|	Zn-KED3	66	1657.8	0.5	24.57394	0.9	ppb
⌊>	Ge-KED3	72	14741.9	1.4			ppb
⌈>	In-KED2	115	15037.7	4.3			ppb
|	Sb-KED2	121	9602.6	1.4	24.99732	5.0	ppb
⌊	Sb-KED2	123	7652.5	2.6	24.80874	2.0	ppb
⌈>	Lu-KED2	175	56734.5	3.4			ppb
⌊	Pb-KED2	208	144247.1	0.3	25.38393	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	102				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		109			
⌈>	In-KED2	115		106			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 19:59:24
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.058
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	18.7	22.3	-0.00714	76.4	ppb
|	Cu-KED3	65	5.0	20.0	-0.02469	10.5	ppb
|	Zn-KED3	66	6.7	37.7	-0.01925	191.5	ppb
⌊>	Ge-KED3	72	14602.8	1.7			ppb
⌈>	In-KED2	115	15143.7	2.6			ppb
|	Sb-KED2	121	36.0	33.3	-0.02408	139.6	ppb
⌊	Sb-KED2	123	36.5	18.0	0.02270	80.4	ppb
⌈>	Lu-KED2	175	57168.2	0.4			ppb
⌊	Pb-KED2	208	19.3	33.3	-0.00070	159.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		108			
⌈>	In-KED2	115		107			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 20:02:24
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.059
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	176.7	13.6	0.21397	11.2	ppb
|	Cu-KED3	65	87.0	11.1	0.20200	17.4	ppb
|	Zn-KED3	66	83.0	4.8	1.14093	0.9	ppb
⌊>	Ge-KED3	72	14459.3	4.0			ppb
⌈>	In-KED2	115	15391.6	3.0			ppb
|	Sb-KED2	121	79.3	11.4	0.08450	27.1	ppb
⌊	Sb-KED2	123	60.7	17.3	0.09793	32.2	ppb
⌈>	Lu-KED2	175	58441.1	3.7			ppb
⌊	Pb-KED2	208	620.0	8.6	0.10211	12.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	107				
|	Cu-KED3	65	101				
|	Zn-KED3	66	114				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		108			
|	Sb-KED2	121	85				
⌊	Sb-KED2	123	98				
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-004
Sample Date/Time: Wednesday, August 24, 2016 20:05:25
Sample Description: 5
Autosampler Position: 336
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082416D\K1608210-004.060
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	22037.7	1.3	31.62240	1.7	ppb
|	Cu-KED3	65	11225.4	0.1	31.63558	2.3	ppb
|	Zn-KED3	66	12915.8	1.2	200.96518	3.6	ppb
⌊>	Ge-KED3	72	14111.3	2.4			ppb
⌈>	In-KED2	115	14529.7	2.0			ppb
|	Sb-KED2	121	144.0	12.3	0.27132	17.9	ppb
⌊	Sb-KED2	123	112.0	7.5	0.28222	11.8	ppb
⌈>	Lu-KED2	175	60734.6	3.7			ppb
⌊	Pb-KED2	208	271221.4	1.2	44.60910	4.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		113			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-005
Sample Date/Time: Wednesday, August 24, 2016 20:08:24
Sample Description: 5
Autosampler Position: 337
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-005.061
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	28120.3	1.7	41.47726	1.9	ppb
|	Cu-KED3	65	14617.1	1.7	42.33635	0.6	ppb
|	Zn-KED3	66	14698.2	2.7	234.92288	1.6	ppb
⌊>	Ge-KED3	72	13729.3	1.3			ppb
⌈>	In-KED2	115	14535.9	0.2			ppb
|	Sb-KED2	121	146.0	19.2	0.27649	27.4	ppb
⌊	Sb-KED2	123	118.7	2.4	0.30442	2.9	ppb
⌈>	Lu-KED2	175	60470.0	0.5			ppb
⌊	Pb-KED2	208	367510.0	0.8	60.64011	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		112			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-006
Sample Date/Time: Wednesday, August 24, 2016 20:11:23
Sample Description: 5
Autosampler Position: 338
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-006.062
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	28889.2	1.3	41.98583	2.0	ppb
	Cu-KED3	65	14810.0	0.6	42.26546	0.1	ppb
	Zn-KED3	66	12523.2	0.8	197.21687	0.3	ppb
>	Ge-KED3	72	13934.1	0.7			ppb
>	In-KED2	115	14433.8	1.1			ppb
	Sb-KED2	121	174.0	13.9	0.35503	17.3	ppb
	Sb-KED2	123	130.1	11.3	0.34582	13.8	ppb
>	Lu-KED2	175	60226.1	2.1			ppb
	Pb-KED2	208	402039.9	2.0	66.63682	3.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		103			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		112			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-010
Sample Date/Time: Wednesday, August 24, 2016 20:14:22
Sample Description: 5
Autosampler Position: 339
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-010.063
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	37874.8	1.8	56.07131	3.3	ppb
	Cu-KED3	65	19434.5	2.1	56.50701	3.7	ppb
	Zn-KED3	66	9580.9	2.9	153.67312	4.5	ppb
>	Ge-KED3	72	13684.9	1.5			ppb
>	In-KED2	115	14485.3	2.2			ppb
	Sb-KED2	121	359.3	1.2	0.85663	2.9	ppb
	Sb-KED2	123	284.0	2.4	0.86453	4.2	ppb
>	Lu-KED2	175	59261.7	2.5			ppb
	Pb-KED2	208	724585.6	0.8	122.03562	2.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		101			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		110			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-011
Sample Date/Time: Wednesday, August 24, 2016 20:17:21
Sample Description: 5
Autosampler Position: 340
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-011.064
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	42891.6	0.7	62.19830	3.8	ppb
	Cu-KED3	65	21731.5	1.8	61.89854	4.7	ppb
	Zn-KED3	66	8009.6	0.4	125.78249	3.4	ppb
>	Ge-KED3	72	13978.5	3.2			ppb
>	In-KED2	115	14754.2	1.3			ppb
	Sb-KED2	121	1362.7	5.7	3.51173	7.2	ppb
	Sb-KED2	123	1109.0	4.3	3.58069	3.2	ppb
>	Lu-KED2	175	59109.1	2.6			ppb
	Pb-KED2	208	3743737.7	0.8	632.30711	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		103			
>	In-KED2	115		104			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		110			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-012
Sample Date/Time: Wednesday, August 24, 2016 20:20:20
Sample Description: 5
Autosampler Position: 341
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-012.065
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	39029.2	0.6	56.57766	2.1	ppb
|	Cu-KED3	65	20049.4	0.5	57.08231	2.5	ppb
|	Zn-KED3	66	11922.0	1.0	187.22073	1.1	ppb
⌊>	Ge-KED3	72	13974.8	1.9			ppb
⌈>	In-KED2	115	14848.3	0.5			ppb
|	Sb-KED2	121	327.3	10.9	0.74788	12.7	ppb
⌊	Sb-KED2	123	290.6	2.7	0.86231	2.7	ppb
⌈>	Lu-KED2	175	59678.8	1.8			ppb
⌊	Pb-KED2	208	1609253.3	2.6	269.15347	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		103			
⌈>	In-KED2	115		105			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-013
Sample Date/Time: Wednesday, August 24, 2016 20:23:19
Sample Description: 5
Autosampler Position: 342
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-013.066
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	41082.4	3.1	60.54967	3.8	ppb
|	Cu-KED3	65	21470.5	2.0	62.14446	2.8	ppb
|	Zn-KED3	66	11134.3	1.7	177.78064	2.7	ppb
⌊>	Ge-KED3	72	13746.6	2.2			ppb
⌈>	In-KED2	115	14639.6	1.3			ppb
|	Sb-KED2	121	886.7	7.0	2.26195	8.2	ppb
⌊	Sb-KED2	123	719.3	3.9	2.30886	4.8	ppb
⌈>	Lu-KED2	175	59834.5	3.5			ppb
⌊	Pb-KED2	208	1886579.8	0.5	314.88971	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		111			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608210-014
Sample Date/Time: Wednesday, August 24, 2016 20:26:18
Sample Description: 5
Autosampler Position: 343
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608210-014.067
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	23983.5	1.4	35.52457	2.0	ppb
|	Cu-KED3	65	12246.2	0.8	35.62116	1.5	ppb
|	Zn-KED3	66	8429.5	1.2	135.27910	1.0	ppb
⌊>	Ge-KED3	72	13669.9	0.8			ppb
⌈>	In-KED2	115	14418.2	3.0			ppb
|	Sb-KED2	121	259.3	4.2	0.58943	8.6	ppb
⌊	Sb-KED2	123	203.0	3.7	0.59381	4.1	ppb
⌈>	Lu-KED2	175	57127.4	2.5			ppb
⌊	Pb-KED2	208	1032441.0	1.5	180.36005	1.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-03
Sample Date/Time: Wednesday, August 24, 2016 20:29:17
Sample Description: 5
Autosampler Position: 344
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609920-03.068
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21.3	42.3	0.00115	1349.4	ppb
|	Cu-KED3	65	9.7	26.0	-0.00831	84.9	ppb
|	Zn-KED3	66	23.0	19.0	0.27549	23.9	ppb
⌊>	Ge-KED3	72	12772.4	3.8			ppb
⌈>	In-KED2	115	13975.6	0.5			ppb
|	Sb-KED2	121	16.7	27.7	-0.07116	18.4	ppb
⌊	Sb-KED2	123	13.6	27.3	-0.04731	27.7	ppb
⌈>	Lu-KED2	175	52955.0	1.8			ppb
⌊	Pb-KED2	208	91.3	7.0	0.01315	10.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-002
Sample Date/Time: Wednesday, August 24, 2016 20:32:16
Sample Description: 5
Autosampler Position: 345
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-002.069
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	10917.5	1.1	15.78195	1.9	ppb
	Cu-KED3	65	5704.5	3.0	16.18904	2.6	ppb
	Zn-KED3	66	6203.7	1.0	97.24137	0.8	ppb
>	Ge-KED3	72	13990.8	0.8			ppb
>	In-KED2	115	14444.1	1.7			ppb
	Sb-KED2	121	95.3	6.4	0.14125	12.0	ppb
	Sb-KED2	123	95.2	3.6	0.22719	3.1	ppb
>	Lu-KED2	175	62522.2	1.0			ppb
	Pb-KED2	208	159145.2	2.0	25.39924	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		104			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		116			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 20:35:18
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.070
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	17582.1	0.7	25.40409	1.3	ppb
	Cu-KED3	65	8912.4	1.0	25.28500	0.4	ppb
	Zn-KED3	66	1577.4	4.0	24.60349	3.5	ppb
>	Ge-KED3	72	14007.9	0.6			ppb
>	In-KED2	115	14863.5	3.4			ppb
	Sb-KED2	121	9443.1	2.1	24.85598	4.3	ppb
	Sb-KED2	123	7549.5	1.5	24.75922	2.0	ppb
>	Lu-KED2	175	58054.4	1.9			ppb
	Pb-KED2	208	143593.6	0.9	24.68300	2.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	102				
	Cu-KED3	65	101				
	Zn-KED3	66	98				
>	Ge-KED3	72		104			
>	In-KED2	115		105			
	Sb-KED2	121	99				
	Sb-KED2	123	99				
>	Lu-KED2	175		108			
	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 20:38:17
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.071
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13.3	48.2	-0.01323	71.0	ppb
|	Cu-KED3	65	7.0	37.8	-0.01781	43.6	ppb
|	Zn-KED3	66	3.3	34.6	-0.06534	28.9	ppb
⌊>	Ge-KED3	72	13613.5	1.2			ppb
⌈>	In-KED2	115	14564.5	1.9			ppb
|	Sb-KED2	121	35.3	18.2	-0.02280	73.9	ppb
⌊	Sb-KED2	123	28.5	8.6	0.00053	1426.5	ppb
⌈>	Lu-KED2	175	55499.6	1.3			ppb
⌊	Pb-KED2	208	24.0	54.6	0.00025	953.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-003
Sample Date/Time: Wednesday, August 24, 2016 20:41:19
Sample Description: 5
Autosampler Position: 346
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-003.072
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10952.9	0.6	16.16564	1.1	ppb
|	Cu-KED3	65	5696.8	0.9	16.51187	2.4	ppb
|	Zn-KED3	66	5834.9	1.6	93.37659	1.4	ppb
⌊>	Ge-KED3	72	13703.9	1.6			ppb
⌈>	In-KED2	115	14220.8	1.2			ppb
|	Sb-KED2	121	96.0	18.2	0.14675	30.8	ppb
⌊	Sb-KED2	123	70.1	7.2	0.14593	10.1	ppb
⌈>	Lu-KED2	175	60836.0	2.8			ppb
⌊	Pb-KED2	208	140964.1	2.1	23.11988	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		113			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-004
Sample Date/Time: Wednesday, August 24, 2016 20:44:18
Sample Description: 5
Autosampler Position: 347
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-004.073
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	14996.5	1.0	22.43444	2.6	ppb
|	Cu-KED3	65	7536.7	2.2	22.13830	3.2	ppb
|	Zn-KED3	66	6798.0	2.7	110.18758	1.2	ppb
⌊>	Ge-KED3	72	13531.1	2.2			ppb
⌈>	In-KED2	115	14495.5	2.1			ppb
|	Sb-KED2	121	126.0	2.7	0.22360	7.3	ppb
⌊	Sb-KED2	123	110.5	4.5	0.27786	3.3	ppb
⌈>	Lu-KED2	175	62222.0	3.9			ppb
⌊	Pb-KED2	208	186870.5	1.0	30.00126	4.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		115			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-005
Sample Date/Time: Wednesday, August 24, 2016 20:47:17
Sample Description: 5
Autosampler Position: 348
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-005.074
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17634.9	1.1	25.88823	2.4	ppb
|	Cu-KED3	65	8815.7	2.5	25.41102	3.1	ppb
|	Zn-KED3	66	7318.2	2.0	116.41571	2.2	ppb
⌊>	Ge-KED3	72	13789.7	1.3			ppb
⌈>	In-KED2	115	14539.9	1.5			ppb
|	Sb-KED2	121	167.3	10.8	0.33403	14.6	ppb
⌊	Sb-KED2	123	150.5	5.1	0.41140	6.9	ppb
⌈>	Lu-KED2	175	61464.0	1.9			ppb
⌊	Pb-KED2	208	276688.9	0.9	44.92145	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		114			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-008
Sample Date/Time: Wednesday, August 24, 2016 20:50:16
Sample Description: 5
Autosampler Position: 349
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-008.075
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15706.0	1.4	27.28306	4.4	ppb
|	Cu-KED3	65	8052.9	2.2	27.47376	5.1	ppb
|	Zn-KED3	66	5998.6	1.1	112.96043	5.4	ppb
⌊>	Ge-KED3	72	11666.1	4.4			ppb
⌈>	In-KED2	115	13013.5	0.6			ppb
|	Sb-KED2	121	157.3	11.5	0.35683	15.3	ppb
⌊	Sb-KED2	123	123.1	3.6	0.36770	3.8	ppb
⌈>	Lu-KED2	175	53534.8	1.8			ppb
⌊	Pb-KED2	208	210663.3	0.9	39.27325	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-009
Sample Date/Time: Wednesday, August 24, 2016 20:53:15
Sample Description: 5
Autosampler Position: 350
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-009.076
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	10018.8	1.9	18.01340	3.7	ppb
|	Cu-KED3	65	5159.6	2.6	18.21780	4.6	ppb
|	Zn-KED3	66	4066.6	1.1	79.22042	1.3	ppb
⌊>	Ge-KED3	72	11256.1	2.2			ppb
⌈>	In-KED2	115	12727.1	1.4			ppb
|	Sb-KED2	121	98.7	15.3	0.18694	27.4	ppb
⌊	Sb-KED2	123	78.9	14.7	0.20842	22.7	ppb
⌈>	Lu-KED2	175	52064.7	1.4			ppb
⌊	Pb-KED2	208	100342.4	1.2	19.22987	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-010
Sample Date/Time: Wednesday, August 24, 2016 20:56:14
Sample Description: 5
Autosampler Position: 351
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-010.077
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	13390.9	2.0	24.15003	1.9	ppb
|	Cu-KED3	65	6766.6	1.4	23.96787	2.8	ppb
|	Zn-KED3	66	4751.5	1.3	92.85246	0.9	ppb
⌊>	Ge-KED3	72	11222.1	1.6			ppb
⌈>	In-KED2	115	12795.6	2.7			ppb
|	Sb-KED2	121	92.0	17.8	0.16364	25.9	ppb
⌊	Sb-KED2	123	84.2	10.8	0.22689	15.0	ppb
⌈>	Lu-KED2	175	52303.3	1.7			ppb
⌊	Pb-KED2	208	126288.5	1.5	24.08918	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		90			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011
Sample Date/Time: Wednesday, August 24, 2016 20:59:13
Sample Description: 5
Autosampler Position: 352
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011.078
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	20235.7	1.6	34.88099	3.2	ppb
|	Cu-KED3	65	10278.0	0.2	34.78832	2.3	ppb
|	Zn-KED3	66	5706.1	2.7	106.50007	0.7	ppb
⌊>	Ge-KED3	72	11750.2	2.1			ppb
⌈>	In-KED2	115	12910.3	3.9			ppb
|	Sb-KED2	121	143.3	8.5	0.31940	16.7	ppb
⌊	Sb-KED2	123	94.0	6.6	0.26097	5.4	ppb
⌈>	Lu-KED2	175	52506.3	2.1			ppb
⌊	Pb-KED2	208	273776.4	1.9	52.04334	3.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011L
Sample Date/Time: Wednesday, August 24, 2016 21:02:12
Sample Description: 25
Autosampler Position: 353
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011L.079
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	4625.4	3.3	7.25352	4.9	ppb
|	Cu-KED3	65	2352.5	0.7	7.23782	1.6	ppb
|	Zn-KED3	66	1319.4	2.4	22.39973	4.2	ppb
⌊>	Ge-KED3	72	12871.5	2.1			ppb
⌈>	In-KED2	115	14017.8	4.9			ppb
|	Sb-KED2	121	44.7	10.3	0.00764	238.1	ppb
⌊	Sb-KED2	123	40.8	13.1	0.04709	31.1	ppb
⌈>	Lu-KED2	175	55323.3	1.0			ppb
⌊	Pb-KED2	208	60253.4	1.9	10.86424	2.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		99			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011A
Sample Date/Time: Wednesday, August 24, 2016 21:05:11
Sample Description: 5 +50ppb
Autosampler Position: 354
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011A.080
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	47812.6	2.2	83.09534	0.7	ppb
	Cu-KED3	65	24272.3	2.2	82.84558	0.2	ppb
	Zn-KED3	66	8325.8	0.4	156.76991	2.2	ppb
>	Ge-KED3	72	11656.1	2.4			ppb
>	In-KED2	115	12839.9	1.8			ppb
	Sb-KED2	121	17056.2	2.1	52.06843	2.9	ppb
	Sb-KED2	123	13593.7	1.0	51.69293	0.9	ppb
>	Lu-KED2	175	52626.8	0.8			ppb
	Pb-KED2	208	520602.0	1.2	98.70253	0.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		86			
>	In-KED2	115		90			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		98			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011S
Sample Date/Time: Wednesday, August 24, 2016 21:08:09
Sample Description: 5
Autosampler Position: 355
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011S.081
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	74038.0	0.9	129.74716	1.6	ppb
|	Cu-KED3	65	37603.8	1.6	129.45241	3.4	ppb
|	Zn-KED3	66	15784.4	1.9	299.73234	3.5	ppb
⌊>	Ge-KED3	72	11563.0	1.9			ppb
⌈>	In-KED2	115	13059.1	0.7			ppb
|	Sb-KED2	121	25413.3	2.1	76.31279	1.8	ppb
⌊	Sb-KED2	123	20288.1	1.7	75.88828	1.0	ppb
⌈>	Lu-KED2	175	53621.8	1.4			ppb
⌊	Pb-KED2	208	1248958.3	1.2	232.42677	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		86			
⌈>	In-KED2	115		92			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:11:10
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.082
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16359.4	4.6	25.13434	5.6	ppb
|	Cu-KED3	65	8301.1	3.2	25.03626	3.5	ppb
|	Zn-KED3	66	1491.7	3.4	24.74384	4.4	ppb
⌊>	Ge-KED3	72	13178.1	1.1			ppb
⌈>	In-KED2	115	14280.0	2.1			ppb
|	Sb-KED2	121	9219.0	2.8	25.23587	0.7	ppb
⌊	Sb-KED2	123	7486.1	2.4	25.54514	0.3	ppb
⌈>	Lu-KED2	175	54213.1	3.1			ppb
⌊	Pb-KED2	208	138582.6	0.1	25.51885	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	100				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		98			
⌈>	In-KED2	115		101			
|	Sb-KED2	121	101				
⌊	Sb-KED2	123	102				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:14:10
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.083
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8.0	25.0	-0.02045	15.9	ppb
|	Cu-KED3	65	3.3	34.6	-0.02810	12.1	ppb
|	Zn-KED3	66	5.3	10.8	-0.02884	27.5	ppb
⌊>	Ge-KED3	72	12948.9	2.3			ppb
⌈>	In-KED2	115	13874.7	4.0			ppb
|	Sb-KED2	121	33.3	15.1	-0.02320	77.2	ppb
⌊	Sb-KED2	123	27.5	32.7	0.00231	1403.0	ppb
⌈>	Lu-KED2	175	53474.0	4.7			ppb
⌊	Pb-KED2	208	28.0	31.1	0.00117	144.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		96			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 21:17:09
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\LLCCVS.084
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	146.0	4.1	0.19755	6.2	ppb
|	Cu-KED3	65	84.3	8.6	0.22348	12.3	ppb
|	Zn-KED3	66	63.3	7.1	0.96577	11.3	ppb
⌊>	Ge-KED3	72	12842.8	3.1			ppb
⌈>	In-KED2	115	13858.2	3.3			ppb
|	Sb-KED2	121	68.7	21.1	0.07616	49.9	ppb
⌊	Sb-KED2	123	53.1	19.0	0.09212	36.9	ppb
⌈>	Lu-KED2	175	54260.6	3.0			ppb
⌊	Pb-KED2	208	586.7	6.4	0.10394	8.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	112				
|	Zn-KED3	66	97				
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		98			
|	Sb-KED2	121	76				
⌊	Sb-KED2	123	92				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	104				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-011SD
Sample Date/Time: Wednesday, August 24, 2016 21:20:10
Sample Description: 5
Autosampler Position: 356
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-011SD.085
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	73305.7	3.0	126.03621	6.6	ppb
|	Cu-KED3	65	37095.1	2.7	125.25607	6.4	ppb
|	Zn-KED3	66	15623.2	2.7	290.98186	6.3	ppb
⌊>	Ge-KED3	72	11802.9	3.8			ppb
⌈>	In-KED2	115	12916.9	2.1			ppb
|	Sb-KED2	121	25087.3	1.9	76.17710	2.0	ppb
⌊	Sb-KED2	123	19932.9	1.4	75.39295	1.1	ppb
⌈>	Lu-KED2	175	53550.9	3.7			ppb
⌊	Pb-KED2	208	1232067.0	1.4	229.78719	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		91			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609920-04
Sample Date/Time: Wednesday, August 24, 2016 21:23:09
Sample Description: 5
Autosampler Position: 357
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609920-04.086
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	64658.7	2.3	103.03853	2.3	ppb
|	Cu-KED3	65	33284.7	1.5	104.17989	2.1	ppb
|	Zn-KED3	66	12337.7	3.1	212.97432	3.0	ppb
⌊>	Ge-KED3	72	12713.3	1.3			ppb
⌈>	In-KED2	115	13789.7	4.3			ppb
|	Sb-KED2	121	73006.8	1.8	208.13180	5.4	ppb
⌊	Sb-KED2	123	58774.5	1.4	208.54090	2.8	ppb
⌈>	Lu-KED2	175	53071.9	4.4			ppb
⌊	Pb-KED2	208	1096580.6	1.0	206.47658	5.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 21:26:10
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.087
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	35.3	34.1	0.02048	86.5	ppb
	Cu-KED3	65	15.3	26.4	0.00727	159.5	ppb
	Zn-KED3	66	11.0	31.5	0.06093	89.6	ppb
>	Ge-KED3	72	13368.3	1.7			ppb
>	In-KED2	115	14264.6	0.8			ppb
	Sb-KED2	121	48.7	35.0	0.01609	293.9	ppb
	Sb-KED2	123	33.6	3.7	0.02016	22.5	ppb
>	Lu-KED2	175	55404.6	1.0			ppb
	Pb-KED2	208	47.3	20.0	0.00446	39.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		99			
>	In-KED2	115		100			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		103			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-012
Sample Date/Time: Wednesday, August 24, 2016 21:29:11
Sample Description: 5
Autosampler Position: 358
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608344-012.088
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	2.7	114.6	-0.02713	23.7	ppb
	Cu-KED3	65	3.3	34.6	0.03368	234.3	ppb
	Zn-KED3	66	2.0	86.6	0.38981	182.1	ppb
>	Ge-KED3	72	9538.7	140.5			ppb
>	In-KED2	115	11429.8	82.1			ppb
	Sb-KED2	121	5.3	86.6	-0.10403	12.9	ppb
	Sb-KED2	123	1.9	6.7	-0.07571	29.7	ppb
>	Lu-KED2	175	44820.0	90.8			ppb
	Pb-KED2	208	23.3	9.9	0.00971	166.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		71			
>	In-KED2	115		80			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		83			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

No Uptake JB 8/25/16

LABWORKS - Summary Report

Sample ID: KQ1609300-03
Sample Date/Time: Wednesday, August 24, 2016 21:32:10
Sample Description: 5
Autosampler Position: 359
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609300-03.089
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.0	57.7	-0.01371	82.2	ppb
|	Cu-KED3	65	6.0	16.7	-0.01941	15.8	ppb
|	Zn-KED3	66	18.0	20.0	0.19370	33.2	ppb
⌊>	Ge-KED3	72	12641.3	0.6			ppb
⌈>	In-KED2	115	13959.7	4.4			ppb
|	Sb-KED2	121	14.0	65.5	-0.07793	35.1	ppb
⌊	Sb-KED2	123	9.1	27.5	-0.06308	15.0	ppb
⌈>	Lu-KED2	175	52173.8	0.9			ppb
⌊	Pb-KED2	208	88.7	15.0	0.01290	20.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-004
Sample Date/Time: Wednesday, August 24, 2016 21:35:09
Sample Description: 5
Autosampler Position: 360
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-004.090
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	24401.5	1.3	36.64391	3.7	ppb
|	Cu-KED3	65	12123.5	1.6	35.74703	3.3	ppb
|	Zn-KED3	66	5918.9	2.8	96.26694	4.2	ppb
⌊>	Ge-KED3	72	13490.4	2.4			ppb
⌈>	In-KED2	115	14130.5	4.8			ppb
|	Sb-KED2	121	126.0	15.1	0.23123	16.8	ppb
⌊	Sb-KED2	123	107.4	10.6	0.27640	11.2	ppb
⌈>	Lu-KED2	175	57524.3	2.9			ppb
⌊	Pb-KED2	208	274638.6	1.1	47.66919	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-005
Sample Date/Time: Wednesday, August 24, 2016 21:38:10
Sample Description: 5
Autosampler Position: 101
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-005.091
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	2.7	43.3	0.08999	138.8	ppb
|	Cu-KED3	65	1.0	100.0	0.01567	400.5	ppb
|	Zn-KED3	66	0.7	86.6	0.23452	154.1	ppb
⌊>	Ge-KED3	72	657.0	54.4			ppb
⌈>	In-KED2	115	17818.6	107.9			ppb
|	Sb-KED2	121	2.7	173.2	-0.11529	4.1	ppb
⌊	Sb-KED2	123	2.5	61.3	-0.03417	267.9	ppb
⌈>	Lu-KED2	175	69678.4	109.3			ppb
⌊	Pb-KED2	208	21.3	48.1	0.01343	185.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		5			
⌈>	In-KED2	115		125			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		129			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ge-KED3 72 Int Std for samp	Ge-KED3	72	IS out of control
In-KED2 115 Int Std for samp	In-KED2	115	IS out of control
Lu-KED2 175 Int Std for sam	Lu-KED2	175	IS out of control

No Uptake
JB 8/25/16

LABWORKS - Summary Report

Sample ID: K1608209-006
Sample Date/Time: Wednesday, August 24, 2016 21:41:08
Sample Description: 5
Autosampler Position: 102
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082416D\K1608209-006.092
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	40022.0	0.2	59.87426	3.1	ppb
|	Cu-KED3	65	20678.6	0.3	60.75094	2.7	ppb
|	Zn-KED3	66	8065.3	3.2	130.61607	1.8	ppb
⌊>	Ge-KED3	72	13546.4	2.9			ppb
⌈>	In-KED2	115	14444.0	1.7			ppb
|	Sb-KED2	121	186.0	7.5	0.38745	7.7	ppb
⌊	Sb-KED2	123	145.8	6.6	0.39852	7.1	ppb
⌈>	Lu-KED2	175	57849.9	0.9			ppb
⌊	Pb-KED2	208	463770.4	1.4	79.98763	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-007
Sample Date/Time: Wednesday, August 24, 2016 21:44:08
Sample Description: 5
Autosampler Position: 103
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-007.093
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	21559.6	1.2	33.38692	4.8	ppb
|	Cu-KED3	65	10889.8	0.6	33.11217	4.2	ppb
|	Zn-KED3	66	5859.9	1.1	98.26881	3.6	ppb
⌊>	Ge-KED3	72	13088.0	3.6			ppb
⌈>	In-KED2	115	14291.9	0.8			ppb
|	Sb-KED2	121	184.7	7.2	0.38969	10.4	ppb
⌊	Sb-KED2	123	137.6	3.7	0.37591	3.6	ppb
⌈>	Lu-KED2	175	57523.9	1.1			ppb
⌊	Pb-KED2	208	382742.3	1.1	66.39706	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010
Sample Date/Time: Wednesday, August 24, 2016 21:47:07
Sample Description: 5
Autosampler Position: 104
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010.094
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	34224.3	1.0	51.34678	3.3	ppb
|	Cu-KED3	65	17471.0	1.4	51.47995	3.7	ppb
|	Zn-KED3	66	9266.0	1.2	150.60112	3.4	ppb
⌊>	Ge-KED3	72	13505.7	2.4			ppb
⌈>	In-KED2	115	14373.1	2.6			ppb
|	Sb-KED2	121	614.0	0.3	1.56057	2.7	ppb
⌊	Sb-KED2	123	467.3	1.1	1.49624	4.0	ppb
⌈>	Lu-KED2	175	57873.1	3.2			ppb
⌊	Pb-KED2	208	894314.8	0.6	154.30637	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		107			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:50:07
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.095
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	4.0	50.0	2.17826	129.6	ppb
	Cu-KED3	65	1.7	69.3	2.76009	162.1	ppb
	Zn-KED3	66	1.3	43.3	6.27034	118.3	ppb
>	Ge-KED3	72	313.3	141.3			ppb
>	In-KED2	115	11516.3	157.1			ppb
	Sb-KED2	121	6.7	75.5	0.22788	241.9	ppb
	Sb-KED2	123	1.2	111.5	0.00580	3052.3	ppb
>	Lu-KED2	175	43454.3	159.4			ppb
	Pb-KED2	208	178.0	69.1	1.09193	166.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	9				
	Cu-KED3	65	11				
	Zn-KED3	66	25				
>	Ge-KED3	72		2			
>	In-KED2	115		81			
	Sb-KED2	121	1				
	Sb-KED2	123	0				
>	Lu-KED2	175		81			
	Pb-KED2	208	4				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Cu-KED3	63	Out of Control
QC Std 2	Cu-KED3	65	Out of Control
QC Std 2	Zn-KED3	66	Out of Control
Ge-KED3 72 Int Std for QC S	Ge-KED3	72	IS out of control
QC Std 2	Sb-KED2	121	Out of Control
QC Std 2	Sb-KED2	123	Out of Control
QC Std 2	Pb-KED2	208	Out of Control

JB 8/25/16

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 21:52:26
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.096
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17434.6	1.2	25.69015	1.7	ppb
|	Cu-KED3	65	8929.5	2.3	25.84217	3.5	ppb
|	Zn-KED3	66	1585.4	2.6	25.23393	4.3	ppb
⌊>	Ge-KED3	72	13738.6	2.5			ppb
⌈>	In-KED2	115	14619.4	1.5			ppb
|	Sb-KED2	121	9296.4	1.3	24.86494	2.9	ppb
⌊	Sb-KED2	123	7586.5	0.4	25.29192	1.9	ppb
⌈>	Lu-KED2	175	55333.6	1.6			ppb
⌊	Pb-KED2	208	140636.2	1.5	25.36455	3.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	103				
|	Cu-KED3	65	103				
|	Zn-KED3	66	101				
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121	99				
⌊	Sb-KED2	123	101				
⌈>	Lu-KED2	175		103			
⌊	Pb-KED2	208	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 21:55:25
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.097
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	12.7	59.8	-0.01461	75.9	ppb
|	Cu-KED3	65	8.0	45.1	-0.01544	69.3	ppb
|	Zn-KED3	66	4.0	66.1	-0.05657	72.8	ppb
⌊>	Ge-KED3	72	13991.5	1.7			ppb
⌈>	In-KED2	115	14684.0	3.8			ppb
|	Sb-KED2	121	32.0	32.5	-0.03162	100.5	ppb
⌊	Sb-KED2	123	26.9	13.5	-0.00516	263.6	ppb
⌈>	Lu-KED2	175	54281.9	1.5			ppb
⌊	Pb-KED2	208	20.0	72.1	-0.00037	723.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010L
Sample Date/Time: Wednesday, August 24, 2016 21:58:26
Sample Description: 25
Autosampler Position: 105
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010L.098
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	7431.9	1.6	10.71723	1.2	ppb
	Cu-KED3	65	3800.5	1.2	10.76040	2.1	ppb
	Zn-KED3	66	1977.1	2.1	30.87051	2.4	ppb
>	Ge-KED3	72	14009.9	1.3			ppb
>	In-KED2	115	14686.4	4.3			ppb
	Sb-KED2	121	140.7	9.1	0.25887	15.9	ppb
	Sb-KED2	123	110.1	10.2	0.27125	8.9	ppb
>	Lu-KED2	175	57331.8	1.2			ppb
	Pb-KED2	208	185067.4	0.5	32.20948	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		104			
>	In-KED2	115		103			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		106			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010A
Sample Date/Time: Wednesday, August 24, 2016 22:01:25
Sample Description: 5 +50ppb
Autosampler Position: 106
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010A.099
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66729.5	2.2	101.04332	3.3	ppb
|	Cu-KED3	65	34415.7	1.0	102.33909	2.0	ppb
|	Zn-KED3	66	12348.7	0.1	202.51591	1.3	ppb
⌊>	Ge-KED3	72	13381.9	1.1			ppb
⌈>	In-KED2	115	14604.4	2.0			ppb
|	Sb-KED2	121	19087.4	2.1	51.24225	4.1	ppb
⌊	Sb-KED2	123	15166.3	1.2	50.70398	0.8	ppb
⌈>	Lu-KED2	175	58205.0	0.9			ppb
⌊	Pb-KED2	208	1172297.0	1.0	200.97738	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010S
Sample Date/Time: Wednesday, August 24, 2016 22:04:24
Sample Description: 5
Autosampler Position: 107
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010S.100
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	94074.7	0.7	142.71648	5.2	ppb
	Cu-KED3	65	47708.5	0.2	142.12412	4.6	ppb
	Zn-KED3	66	21210.7	1.5	348.73457	6.3	ppb
>	Ge-KED3	72	13376.3	4.7			ppb
>	In-KED2	115	14155.9	1.8			ppb
	Sb-KED2	121	31282.9	1.5	86.69917	2.5	ppb
	Sb-KED2	123	24888.6	1.3	85.91204	1.6	ppb
>	Lu-KED2	175	58140.4	2.2			ppb
	Pb-KED2	208	2325902.8	1.1	399.32489	2.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		99			
>	In-KED2	115		100			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		108			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-010SD
Sample Date/Time: Wednesday, August 24, 2016 22:07:23
Sample Description: 5
Autosampler Position: 108
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-010SD.101
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	101265.1	1.9	153.30457	1.8	ppb
|	Cu-KED3	65	51568.9	1.2	153.32723	0.7	ppb
|	Zn-KED3	66	22098.7	0.7	362.45404	0.9	ppb
⌊>	Ge-KED3	72	13382.9	0.5			ppb
⌈>	In-KED2	115	14326.2	2.0			ppb
|	Sb-KED2	121	31200.0	2.2	85.42489	1.8	ppb
⌊	Sb-KED2	123	24372.5	1.7	83.12212	1.2	ppb
⌈>	Lu-KED2	175	58897.9	2.9			ppb
⌊	Pb-KED2	208	2507746.4	1.3	425.13980	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		109			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: KQ1609300-04
Sample Date/Time: Wednesday, August 24, 2016 22:10:22
Sample Description: 5
Autosampler Position: 109
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\KQ1609300-04.102
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	66065.1	0.7	97.09979	1.8	ppb
|	Cu-KED3	65	34004.4	0.2	98.16021	2.0	ppb
|	Zn-KED3	66	12327.0	0.7	196.26377	2.2	ppb
⌊>	Ge-KED3	72	13786.0	1.8			ppb
⌈>	In-KED2	115	14599.9	1.9			ppb
|	Sb-KED2	121	73240.0	2.7	196.97831	3.8	ppb
⌊	Sb-KED2	123	58642.8	1.8	196.36797	0.2	ppb
⌈>	Lu-KED2	175	57041.3	1.7			ppb
⌊	Pb-KED2	208	1071343.6	0.5	187.43690	1.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		106			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: MO STD
Sample Date/Time: Wednesday, August 24, 2016 22:13:24
Sample Description:
Autosampler Position: 7
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\MO STD.103
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	42.0	8.2	0.02633	14.9	ppb
|	Cu-KED3	65	17.3	12.0	0.00982	58.4	ppb
|	Zn-KED3	66	13.0	20.4	0.08007	52.0	ppb
⌊>	Ge-KED3	72	14335.9	1.6			ppb
⌈>	In-KED2	115	14624.3	2.0			ppb
|	Sb-KED2	121	45.3	13.5	0.00380	444.0	ppb
⌊	Sb-KED2	123	39.5	12.8	0.03688	43.0	ppb
⌈>	Lu-KED2	175	55989.2	1.0			ppb
⌊	Pb-KED2	208	60.0	23.3	0.00664	38.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % Recovery	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		106			
⌈>	In-KED2	115		103			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		104			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-011
Sample Date/Time: Wednesday, August 24, 2016 22:16:25
Sample Description: 5
Autosampler Position: 110
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-011.104
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	26369.0	2.7	39.38632	2.8	ppb
|	Cu-KED3	65	13380.6	1.2	39.24630	0.5	ppb
|	Zn-KED3	66	8243.4	2.4	133.38592	1.7	ppb
⌊>	Ge-KED3	72	13556.4	0.7			ppb
⌈>	In-KED2	115	13275.7	5.6			ppb
|	Sb-KED2	121	987.4	5.0	2.80828	6.9	ppb
⌊	Sb-KED2	123	787.4	1.4	2.81075	4.5	ppb
⌈>	Lu-KED2	175	54200.3	7.1			ppb
⌊	Pb-KED2	208	2369560.4	1.0	437.73514	7.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		100			
⌈>	In-KED2	115		93			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-012
Sample Date/Time: Wednesday, August 24, 2016 22:19:24
Sample Description: 5
Autosampler Position: 111
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-012.105
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	19949.3	1.1	29.82367	2.1	ppb
	Cu-KED3	65	10223.7	0.8	30.01191	1.3	ppb
	Zn-KED3	66	9508.8	1.1	154.08014	2.3	ppb
>	Ge-KED3	72	13543.1	1.7			ppb
>	In-KED2	115	14321.0	3.9			ppb
	Sb-KED2	121	254.0	0.8	0.57928	4.5	ppb
	Sb-KED2	123	203.0	4.3	0.59956	8.8	ppb
>	Lu-KED2	175	58192.6	1.8			ppb
	Pb-KED2	208	511287.3	0.3	87.68303	1.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		100			
>	In-KED2	115		101			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		108			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-013
Sample Date/Time: Wednesday, August 24, 2016 22:22:23
Sample Description: 5
Autosampler Position: 112
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-013.106
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25719.8	0.7	38.97129	1.0	ppb
|	Cu-KED3	65	13219.4	2.0	39.33485	1.9	ppb
|	Zn-KED3	66	7966.9	1.3	130.78042	0.7	ppb
⌊>	Ge-KED3	72	13363.2	0.6			ppb
⌈>	In-KED2	115	14385.3	2.6			ppb
|	Sb-KED2	121	234.7	4.7	0.52349	8.8	ppb
⌊	Sb-KED2	123	206.8	4.7	0.60844	5.7	ppb
⌈>	Lu-KED2	175	56610.7	2.7			ppb
⌊	Pb-KED2	208	605984.9	0.9	106.87018	3.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		101			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-014
Sample Date/Time: Wednesday, August 24, 2016 22:25:22
Sample Description: 5
Autosampler Position: 113
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\K1608209-014.107
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	43728.8	0.6	64.23268	1.0	ppb
|	Cu-KED3	65	21905.5	2.5	63.18455	1.9	ppb
|	Zn-KED3	66	10208.3	2.2	162.42701	2.1	ppb
⌊>	Ge-KED3	72	13790.0	1.2			ppb
⌈>	In-KED2	115	14499.4	2.2			ppb
|	Sb-KED2	121	1024.7	2.1	2.65946	4.5	ppb
⌊	Sb-KED2	123	775.6	2.5	2.52278	4.5	ppb
⌈>	Lu-KED2	175	58350.7	3.6			ppb
⌊	Pb-KED2	208	2605137.0	2.1	445.90559	4.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		102			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		108			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Wednesday, August 24, 2016 22:28:23
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCV.108
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17853.8	2.9	25.01894	2.3	ppb
|	Cu-KED3	65	9449.1	4.7	26.00028	4.0	ppb
|	Zn-KED3	66	1644.8	2.8	24.88640	2.1	ppb
⌊>	Ge-KED3	72	14441.3	1.0			ppb
⌈>	In-KED2	115	15224.3	0.6			ppb
|	Sb-KED2	121	9724.0	1.5	24.97010	2.0	ppb
⌊	Sb-KED2	123	7762.8	2.1	24.84463	1.9	ppb
⌈>	Lu-KED2	175	56381.8	2.5			ppb
⌊	Pb-KED2	208	144512.0	1.1	25.57704	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	100				
|	Cu-KED3	65	104				
|	Zn-KED3	66	100				
⌊>	Ge-KED3	72		107			
⌈>	In-KED2	115		107			
|	Sb-KED2	121	100				
⌊	Sb-KED2	123	99				
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208	102				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Wednesday, August 24, 2016 22:31:22
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\CCB.109
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	11.3	62.0	-0.01692	58.3	ppb
|	Cu-KED3	65	5.3	21.7	-0.02338	12.8	ppb
|	Zn-KED3	66	5.7	44.4	-0.03194	118.8	ppb
⌊>	Ge-KED3	72	14200.1	2.0			ppb
⌈>	In-KED2	115	15084.0	0.8			ppb
|	Sb-KED2	121	43.3	18.7	-0.00507	435.3	ppb
⌊	Sb-KED2	123	29.7	10.1	0.00141	636.8	ppb
⌈>	Lu-KED2	175	56491.5	0.8			ppb
⌊	Pb-KED2	208	32.0	21.7	0.00158	75.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		105			
⌈>	In-KED2	115		106			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		105			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Wednesday, August 24, 2016 22:34:22
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082416D\LLCCVS.110
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	156.7	12.8	0.19053	14.8	ppb
	Cu-KED3	65	80.0	10.2	0.18585	11.8	ppb
	Zn-KED3	66	70.7	2.9	0.97341	3.4	ppb
>	Ge-KED3	72	14201.7	0.5			ppb
>	In-KED2	115	15178.7	1.8			ppb
	Sb-KED2	121	70.0	21.6	0.06360	66.5	ppb
	Sb-KED2	123	54.5	13.9	0.08102	33.0	ppb
>	Lu-KED2	175	56225.1	0.9			ppb
	Pb-KED2	208	621.3	4.4	0.10618	3.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63	95				
	Cu-KED3	65	93				
	Zn-KED3	66	97				
>	Ge-KED3	72		105			
>	In-KED2	115		107			
	Sb-KED2	121	64				
	Sb-KED2	123	81				
>	Lu-KED2	175		104			
	Pb-KED2	208	106				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control

Service Request # K1608344
Calibration 082516AMS04
QC in calibration 082516AMS04
QC Service Request # K1608344
STARLIMS run # 511623

CAL STD	MS20-83-K	ICSA STD	MS20-83-H
ICV STD	MS20-72-E	ICSAB STD	MS20-83-I
LLICV STD	MS20-72-F		
Internal STD	MS20-58-A		

6020 DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD limit?	X		
12. Spikes within DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?		X	
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?	X		
21. Cd Correction Applied?		X	
22. Was run prematurely stopped, If so why?		X	

Comments: LRSTD : 1000ppb
#12 Rerun

Primary Review by JDB Date 8/25/16
Secondary Review by [signature] Date 8/26/16

Data Review Form

Service Request #:	**K1608344**
Instrument ID#:	**K-ICP-MS-04**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-04 (NexION)\082516a.txt**
RUNNO:	**511623**

There are no issues to report.

Primary Approver: JDB 8/25/16

Secondary Approver: 8/25/16

Dataset Report

User Name: ALKLS.ALKLSXP373
Computer Name: ALKLSXP373
Dataset File Path: C:\NexION Data\DataSet\082516A\
Report Date/Time: Thursday, August 25, 2016 13:43:35

The Dataset

Sample ID	Date and Time	Read Type	Description	Batch ID	Samp. File Name
RINSE	12:44:08 Thu 25-Aug-16	Sample			C:\NexION Data\DataSet\082516A\RINSE.001
Blank	12:47:03 Thu 25-Aug-16	Blank			C:\NexION Data\DataSet\082516A\Blank.002
Standard 1	12:49:57 Thu 25-Aug-16	Standard #1			C:\NexION Data\DataSet\082516A\Standard 1
ICV	12:52:51 Thu 25-Aug-16	QC Std #1			C:\NexION Data\DataSet\082516A\ICV.004
CCV	12:55:46 Thu 25-Aug-16	QC Std #2			C:\NexION Data\DataSet\082516A\CCV.005
ICB	12:58:40 Thu 25-Aug-16	QC Std #3			C:\NexION Data\DataSet\082516A\ICB.006
CCB	13:01:35 Thu 25-Aug-16	QC Std #4			C:\NexION Data\DataSet\082516A\CCB.007
LLICVS	13:04:30 Thu 25-Aug-16	QC Std #5			C:\NexION Data\DataSet\082516A\LLICVS.00
ICSA	13:07:24 Thu 25-Aug-16	QC Std #7			C:\NexION Data\DataSet\082516A\ICSA.009
ICSAB	13:10:18 Thu 25-Aug-16	QC Std #8			C:\NexION Data\DataSet\082516A\ICSAB.010
1000ppb LR	13:13:15 Thu 25-Aug-16	Sample			C:\NexION Data\DataSet\082516A\1000ppb LI
RINSE	13:16:12 Thu 25-Aug-16	Sample			C:\NexION Data\DataSet\082516A\RINSE.012
K1608209-005	13:19:08 Thu 25-Aug-16	Sample	5		C:\NexION Data\DataSet\082516A\K1608209-
K1608344-012	13:22:02 Thu 25-Aug-16	Sample	5		C:\NexION Data\DataSet\082516A\K1608344-
K1608325-011	13:24:56 Thu 25-Aug-16	Sample	500		C:\NexION Data\DataSet\082516A\K1608325-
CCV	13:27:52 Thu 25-Aug-16	QC Std #2			C:\NexION Data\DataSet\082516A\CCV.016
CCB	13:30:46 Thu 25-Aug-16	QC Std #4			C:\NexION Data\DataSet\082516A\CCB.017
LLCCVS	13:33:41 Thu 25-Aug-16	QC Std #6			C:\NexION Data\DataSet\082516A\LLCCVS.0
LLCCVS	13:41:59 Thu 25-Aug-16	Sample			C:\NexION Data\DataSet\082516A\LLCCVS.0

SmartTune Wizard - Details

ptimization Details

martTune file: C:\NexIONData\Wizard\SmartTune\CAS SmartTune Full FAST.swz

ptimization Status

tart Time: 8/25/2016 10:58:19 AM

lass Calibration and Resolution

Optimization Settings:

Method: C:\NexIONData\Method\CAS Tuning.mth.
MassCal File: C:\NexIONData\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.1 for Mass Cal. and 0.1 for Resolution
Peak height (%) for Res. Opt.: 5

Optimization Results:

Initial Try

Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.677)
Target/Obtained mass (9.0122/9.025), Target/Obtained resolution (0.7/0.689)
Target/Obtained mass (23.985/23.925), Target/Obtained resolution (0.7/0.707)
Target/Obtained mass (58.9332/58.925), Target/Obtained resolution (0.7/0.691)
Target/Obtained mass (114.904/114.875), Target/Obtained resolution (0.7/0.685)
Target/Obtained mass (139.905/139.875), Target/Obtained resolution (0.7/0.701)
Target/Obtained mass (207.977/207.975), Target/Obtained resolution (0.7/0.698)
Target/Obtained mass (208.98/208.975), Target/Obtained resolution (0.7/0.698)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.701)

Passed] Optimum value(s): N/A

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Thursday, August 25, 2016 11:03:31
Sample Description:
Method File: C:\NexION Data\Method\CAS Daily Performance.mth
Dataset File: C:\NexION Data\Dataset\Default\Daily Performance Check.3544
MassCal File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Li	7.0	27296.9	27296.861	477.588	1.7	Standard
	Be	9.0	9170.0	9170.009	152.620	1.7	Standard
	Mg	24.0	25953.4	25953.429	555.106	2.1	Standard
	Co	58.9	31274.6	31274.605	553.279	1.8	Standard
	In	114.9	61780.9	61780.927	929.471	1.5	Standard
	Pb	208.0	50145.9	50145.864	513.436	1.0	Standard
	Bi	209.0	42124.3	42124.286	436.070	1.0	Standard
	U	238.1	42056.6	42056.631	748.561	1.8	Standard
⌈	CeO	155.9	713.9	0.014	0.001	4.9	Standard
|>	Ce	139.9	49392.8	49392.845	385.582	0.8	Standard
⌊	Ce++	70.0	981.1	0.020	0.001	4.7	Standard
	Bkgd	220.0	0.1	0.133	0.298	223.6	Standard

Replicates

Repeat 1

Analyte	Mass	Meas. Intensity
Li	7	26915.999
Be	9	9115.574
Mg	24	26890.618
Co	59	31453.254
In	115	63234.977
Pb	208	50246.775
Bi	209	41704.118
U	238	42582.704
CeO	156	685.350
Ce	140	49927.762
Ce++	70	945.365
Bkgd	220	0.000

Repeat 2

Analyte	Mass	Meas. Intensity
Li	7	26702.265
Be	9	9106.902
Mg	24	25536.136
Co	59	30343.525
In	115	60872.750
Pb	208	49398.825
Bi	209	41810.428
U	238	40748.700
CeO	156	685.350
Ce	140	48993.201
Ce++	70	954.032
Bkgd	220	0.667

Repeat 3

Analyte	Mass	Meas. Intensity
Li	7	27620.676
Be	9	9348.391
Mg	24	26017.003
Co	59	31235.444
In	115	61771.931

Pb	208	49979.804
Bi	209	42602.764
U	238	42134.712
CeO	156	698.684
Ce	140	49064.111
Ce++	70	1050.039
Bkgd	220	0.000

Repeat 4

Analyte	Mass	Meas. Intensity
Li	7	27842.439
Be	9	9301.694
Mg	24	25715.791
Co	59	31596.904
In	115	61944.007
Pb	208	50298.171
Bi	209	42586.716
U	238	42398.825
CeO	156	730.685
Ce	140	49384.545
Ce++	70	968.700
Bkgd	220	0.000

Repeat 5

Analyte	Mass	Meas. Intensity
Li	7	27402.924
Be	9	8977.487
Mg	24	25607.597
Co	59	31743.896
In	115	61080.969
Pb	208	50805.744
Bi	209	41917.407
U	238	42418.216
CeO	156	769.354
Ce	140	49594.604
Ce++	70	987.367
Bkgd	220	0.000

Current Conditions File Data

Current Value	Description
0.86	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
16.00	Plasma Gas Flow
-9.50	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-14.50	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.86	DRC Mode NEB
-6.50	DRC Mode QRO
-1.50	DRC Mode CRO
-10.00	DRC Mode Cell Entrance/Exit Voltage
3.50	Cell Gas A
0.00	Cell Gas B
280.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-40.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

LABWORKS - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, August 25, 2016 12:47:03
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\Blank.002
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8.0	25.0			ppb
|	Cu-KED3	65	3.7	31.5			ppb
|	Zn-KED3	66	3.0	66.7			ppb
⌊>	Ge-KED3	72	14187.7	1.0			ppb
⌈>	In-KED2	115	13963.1	0.7			ppb
|	Sb-KED2	121	25.3	4.6			ppb
⌊	Sb-KED2	123	26.6	11.0			ppb
⌈>	Lu-KED2	175	50909.6	1.3			ppb
⌊	Pb-KED2	208	17.3	17.6			ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, August 25, 2016 12:49:57
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\Standard 1.003
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16767.8	3.0	25.00000	4.7	ppb
|	Cu-KED3	65	8571.2	1.8	25.00000	3.5	ppb
|	Zn-KED3	66	1613.4	2.1	25.00000	3.8	ppb
⌊>	Ge-KED3	72	14656.8	1.7			ppb
⌈>	In-KED2	115	13640.6	3.2			ppb
|	Sb-KED2	121	9050.2	2.7	25.00000	5.7	ppb
⌊	Sb-KED2	123	7245.9	1.3	25.00000	3.5	ppb
⌈>	Lu-KED2	175	50878.6	4.8			ppb
⌊	Pb-KED2	208	128981.1	0.8	25.00000	5.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72					
⌈>	In-KED2	115					
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175					
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICV
Sample Date/Time: Thursday, August 25, 2016 12:52:51
Sample Description:
Autosampler Position: 3
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICV.004
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	8409.1	2.3	12.69050	4.0	ppb
|	Cu-KED3	65	4539.4	2.1	13.40385	3.6	ppb
|	Zn-KED3	66	1647.8	4.1	25.86254	5.5	ppb
⌊>	Ge-KED3	72	14472.3	1.7			ppb
⌈>	In-KED2	115	14020.1	2.1			ppb
|	Sb-KED2	121	9804.7	2.9	26.34065	5.0	ppb
⌊	Sb-KED2	123	7803.8	1.1	26.18793	1.9	ppb
⌈>	Lu-KED2	175	50694.9	3.2			ppb
⌊	Pb-KED2	208	131979.8	1.0	25.64291	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	102				
|	Cu-KED3	65	107				
|	Zn-KED3	66	103				
⌊>	Ge-KED3	72		102			
⌈>	In-KED2	115		100			
|	Sb-KED2	121	105				
⌊	Sb-KED2	123	105				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	103				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Thursday, August 25, 2016 12:55:46
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCV.005
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16238.6	0.9	24.80336	1.0	ppb
|	Cu-KED3	65	8625.3	1.3	25.78088	2.4	ppb
|	Zn-KED3	66	1556.1	4.6	24.70008	4.2	ppb
⌊>	Ge-KED3	72	14300.8	1.9			ppb
⌈>	In-KED2	115	13990.3	1.7			ppb
|	Sb-KED2	121	9086.2	0.4	24.44458	1.4	ppb
⌊	Sb-KED2	123	7171.4	1.8	24.11198	3.2	ppb
⌈>	Lu-KED2	175	51543.8	1.1			ppb
⌊	Pb-KED2	208	129058.6	1.4	24.64944	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	99				
|	Cu-KED3	65	103				
|	Zn-KED3	66	99				
⌊>	Ge-KED3	72		101			
⌈>	In-KED2	115		100			
|	Sb-KED2	121	98				
⌊	Sb-KED2	123	96				
⌈>	Lu-KED2	175		101			
⌊	Pb-KED2	208	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICB
Sample Date/Time: Thursday, August 25, 2016 12:58:40
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICB.006
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	14.0	51.5	0.00912	122.4	ppb
	Cu-KED3	65	6.7	37.7	0.00886	83.7	ppb
	Zn-KED3	66	5.3	28.6	0.03673	65.8	ppb
>	Ge-KED3	72	14295.1	0.6			ppb
>	In-KED2	115	14218.1	1.5			ppb
	Sb-KED2	121	56.7	4.1	0.08191	5.7	ppb
	Sb-KED2	123	45.1	16.6	0.06016	44.5	ppb
>	Lu-KED2	175	50760.7	1.8			ppb
	Pb-KED2	208	20.0	26.5	0.00054	200.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		101			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		100			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Thursday, August 25, 2016 13:01:35
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCB.007
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	14.7	20.8	0.01025	45.8	ppb
	Cu-KED3	65	9.0	19.2	0.01607	33.4	ppb
	Zn-KED3	66	6.3	18.2	0.05343	35.7	ppb
>	Ge-KED3	72	14199.7	0.9			ppb
>	In-KED2	115	14208.0	0.7			ppb
	Sb-KED2	121	37.3	35.7	0.03084	116.2	ppb
	Sb-KED2	123	34.3	8.9	0.02421	42.4	ppb
>	Lu-KED2	175	50712.2	1.1			ppb
	Pb-KED2	208	16.0	25.0	-0.00024	323.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		100			
>	In-KED2	115		102			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		100			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: LLICVS
Sample Date/Time: Thursday, August 25, 2016 13:04:30
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\LLICVS.008
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	140.7	5.0	0.19599	4.0	ppb
|	Cu-KED3	65	72.3	20.7	0.19860	22.0	ppb
|	Zn-KED3	66	67.7	7.4	0.99605	9.1	ppb
⌊>	Ge-KED3	72	14752.6	2.0			ppb
⌈>	In-KED2	115	13811.2	0.6			ppb
|	Sb-KED2	121	73.3	23.5	0.13211	36.6	ppb
⌊	Sb-KED2	123	51.9	10.2	0.08750	21.8	ppb
⌈>	Lu-KED2	175	50871.8	1.4			ppb
⌊	Pb-KED2	208	540.7	7.2	0.10124	6.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	98				
|	Cu-KED3	65	99				
|	Zn-KED3	66	100				
⌊>	Ge-KED3	72		104			
⌈>	In-KED2	115		99			
|	Sb-KED2	121	132				
⌊	Sb-KED2	123	88				
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: ICSA
Sample Date/Time: Thursday, August 25, 2016 13:07:24
Sample Description:
Autosampler Position: 5
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082516A\ICSA.009
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	346.7	7.7	0.61664	7.9	ppb
|	Cu-KED3	65	171.3	18.5	0.59701	18.7	ppb
|	Zn-KED3	66	19.0	5.3	0.31068	5.9	ppb
⌊>	Ge-KED3	72	12044.4	0.2			ppb
⌈>	In-KED2	115	12265.8	2.8			ppb
|	Sb-KED2	121	44.0	20.8	0.06706	42.7	ppb
⌊	Sb-KED2	123	31.4	18.5	0.03139	78.2	ppb
⌈>	Lu-KED2	175	47935.3	1.0			ppb
⌊	Pb-KED2	208	360.0	2.9	0.07059	2.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		85			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: ICSAB
Sample Date/Time: Thursday, August 25, 2016 13:10:18
Sample Description:
Autosampler Position: 6
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\ICSAB.010
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	25497.4	1.8	47.48137	2.9	ppb
|	Cu-KED3	65	13396.3	2.3	48.81361	3.6	ppb
|	Zn-KED3	66	1188.4	1.6	22.98677	0.8	ppb
⌊>	Ge-KED3	72	11734.2	1.5			ppb
⌈>	In-KED2	115	12302.9	1.1			ppb
|	Sb-KED2	121	40.0	34.6	0.05399	76.4	ppb
⌊	Sb-KED2	123	37.7	7.8	0.05474	17.9	ppb
⌈>	Lu-KED2	175	48074.4	2.2			ppb
⌊	Pb-KED2	208	356.0	5.9	0.06954	5.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	95				
|	Cu-KED3	65	98				
|	Zn-KED3	66	92				
⌊>	Ge-KED3	72		83			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		94			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: 1000ppb LR
Sample Date/Time: Thursday, August 25, 2016 13:13:15
Sample Description:
Autosampler Position: 324
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\1000ppb LR.011
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	611090.7	1.9	984.44012	1.2	ppb
|	Cu-KED3	65	318018.7	1.1	1002.44823	1.6	ppb
|	Zn-KED3	66	58465.1	0.9	980.45282	1.9	ppb
⌊>	Ge-KED3	72	13565.8	2.4			ppb
⌈>	In-KED2	115	13699.0	1.2			ppb
|	Sb-KED2	121	360909.7	0.9	994.17693	0.3	ppb
⌊	Sb-KED2	123	287469.4	1.4	990.53489	2.3	ppb
⌈>	Lu-KED2	175	50572.7	1.4			ppb
⌊	Pb-KED2	208	5103658.0	1.7	993.59529	0.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		96			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: RINSE
Sample Date/Time: Thursday, August 25, 2016 13:16:12
Sample Description:
Autosampler Position: 323
Number of Replicates: 3
Dataset File: C:\NexIONData\DataSet\082516A\RINSE.012
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	35.3	17.3	0.04536	19.8	ppb
|	Cu-KED3	65	14.3	42.6	0.03512	59.2	ppb
|	Zn-KED3	66	6.0	50.0	0.05340	92.5	ppb
⌊>	Ge-KED3	72	13361.2	2.3			ppb
⌈>	In-KED2	115	13619.9	2.4			ppb
|	Sb-KED2	121	239.3	8.1	0.59533	10.5	ppb
⌊	Sb-KED2	123	163.2	3.1	0.47632	6.2	ppb
⌈>	Lu-KED2	175	50782.4	1.1			ppb
⌊	Pb-KED2	208	82.0	59.1	0.01250	74.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		98			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		100			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608209-005
Sample Date/Time: Thursday, August 25, 2016 13:19:08
Sample Description: 5
Autosampler Position: 301
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\K1608209-005.013
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	23607.5	1.0	38.07715	0.3	ppb
|	Cu-KED3	65	12660.9	1.2	39.95546	0.8	ppb
|	Zn-KED3	66	5695.8	2.0	95.60829	1.9	ppb
⌊>	Ge-KED3	72	13543.4	0.9			ppb
⌈>	In-KED2	115	13468.5	1.3			ppb
|	Sb-KED2	121	215.3	2.1	0.53502	3.5	ppb
⌊	Sb-KED2	123	178.7	15.9	0.53628	18.4	ppb
⌈>	Lu-KED2	175	51983.4	1.8			ppb
⌊	Pb-KED2	208	379511.0	0.6	71.89173	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		95			
⌈>	In-KED2	115		96			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		102			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608344-012
Sample Date/Time: Thursday, August 25, 2016 13:22:02
Sample Description: 5
Autosampler Position: 302
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\K1608344-012.014
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	17446.0	1.2	30.98189	1.2	ppb
|	Cu-KED3	65	9307.7	0.8	32.34450	2.0	ppb
|	Zn-KED3	66	5258.3	1.4	97.18247	0.7	ppb
⌊>	Ge-KED3	72	12300.6	1.4			ppb
⌈>	In-KED2	115	12228.9	1.1			ppb
|	Sb-KED2	121	142.0	12.3	0.36953	13.7	ppb
⌊	Sb-KED2	123	113.4	5.7	0.34789	7.0	ppb
⌈>	Lu-KED2	175	48237.3	2.5			ppb
⌊	Pb-KED2	208	225403.7	0.7	46.01814	1.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		87			
⌈>	In-KED2	115		88			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		95			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: K1608325-011
Sample Date/Time: Thursday, August 25, 2016 13:24:56
Sample Description: 500
Autosampler Position: 303
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\K1608325-011.015
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
	Cu-KED3	63	536.7	1.8	0.85103	2.0	ppb
	Cu-KED3	65	280.3	3.3	0.87130	3.6	ppb
	Zn-KED3	66	87.7	9.2	1.41897	8.5	ppb
>	Ge-KED3	72	13584.5	1.2			ppb
>	In-KED2	115	13421.3	2.2			ppb
	Sb-KED2	121	102.7	22.2	0.21970	27.4	ppb
	Sb-KED2	123	70.8	13.1	0.15875	17.8	ppb
>	Lu-KED2	175	49373.9	2.7			ppb
	Pb-KED2	208	150978.1	1.6	30.12364	3.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
	Cu-KED3	63					
	Cu-KED3	65					
	Zn-KED3	66					
>	Ge-KED3	72		96			
>	In-KED2	115		96			
	Sb-KED2	121					
	Sb-KED2	123					
>	Lu-KED2	175		97			
	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCV
Sample Date/Time: Thursday, August 25, 2016 13:27:52
Sample Description:
Autosampler Position: 2
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCV.016
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	15125.3	2.9	25.20763	3.0	ppb
|	Cu-KED3	65	7970.2	1.3	25.98826	1.0	ppb
|	Zn-KED3	66	1439.7	5.1	24.93608	4.8	ppb
⌊>	Ge-KED3	72	13105.7	0.3			ppb
⌈>	In-KED2	115	13547.7	0.1			ppb
|	Sb-KED2	121	8651.3	0.6	24.03017	0.7	ppb
⌊	Sb-KED2	123	6964.3	2.2	24.17324	2.2	ppb
⌈>	Lu-KED2	175	50461.3	0.3			ppb
⌊	Pb-KED2	208	124362.5	0.1	24.26170	0.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	101				
|	Cu-KED3	65	104				
|	Zn-KED3	66	100				
⌊>	Ge-KED3	72		92			
⌈>	In-KED2	115		97			
|	Sb-KED2	121	96				
⌊	Sb-KED2	123	97				
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208	97				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

LABWORKS - Summary Report

Sample ID: CCB
Sample Date/Time: Thursday, August 25, 2016 13:30:46
Sample Description:
Autosampler Position: 1
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\CCB.017
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	16.7	30.2	0.01491	55.0	ppb
|	Cu-KED3	65	4.7	12.4	0.00386	45.7	ppb
|	Zn-KED3	66	3.0	0.0	0.00293	10.1	ppb
⌊>	Ge-KED3	72	13372.6	0.6			ppb
⌈>	In-KED2	115	13504.4	0.9			ppb
|	Sb-KED2	121	78.7	14.7	0.15120	20.1	ppb
⌊	Sb-KED2	123	52.1	6.6	0.09230	12.1	ppb
⌈>	Lu-KED2	175	49500.3	1.6			ppb
⌊	Pb-KED2	208	20.7	20.1	0.00077	115.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		94			
⌈>	In-KED2	115		97			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		97			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Sb-KED2	121	Out of Control

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Thursday, August 25, 2016 13:33:41
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION\Data\DataSet\082516A\LLCCVS.018
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	128.7	5.9	0.19220	6.6	ppb
|	Cu-KED3	65	66.3	8.3	0.19513	7.9	ppb
|	Zn-KED3	66	62.3	19.1	0.98433	21.1	ppb
⌊>	Ge-KED3	72	13749.3	1.0			ppb
⌈>	In-KED2	115	13632.0	2.2			ppb
|	Sb-KED2	121	84.7	13.0	0.16631	20.9	ppb
⌊	Sb-KED2	123	69.0	24.2	0.14919	39.0	ppb
⌈>	Lu-KED2	175	50129.1	1.2			ppb
⌊	Pb-KED2	208	557.3	7.7	0.10616	8.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63	96				
|	Cu-KED3	65	98				
|	Zn-KED3	66	98				
⌊>	Ge-KED3	72		97			
⌈>	In-KED2	115		98			
|	Sb-KED2	121	166				
⌊	Sb-KED2	123	149				
⌈>	Lu-KED2	175		98			
⌊	Pb-KED2	208	106				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb-KED2	121	Out of Control
QC Std 6	Sb-KED2	123	Out of Control

LABWORKS - Summary Report

Sample ID: LLCCVS
Sample Date/Time: Thursday, August 25, 2016 13:41:59
Sample Description:
Autosampler Position: 4
Number of Replicates: 3
Dataset File: C:\NexION Data\DataSet\082516A\LLCCVS.019
User Name: JDB
Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
⌈	Cu-KED3	63	137.3	17.4	0.20215	18.2	ppb
|	Cu-KED3	65	78.3	8.5	0.22850	9.7	ppb
|	Zn-KED3	66	67.7	12.3	1.05107	11.3	ppb
⌊>	Ge-KED3	72	13987.5	1.5			ppb
⌈>	In-KED2	115	13918.4	1.9			ppb
|	Sb-KED2	121	66.7	1.7	0.11237	5.9	ppb
⌊	Sb-KED2	123	58.2	9.5	0.10722	14.1	ppb
⌈>	Lu-KED2	175	50628.6	2.4			ppb
⌊	Pb-KED2	208	504.0	5.5	0.09468	5.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
⌈	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
⌊>	Ge-KED3	72		99			
⌈>	In-KED2	115		100			
|	Sb-KED2	121					
⌊	Sb-KED2	123					
⌈>	Lu-KED2	175		99			
⌊	Pb-KED2	208					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Preparation Information Benchsheet

Prep Run: 267585 **Prep Workflow:** MetDigAqMS **Status:** Prepped **Prep Date:** 08/02/2016 09:16
Team: Metals **Prep Method:** EPA CLP-METALS ILM04.0 **Current Step:** Digestion **Due Date:** 08/08/2016
Analyst: (b) (6) **Rush/NPDES:** N/A **Hold Date:** 01/16/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	Testno list	Comments
KQ1609039-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX,0.05 mL HCl
KQ1609039-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.05 mL 0.25 mL	172187 172654 172707 174317	Metals T	1%HNO3 ULTREX,0.05 mL HCl
K1608325-014	EB072116	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX,0.05 mL HCl
~~K1608325-014~~: KQ1609039-03	Duplicate	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX,0.05 mL HCl
K1608325-014: KQ1609039-04	Matrix Spike	.01	25 mL	25 mL	0.25 mL 0.25 mL 0.05 mL 0.25 mL	172187 172654 172707 174317	Metals T	1%HNO3 ULTREX,0.05 mL HCl
K1608344-013	EB072016	.04	25 mL	25 mL			Metals T	1%HNO3 ULTREX,0.05 mL HCl

sf 8/6/16

Duplicate LabControl Sample

sf 8/6/16

6 Total Samples consisting of 2 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET Mo/U 10ppm	Spike	172707	9/3/2016	k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016	k-met Sb 5ug/mL Sb	Spike	174317	7/12/2017

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761	Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-BlockDigester-05	Corrected Temperature	96	deg C	Digestion	K-BlockDigester-05	Thermometer ID 1108396		NONE
Digestion	K-BlockDigester-05	Correction Factor	0	deg C	Digestion	K-BlockDigester-05	Thermometer Location	51	NONE
Digestion	K-BlockDigester-05	Observed Temperature 211918066	96	deg C					

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	02-AUG-16 09:16	02-AUG-16 11:16	Juanita Hinson		N	

Comments

HCl lot number 53338 ; duplicate LCS unable to be added to prep run per J.Hinson spiked same as KQ1609039-02 LCS. sf 8/6/16

Review

Reviewed by: _____ Date: 8/6/16

Preparation Information Benchsheet

Prep Run: 267853
Team: Metals
Analyst: (b) (6)

Prep Workflow: MetDigAqMS
Prep Method: EPA CLP-METALS ILM04.0
Rush/NPDES: N/A

Status: Prepped
Current Step: Digestion

Prep Date: 08/04/2016 09:43
Due Date: 08/01/2016
Hold Date: 01/10/2017

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1609201-01	Method Blank		25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-02	Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
KQ1609201-03	Duplicate Lab Control Sample		25 mL	25 mL	0.25 mL 0.25 mL 0.25 mL	172187 172654 174317	Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608011-007	EB071416	.03	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608207-015	EB071816	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608209-015	EB071916	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608210-015	EB071516	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608325-014	EB072116	.01	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl
K1608344-013	EB072016	.04	25 mL	25 mL			Metals T	1%HNO3 ULTREX, 0.05mL HCl

9 Total Samples consisting of 6 Client Samples, 0 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
k-met 1/100 QCP CICV-1	Spike	172654	10/14/2016
k-met 1/100 QCP-CICV-3	Spike	172187	10/14/2016

Name	Type	ID	Expires
k-met Sb 5ug/mL Sb	Spike	174317	7/12/2017

Preparation Materials

Step	Name	ID
Digestion	K-MET HNO3 ULTREX	88761

Step	Name	ID
Digestion	K-MET 50ml Centrifuge Tube	173969

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Corrected Temperature	96	deg C
Digestion	K-BlockDigester-06	Correction Factor	0	deg C
Digestion	K-BlockDigester-06	Observed Temperature 211919567	96	deg C

Step	Name	Property	Value	
Digestion	K-BlockDigester-06	Thermometer ID 1108666		NONE
Digestion	K-BlockDigester-06	Thermometer Location	53	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	04-AUG-16 09:43	04-AUG-16 11:43	Anna Cheatley		N	

Comments

HCl lot #53338

Review

Reviewed by: _____ Date: 8/5/16

ICP-MS LCSW AND SPIKING SOLUTIONS

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-1

k-met 1/100 QCP-CICV-1

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Al	10000	100
Ag	1250	12.5
Ba	10000	100
Be	250	2.5
Ca	25000	250
Co	2500	25
Cu	1250	12.5
Cr	1000	10
Fe	5000	50
K	25000	250
Mg	25000	250
Mn	2500	25
Na	25000	250
Ni	2500	25
V	2500	25
Zn	2500	25

2.50mL to 500mL Dilution of 1000ppm Sb

k-met 5ug/mL Sb

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Sb	5000	50

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-3

k-met 1/100 QCP-CICV-3

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
As	5000	50
Pb	5000	50
Se	5000	50
Tl	5000	50
Cd	2500	25

2.00mL to 200mL Dilution of 1,000 ppm Mo and 1,000 ppm U

k-met Mo/U 10ppm

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Mo	10000	20
U	10000	20

Service Request # K1608344

Calibration 080316CMS03

QC in calibration 080316CMS03

QC Service Request # K1608325

STARLIMS run # 508286

Cal Std: MS20-74H ICSA Std: MS20-68H

ICV Std: MS20-74I ICSAB Std: MS20-68I

LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X	X	
11. LCS within DoD 5.0 limit?	X		
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb. MB: Zn =1.6 ppb. See redigest.

Primary Review by _____ Date 8/4/16

Secondary Review by _____ Date 8/5/16

R:\icp\misc\data review forms\6020 DoD Review Checklist

Data Review Form

Service Request #:	**K1608344**
Instrument ID#:	**K-ICP-MS-03**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080316CMS03.csv**
RUNNO:	**508286**

There are no issues to report.

Primary Approver: _____ 8/4/16

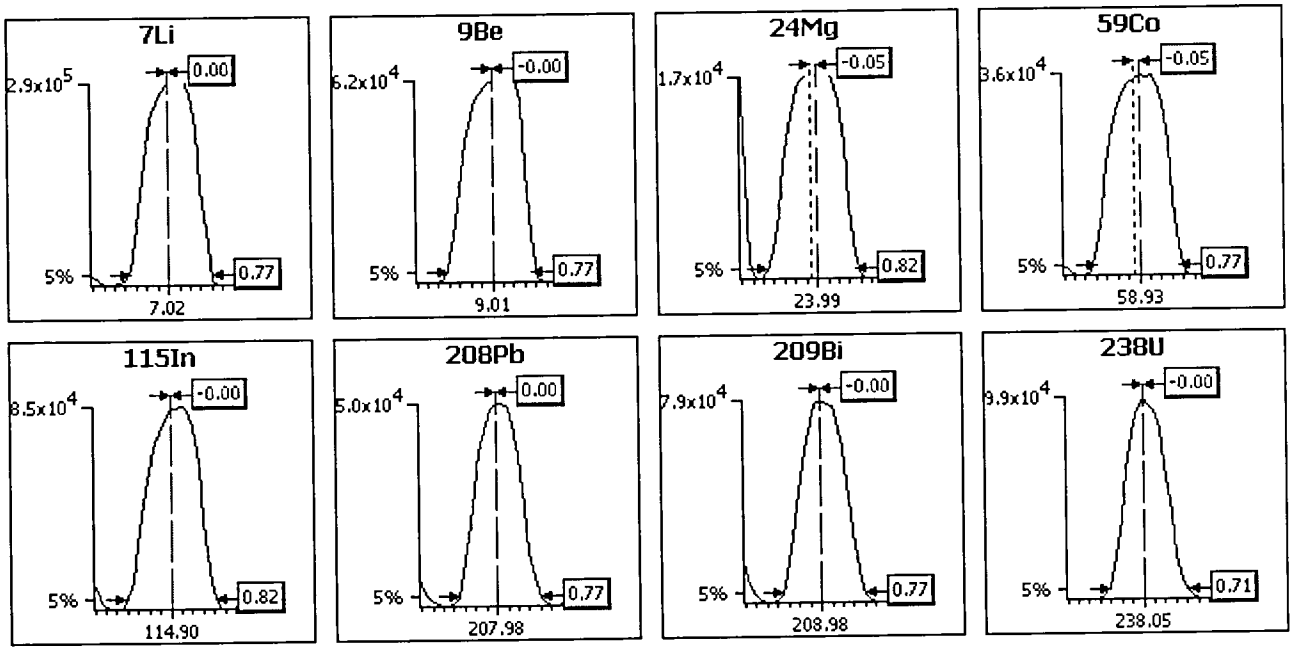
Secondary Approver: _____ 8/5/16

Performance Report

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.77	0.00
9Be	0.90	0.60	0.10	0.77	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.77	-0.05
115In	0.90	0.60	0.10	0.82	-0.00
208Pb	0.90	0.60	0.10	0.77	0.00
209Bi	0.90	0.60	0.10	0.77	-0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/3/2016 6:28:28 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	3.8
Focus	23.9
D1	-36.1
Pole Bias	0.4
Hexapole Bias	0.3
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-21.2
Lens 3	-196.1
Forward power	1357
Horizontal	150
Vertical	379
D2	-147
DA	-37.6
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	6:29:00 AM	0.000	284076.95	64021.390	19038.665	37178.368	88721.329	92152.711	1751.419	52817.237
2	6:30:13 AM	0.000	284616.70	64282.221	18790.900	37247.399	88991.702	92036.291	1696.908	53025.444
3	6:31:26 AM	0.000	280053.72	62989.469	18746.809	37270.745	88884.663	92390.355	1683.406	53079.256
4	6:32:38 AM	0.000	282064.47	63422.715	18936.702	37062.395	89291.874	92101.698	1698.909	52955.538
5	6:33:51 AM	0.000	277669.22	62788.334	18622.554	37124.147	89100.005	92354.999	1679.405	53251.258
x		0.000	281696.21	63500.826	18827.126	37176.611	88997.915	92207.211	1702.009	53025.747
σ		0.00	2883.02	643.58	163.07	86.13	215.75	157.08	28.87	159.78
%RSD		0.000	1.023	1.014	0.866	0.232	0.242	0.170	1.696	0.301

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	6:29:00 AM	80875.907	0.000	101610.96
2	6:30:13 AM	81137.977	0.000	101836.97
3	6:31:26 AM	81746.139	0.000	102219.22
4	6:32:38 AM	81748.409	0.000	102459.91
5	6:33:51 AM	81756.733	0.500	102762.54
x		81453.033	0.100	102177.92
σ		417.65	0.22	463.87
%RSD		0.513	223.607	0.454

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	6:29:00 AM	0.019
2	6:30:13 AM	0.018
3	6:31:26 AM	0.018
4	6:32:38 AM	0.018
5	6:33:51 AM	0.018
x		0.0185
σ		0.00
%RSD		1.7799

Result : The performance report passed.

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	ICB1	Unknown	1.000	0	1	1	145
7	CCB1	Unknown	1.000	0	1	1	145
8	LLICVW	Unknown	1.000	0	1	4	145
9	LRSTD	Unknown	1.000	2	1	1	145
10	ICSA	Unknown	1.000	0	1	5	145
11	ICSAB	Unknown	1.000	0	1	6	145
12	KQ1607936-01	Unknown	1.000	1	1	1	145
13	KQ1607936-02	Unknown	1.000	1	1	2	145
14	KQ1607936-03	Unknown	1.000	1	1	3	145
15	K1606832-006	Unknown	1.000	1	1	4	145
16	K1606832-006L	Unknown	1.000	1	1	5	145
17	K1606832-006A	Unknown	1.000	1	1	6	145
18	K1606956-012	Unknown	1.000	1	1	7	145
19	K1607019-010	Unknown	1.000	1	1	8	145
20	K1607034-011	Unknown	1.000	1	1	9	145
21	CCV2	Unknown	1.000	0	1	2	145
22	CCB2	Unknown	1.000	0	1	1	145
23	K1607146-009	Unknown	1.000	1	1	10	145
24	K1607207-006	Unknown	1.000	1	1	11	145
25	K1607266-009	Unknown	1.000	1	1	12	145
26	K1607357-009	Unknown	1.000	1	2	1	145
27	K1607397-009	Unknown	1.000	1	2	2	145
28	K1607580-008	Unknown	1.000	1	2	3	145
29	K1607636-007	Unknown	1.000	1	2	4	145
30	K1607636-008	Unknown	1.000	1	2	5	145
31	K1607675-009	Unknown	1.000	1	2	6	145
32	CCV3	Unknown	1.000	0	1	2	145
33	CCB3	Unknown	1.000	0	1	1	145
34	CCB3	Unknown	1.000	0	1	1	145
35	LLCCVW1	Unknown	1.000	0	1	4	145
36	KQ1608449-01	Unknown	1.000	1	2	7	145
37	KQ1608449-02	Unknown	1.000	1	2	8	145
38	KQ1608449-03	Unknown	1.000	1	2	9	145
39	K1608011-007	Unknown	1.000	1	2	10	145
40	K1608011-007L	Unknown	1.000	1	2	11	145
41	K1608011-007A	Unknown	1.000	1	2	12	145
42	K1608207-015	Unknown	1.000	1	3	1	145
43	K1608209-015	Unknown	1.000	1	3	2	145
44	K1608210-015	Unknown	1.000	1	3	3	145
45	CCV4	Unknown	1.000	0	1	2	145
46	CCB4	Unknown	1.000	0	1	1	145
47	CCB4	Unknown	1.000	0	1	1	145
48	KQ1609039-01	Unknown	1.000	1	3	4	145
49	KQ1609039-02	Unknown	1.000	1	3	5	145
50	KQ1609039-02	Unknown	1.000	1	3	6	145
51	K1608325-014	Unknown	1.000	1	3	7	145
52	K1608325-014L	Unknown	1.000	1	3	8	145
53	K1608325-014A	Unknown	1.000	1	3	9	145
54	K1608344-013	Unknown	1.000	1	3	10	145
55	CCV5	Unknown	1.000	0	1	2	145
56	CCB5	Unknown	1.000	0	1	1	145
57	LLCCVW2	Unknown	1.000	0	1	4	145

Dilution Corrected Concentrations

Cal Blk 8/3/2016 11:58:52 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	101.9%	0.0033	100.9%	0.0110	0.0165	0.0029	-0.0040	0.0068
2	11:59:28	98.6%	-0.0006	100.2%	-0.0021	-0.0116	-0.0015	0.0074	0.0091
3	12:00:05	99.6%	-0.0028	99.0%	-0.0089	-0.0050	-0.0014	-0.0034	-0.0159
x		100.0%	-0.0000	100.0%	0.0000	0.0000	0.0000	-0.0000	0.0000
σ		1.7%	0.0031	1.0%	0.0101	0.0147	0.0025	0.0064	0.0138
%RSD		1.7	0.0000	1.0	0.0000	0.0000	0.0000	0.0000	0.0000

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	-0.0095	0.0198	99.4%	-0.0339	0.0192	0.0854	-0.0948	99.6%
2	11:59:28	0.0018	0.0023	100.2%	0.0235	0.0162	0.0155	0.0940	100.4%
3	12:00:05	0.0077	-0.0221	100.4%	0.0104	-0.0355	-0.1009	0.0008	100.0%
x		0.0000	-0.0000	100.0%	0.0000	0.0000	-0.0000	-0.0000	100.0%
σ		0.0088	0.0210	0.5%	0.0300	0.0308	0.0941	0.0944	0.4%
%RSD		0.0000	0.0000	0.5	0.0000	0.0000	0.0000	0.0000	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	99.0%	-0.0006	-0.0037	98.6%	0.0007	0.0006	0.0001
2	11:59:28	100.3%	-0.0006	0.0055	100.2%	-0.0003	0.0007	0.0000
3	12:00:05	100.7%	0.0012	-0.0018	101.1%	-0.0003	-0.0013	-0.0001
x		100.0%	-0.0000	-0.0000	100.0%	0.0000	-0.0000	0.0000
σ		0.9%	0.0011	0.0049	1.3%	0.0006	0.0011	0.0001
%RSD		0.9	0.0000	0.0000	1.3	0.0000	0.0000	0.0000

Cal. Stn 8/3/2016 12:05:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	99.7%	25.4212	101.4%	24.8380	25.1333	25.4232	25.2951	25.0170
2	12:06:13	94.9%	25.1251	97.9%	25.1084	24.6147	24.6884	25.0301	24.8387
3	12:06:49	96.1%	24.4537	96.2%	25.0537	25.2520	24.8884	24.6747	25.1443
x		96.9%	25.0000	98.5%	25.0000	25.0000	25.0000	25.0000	25.0000
σ		2.5%	0.4957	2.7%	0.1430	0.3389	0.3799	0.3113	0.1535
%RSD		2.5	1.9828	2.7	0.5718	1.3555	1.5195	1.2452	0.6139

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	26.0129	25.0250	99.2%	25.2220	25.3365	25.7518	25.1408	99.6%
2	12:06:13	24.3553	25.0889	101.0%	24.8849	25.3583	24.3936	25.5295	99.9%
3	12:06:49	24.6318	24.8861	100.6%	24.8931	24.3052	24.8546	24.3297	99.8%
x		25.0000	25.0000	100.3%	25.0000	25.0000	25.0000	25.0000	99.8%
σ		0.8880	0.1037	0.9%	0.1923	0.6018	0.6907	0.6121	0.1%
%RSD		3.5520	0.4146	0.9	0.7692	2.4071	2.7626	2.4485	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:36	100.4%	24.8686	24.7840	100.2%	25.0324	25.1190	25.0564
2	12:06:13	100.4%	25.1052	25.1796	102.3%	25.0025	24.8978	25.0032
3	12:06:49	101.2%	25.0262	25.0364	103.1%	24.9651	24.9832	24.9404
x		100.7%	25.0000	25.0000	101.8%	25.0000	25.0000	25.0000
σ		0.5%	0.1205	0.2003	1.5%	0.0337	0.1115	0.0581
%RSD		0.5	0.4819	0.8011	1.5	0.1350	0.4462	0.2323

ICV1 8/3/2016 12:08:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	100.1%	2.5523	100.4%	25.1690	24.7591	12.3264	12.1984	24.5557
2	12:09:28	93.3%	2.6073	98.3%	25.4122	25.2363	12.6465	12.6558	25.6487
3	12:10:05	95.5%	2.5233	98.0%	24.8719	24.8466	12.3458	12.4137	25.3729
x		96.3%	2.5610	98.9%	25.1510	24.9474	12.4396	12.4226	25.1924
σ		3.4%	0.0427	1.3%	0.2706	0.2541	0.1795	0.2288	0.5684
%RSD		3.6	1.6657	1.3	1.0759	1.0184	1.4429	1.8418	2.2562

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	28.2358	27.5655	100.2%	25.0311	24.9594	25.1245	25.4640	99.2%
2	12:09:28	28.2388	27.5751	99.8%	25.0224	25.9091	25.7493	25.4659	99.6%
3	12:10:05	28.8693	28.2665	98.7%	25.2677	25.6252	25.8031	25.2063	100.3%
x		28.4479	27.8023	99.6%	25.1071	25.4979	25.5590	25.3787	99.7%
σ		0.3649	0.4020	0.8%	0.1392	0.4875	0.3772	0.1493	0.6%
%RSD		1.2826	1.4459	0.8	0.5544	1.9118	1.4760	0.5883	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:08:51	99.1%	26.4095	26.3179	100.9%	24.6743	25.3301	25.0655
2	12:09:28	100.3%	26.2787	26.2682	102.8%	24.6864	25.2792	25.0687
3	12:10:05	101.3%	25.9541	25.7546	102.7%	25.0059	25.7189	25.3189
x		100.3%	26.2141	26.1136	102.1%	24.7888	25.4427	25.1510
σ		1.1%	0.2345	0.3118	1.1%	0.1880	0.2405	0.1454
%RSD		1.1	0.8945	1.1942	1.1	0.7586	0.9454	0.5782

CCV1 8/3/2016 12:13:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	103.0%	24.5929	98.8%	25.3563	25.2254	25.0767	25.1933	25.4099
2	12:13:38	103.0%	24.3963	98.7%	25.0314	24.7119	24.7451	24.8955	25.0414
3	12:14:15	102.4%	23.9763	100.4%	25.0682	24.9721	24.6158	24.9420	25.0767
x		102.8%	24.3218	99.3%	25.1520	24.9698	24.8126	25.0103	25.1760
σ		0.4%	0.3150	0.9%	0.1779	0.2567	0.2377	0.1602	0.2033
%RSD		0.4	1.2949	0.9	0.7074	1.0282	0.9581	0.6405	0.8075

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	25.4262	24.8912	99.3%	25.4798	23.6658	25.4510	24.5424	99.8%
2	12:13:38	24.5112	24.8600	100.6%	24.0787	24.6866	25.0870	23.8752	100.9%
3	12:14:15	24.3309	25.4203	98.5%	25.1746	24.8341	24.4187	24.7232	100.4%
x		24.7561	25.0571	99.5%	24.9110	24.3955	24.9856	24.3803	100.4%
σ		0.5873	0.3149	1.1%	0.7368	0.6362	0.5236	0.4467	0.6%
%RSD		2.3722	1.2566	1.1	2.9576	2.6080	2.0955	1.8320	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:13:02	100.1%	24.8115	24.6011	100.4%	24.7936	24.7451	24.9171
2	12:13:38	101.0%	25.0560	24.7475	101.5%	24.8937	24.8532	24.9575
3	12:14:15	100.2%	25.1360	25.1246	102.0%	25.0731	24.9676	25.0217
x		100.5%	25.0012	24.8244	101.3%	24.9201	24.8553	24.9654
σ		0.5%	0.1691	0.2701	0.8%	0.1416	0.1112	0.0527
%RSD		0.5	0.6763	1.0879	0.8	0.5683	0.4475	0.2111

ICB1 8/3/2016 12:20:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	107.2%	0.0001	102.1%	0.0024	0.0081	0.0038	0.0063	0.0098
2	12:21:22	107.0%	0.0116	101.2%	0.0120	0.0280	0.0161	0.0073	0.0153
3	12:21:58	110.3%	0.0141	102.1%	0.0067	0.0243	0.0170	0.0137	0.0156
x		108.2%	0.0086	101.8%	0.0070	0.0201	0.0123	0.0091	0.0136
σ		1.8%	0.0075	0.5%	0.0048	0.0106	0.0074	0.0040	0.0033
%RSD		1.7	86.8181	0.5	68.3704	52.7547	59.9918	44.4749	24.2204

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	0.0265	-0.0084	99.0%	-0.0611	0.0981	0.3953	-0.1333	100.0%
2	12:21:22	-0.0401	0.0044	100.5%	-0.0429	0.0278	-0.1792	-0.1701	100.8%
3	12:21:58	-0.0060	0.0078	102.1%	-0.0233	-0.0526	-0.0332	-0.1967	100.5%
x		-0.0065	0.0013	100.6%	-0.0424	0.0244	0.0610	-0.1667	100.4%
σ		0.0333	0.0086	1.6%	0.0189	0.0754	0.2986	0.0318	0.4%
%RSD		508.7854	668.2865	1.6	44.5559	308.7781	489.9042	19.1051	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:20:46	99.4%	0.0179	0.0213	97.2%	0.0014	0.0025	0.0007
2	12:21:22	100.0%	0.0339	0.0349	99.2%	0.0116	0.0140	0.0109
3	12:21:58	99.9%	0.0347	0.0363	99.3%	0.0158	0.0137	0.0139
x		99.8%	0.0288	0.0308	98.6%	0.0096	0.0101	0.0085
σ		0.3%	0.0095	0.0083	1.2%	0.0074	0.0066	0.0069
%RSD		0.3	32.7875	26.9649	1.2	76.9747	65.4806	81.1057

ICB1 8/3/2016 12:24:59 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	110.6%	0.0026	99.8%	-0.0074	0.0298	0.0063	0.0056	0.0190
2	12:25:35	108.8%	0.0004	100.5%	0.0063	0.0006	0.0050	0.0081	0.0159
3	12:26:12	102.2%	0.0017	99.0%	-0.0033	0.0089	0.0097	0.0088	0.0048
x		107.2%	0.0016	99.7%	-0.0015	0.0131	0.0070	0.0075	0.0132
σ		4.4%	0.0011	0.8%	0.0070	0.0150	0.0025	0.0017	0.0075
%RSD		4.1	70.5814	0.8	471.6372	114.5867	35.3464	22.8026	56.7756

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	0.0021	0.0154	100.0%	0.0058	0.1201	0.4180	0.1044	100.4%
2	12:25:35	0.0019	0.0063	100.1%	-0.0597	0.0417	-0.1792	-0.1886	101.4%
3	12:26:12	-0.0335	-0.0012	99.9%	0.0009	-0.0223	-0.0222	-0.0466	101.5%
x		-0.0099	0.0068	100.0%	-0.0177	0.0465	0.0722	-0.0436	101.1%
σ		0.0205	0.0083	0.1%	0.0365	0.0713	0.3096	0.1465	0.6%
%RSD		207.6824	121.3553	0.1	206.5850	153.3237	428.9475	336.0915	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:24:59	99.6%	0.0047	0.0058	98.3%	0.0052	0.0034	0.0032
2	12:25:35	100.0%	0.0117	0.0142	99.9%	0.0039	0.0050	0.0048
3	12:26:12	100.8%	0.0110	0.0155	100.7%	0.0058	0.0080	0.0055
x		100.2%	0.0091	0.0118	99.7%	0.0050	0.0055	0.0045
σ		0.6%	0.0038	0.0053	1.2%	0.0010	0.0023	0.0012
%RSD		0.6	42.0297	44.6646	1.2	19.5712	42.3099	26.4761

CCB1 8/3/2016 12:28:29 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	111.0%	0.0071	101.7%	-0.0070	0.0514	0.0033	0.0079	0.0212
2	12:29:06	105.3%	0.0042	100.4%	0.0085	-0.0057	0.0022	0.0035	0.0109
3	12:29:42	103.8%	0.0007	99.8%	0.0077	0.0216	0.0067	-0.0003	0.0087
x		106.7%	0.0040	100.6%	0.0031	0.0225	0.0041	0.0037	0.0136
σ		3.8%	0.0032	1.0%	0.0088	0.0285	0.0024	0.0041	0.0067
%RSD		3.6	79.2905	1.0	285.9216	127.1398	58.4338	111.1530	48.9774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	0.0015	0.0123	100.3%	-0.0149	-0.0094	-0.0782	-0.0558	100.0%
2	12:29:06	-0.0042	-0.0016	100.3%	-0.0363	0.1562	0.0573	0.0007	101.8%
3	12:29:42	-0.0519	0.0286	100.7%	0.0115	-0.0623	-0.0714	-0.0370	100.7%
x		-0.0182	0.0131	100.4%	-0.0132	0.0282	-0.0308	-0.0307	100.8%
σ		0.0293	0.0151	0.3%	0.0239	0.1140	0.0763	0.0288	0.9%
%RSD		160.8221	115.6262	0.3	180.8062	404.6443	248.0252	93.8789	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:29	99.7%	-0.0017	0.0016	98.6%	0.0018	0.0044	0.0024
2	12:29:06	101.1%	0.0070	0.0051	100.3%	0.0010	0.0030	0.0029
3	12:29:42	100.9%	0.0071	0.0073	100.9%	0.0049	0.0060	0.0041
x		100.6%	0.0041	0.0047	99.9%	0.0026	0.0045	0.0031
σ		0.7%	0.0051	0.0029	1.2%	0.0021	0.0015	0.0008
%RSD		0.7	122.8286	61.8019	1.2	80.4608	33.1447	27.1193

LLICVW 8/3/2016 12:32:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	105.5%	0.0214	99.4%	0.1749	0.1826	0.0967	0.0995	0.4898
2	12:32:36	104.4%	0.0205	98.9%	0.1729	0.1699	0.1010	0.1020	0.4672
3	12:33:13	100.1%	0.0262	97.4%	0.1729	0.1709	0.0914	0.1012	0.4605
x		103.3%	0.0227	98.6%	0.1736	0.1745	0.0964	0.1009	0.4725
σ		2.9%	0.0031	1.0%	0.0011	0.0071	0.0048	0.0013	0.0154
%RSD		2.8	13.5714	1.1	0.6617	4.0485	5.0033	1.2780	3.2514

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	0.3191	0.4826	99.6%	0.5424	1.1331	1.1067	1.1845	99.2%
2	12:32:36	0.4231	0.5021	99.2%	0.5253	1.0036	1.1257	0.9504	101.2%
3	12:33:13	0.6294	0.4790	99.1%	0.4133	0.9666	0.7446	0.7906	100.8%
x		0.4572	0.4879	99.3%	0.4937	1.0344	0.9923	0.9752	100.4%
σ		0.1579	0.0124	0.3%	0.0701	0.0874	0.2147	0.1981	1.0%
%RSD		34.5465	2.5491	0.3	14.2022	8.4527	21.6389	20.3127	1.0

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:00	99.4%	0.0491	0.0517	98.2%	0.0228	0.0191	0.0219
2	12:32:36	100.9%	0.0556	0.0511	100.3%	0.0183	0.0156	0.0188
3	12:33:13	100.2%	0.0450	0.0506	101.1%	0.0194	0.0199	0.0203
x		100.2%	0.0499	0.0511	99.9%	0.0202	0.0182	0.0203
σ		0.8%	0.0053	0.0006	1.5%	0.0024	0.0023	0.0016
%RSD		0.8	10.6827	1.0801	1.5	11.7732	12.6217	7.6566

LRSTD 8/3/2016 12:35:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	101.6%	204.6970	97.7%	196.8791	199.3838	202.7716	202.3057	214.8368
2	12:36:03	99.4%	196.6304	96.7%	201.8646	196.0216	205.1825	202.5141	214.2862
3	12:36:40	94.0%	208.8669	94.0%	199.4093	197.9521	204.4202	202.3690	215.4034
x		98.3%	203.3981	96.1%	199.3843	197.7858	204.1248	202.3963	214.8422
σ		3.9%	6.2208	1.9%	2.4928	1.6872	1.2323	0.1068	0.5586
%RSD		4.0	3.0584	2.0	1.2503	0.8531	0.6037	0.0528	0.2600

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	211.0382	208.7631	98.1%	213.5307	218.0449	219.4838	222.4606	99.3%
2	12:36:03	209.1400	208.0922	98.1%	212.9448	217.7150	224.0242	221.9674	99.7%
3	12:36:40	208.3781	210.3120	98.8%	211.0625	213.6693	220.4988	217.5610	99.2%
x		209.5188	209.0557	98.3%	212.5127	216.4764	221.3356	220.6630	99.4%
σ		1.3699	1.1385	0.4%	1.2896	2.4366	2.3831	2.6977	0.3%
%RSD		0.6538	0.5446	0.4	0.6068	1.1256	1.0767	1.2226	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:35:26	105.9%	201.4358	199.6222	100.9%	204.9497	204.0435	207.6721
2	12:36:03	105.4%	203.0798	201.2665	102.6%	204.3710	201.9004	206.6079
3	12:36:40	105.8%	201.5785	200.9491	102.7%	204.9323	204.0668	208.2962
x		105.7%	202.0314	200.6126	102.1%	204.7510	203.3369	207.5254
σ		0.2%	0.9108	0.8723	1.0%	0.3292	1.2441	0.8536
%RSD		0.2	0.4508	0.4348	1.0	0.1608	0.6118	0.4113

ICSA 8/3/2016 12:43:01 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	101.6%	0.0188	95.9%	1.2822	1.5791	3.1617	2.3884	2.0381
2	12:43:38	101.5%	0.0375	94.7%	1.3082	1.6755	3.1430	2.4570	2.0142
3	12:44:15	98.1%	0.0282	95.6%	1.3499	1.6744	3.1174	2.2806	2.1554
x		100.4%	0.0282	95.4%	1.3134	1.6430	3.1407	2.3754	2.0692
σ		2.0%	0.0094	0.7%	0.0341	0.0553	0.0222	0.0889	0.0755
%RSD		2.0	33.3335	0.7	2.5976	3.3676	0.7080	3.7433	3.6502

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	4.3331	1.8773	92.0%	-0.0882	1.5635	-0.2048	-0.5576	88.1%
2	12:43:38	4.3893	1.9567	94.0%	-0.1832	1.5918	-0.2664	-0.9274	90.2%
3	12:44:15	4.7103	1.8253	95.2%	-0.2088	1.7615	0.1393	-0.8771	90.8%
x		4.4776	1.8864	93.7%	-0.1601	1.6389	-0.1106	-0.7873	89.7%
σ		0.2035	0.0661	1.6%	0.0635	0.1071	0.2186	0.2005	1.4%
%RSD		4.5446	3.5066	1.7	39.6931	6.5335	197.5957	25.4691	1.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:01	90.8%	0.0496	0.0463	91.8%	0.1579	0.1497	0.1512
2	12:43:38	93.1%	0.0637	0.0737	93.8%	0.1782	0.1683	0.1738
3	12:44:15	93.4%	0.0592	0.0580	94.5%	0.1824	0.1719	0.1738
x		92.4%	0.0575	0.0594	93.4%	0.1728	0.1633	0.1663
σ		1.4%	0.0072	0.0137	1.4%	0.0131	0.0119	0.0131
%RSD		1.5	12.5572	23.1478	1.5	7.5856	7.2761	7.8685

ICSAB 8/3/2016 12:46:49 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	107.3%	0.0179	97.6%	50.0934	50.2985	49.8108	48.3987	27.2011
2	12:47:26	103.7%	0.0321	98.0%	49.2970	49.3955	48.2700	47.3286	26.4547
3	12:48:02	97.9%	0.0334	95.5%	49.9994	49.8824	48.2139	47.4552	26.5532
x		103.0%	0.0278	97.0%	49.7966	49.8588	48.7649	47.7275	26.7363
σ		4.7%	0.0086	1.3%	0.4352	0.4520	0.9062	0.5847	0.4055
%RSD		4.6	30.9751	1.4	0.8740	0.9065	1.8583	1.2251	1.5168

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	27.7560	25.1930	95.1%	25.0432	25.8661	23.9499	23.6767	91.8%
2	12:47:26	27.2295	25.7721	96.2%	24.3613	25.2792	23.0851	23.5271	91.3%
3	12:48:02	27.3969	25.4775	95.0%	24.0746	26.2777	24.2956	23.4515	92.2%
x		27.4608	25.4809	95.4%	24.4930	25.8077	23.7769	23.5518	91.8%
σ		0.2690	0.2896	0.7%	0.4975	0.5018	0.6235	0.1146	0.5%
%RSD		0.9794	1.1365	0.7	2.0313	1.9444	2.6225	0.4867	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:46:49	94.4%	0.0336	0.0286	95.5%	0.1365	0.1287	0.1311
2	12:47:26	96.0%	0.0439	0.0453	97.7%	0.1486	0.1434	0.1419
3	12:48:02	95.7%	0.0410	0.0388	98.3%	0.1429	0.1363	0.1374
x		95.4%	0.0395	0.0376	97.1%	0.1427	0.1361	0.1368
σ		0.8%	0.0053	0.0084	1.5%	0.0060	0.0073	0.0054
%RSD		0.9	13.4781	22.3689	1.5	4.2366	5.3721	3.9381

KQ1607936-01 8/3/2016 12:50:30 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	102.3%	0.0025	98.3%	-0.0029	0.0450	0.0188	0.0157	-0.0137
2	12:51:06	99.2%	0.0130	95.1%	0.0023	0.0585	0.0305	0.0244	0.0029
3	12:51:43	99.7%	0.0078	96.3%	-0.0026	0.0754	0.0254	0.0139	-0.0008
x		100.4%	0.0078	96.6%	-0.0011	0.0596	0.0249	0.0180	-0.0039
σ		1.7%	0.0052	1.6%	0.0029	0.0152	0.0059	0.0056	0.0087
%RSD		1.7	67.5617	1.7	270.5133	25.4882	23.6067	31.2875	226.5048

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	0.0516	-0.0247	98.8%	0.0098	1.8396	-0.2022	0.0993	98.0%
2	12:51:06	0.0055	-0.0100	97.2%	0.0502	1.4686	-0.4213	0.0789	98.7%
3	12:51:43	0.0181	-0.0110	96.6%	0.0295	1.6547	-0.0033	0.0010	97.6%
x		0.0251	-0.0152	97.5%	0.0298	1.6543	-0.2089	0.0597	98.1%
σ		0.0238	0.0082	1.1%	0.0202	0.1855	0.2091	0.0519	0.5%
%RSD		95.0914	53.9854	1.2	67.6269	11.2146	100.0691	86.8512	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:30	97.7%	-0.0027	-0.0013	100.1%	0.0081	0.0070	0.0070
2	12:51:06	98.3%	0.0034	0.0040	101.8%	0.0096	0.0106	0.0086
3	12:51:43	98.5%	0.0036	0.0040	102.2%	0.0079	0.0093	0.0093
x		98.1%	0.0015	0.0022	101.4%	0.0085	0.0090	0.0083
σ		0.4%	0.0036	0.0031	1.1%	0.0010	0.0018	0.0012
%RSD		0.4	242.7339	136.9929	1.1	11.3145	19.9029	13.8756

KQ1607936-02 8/3/2016 1:06:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	105.3%	2.4012	97.2%	25.4300	25.7931	12.6477	12.7929	25.5417
2	13:06:40	101.2%	2.4695	96.0%	25.4468	25.3819	12.6981	12.9161	25.6474
3	13:07:17	94.7%	2.6176	95.5%	25.1108	25.1650	12.6703	12.6215	25.3035
x		100.4%	2.4961	96.2%	25.3292	25.4467	12.6720	12.7769	25.4975
σ		5.4%	0.1106	0.9%	0.1893	0.3190	0.0253	0.1479	0.1761
%RSD		5.4	4.4322	0.9	0.7475	1.2536	0.1993	1.1577	0.6907

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	29.5367	27.8183	98.1%	50.3137	51.2640	50.5695	49.4048	98.4%
2	13:06:40	30.0013	28.0722	97.3%	51.4177	50.9710	51.6469	50.3160	99.7%
3	13:07:17	29.0291	28.0459	98.1%	50.5450	51.2706	50.0453	48.4183	98.3%
x		29.5224	27.9788	97.8%	50.7588	51.1685	50.7539	49.3797	98.8%
σ		0.4863	0.1396	0.4%	0.5822	0.1711	0.8166	0.9491	0.8%
%RSD		1.6471	0.4990	0.4	1.1470	0.3344	1.6089	1.9221	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:04	98.1%	50.7364	50.5130	101.5%	50.2519	51.6037	50.9776
2	13:06:40	99.7%	50.7681	50.1603	102.7%	50.4259	51.9127	51.3935
3	13:07:17	98.2%	51.6057	51.1017	102.9%	50.6085	52.2601	51.7411
x		98.7%	51.0367	50.5917	102.4%	50.4288	51.9255	51.3707
σ		0.9%	0.4930	0.4756	0.7%	0.1783	0.3284	0.3823
%RSD		0.9	0.9660	0.9401	0.7	0.3535	0.6324	0.7441

KQ1607936-03 8/3/2016 1:10:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	95.0%	2.5619	95.9%	26.0268	25.4634	12.7333	12.8741	25.7640
2	13:10:38	94.0%	2.5442	96.3%	25.5635	25.3786	12.6549	12.7855	26.2329
3	13:11:15	91.4%	2.5815	94.4%	25.4087	25.1575	12.7694	12.6487	25.6944
x		93.5%	2.5625	95.5%	25.6663	25.3331	12.7192	12.7695	25.8971
σ		1.8%	0.0187	1.0%	0.3216	0.1579	0.0586	0.1135	0.2929
%RSD		2.0	0.7279	1.0	1.2531	0.6234	0.4605	0.8892	1.1310

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	29.3930	28.5213	97.0%	51.2213	52.3733	48.9912	51.8164	98.6%
2	13:10:38	29.7539	28.5697	96.2%	51.2684	52.0815	50.2762	49.8779	98.0%
3	13:11:15	28.8391	28.3598	96.9%	51.7714	51.1347	48.6731	52.3780	98.5%
x		29.3287	28.4836	96.7%	51.4204	51.8632	49.3135	51.3574	98.4%
σ		0.4608	0.1099	0.4%	0.3049	0.6475	0.8487	1.3117	0.3%
%RSD		1.5711	0.3859	0.4	0.5929	1.2485	1.7211	2.5540	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:10:02	98.3%	51.6857	51.1157	101.1%	50.9121	52.2340	51.8083
2	13:10:38	99.1%	51.6491	51.2691	103.2%	50.7410	52.2848	51.7386
3	13:11:15	99.3%	51.9209	51.4271	102.6%	51.2400	52.7772	52.1288
x		98.9%	51.7519	51.2706	102.3%	50.9644	52.4320	51.8919
σ		0.5%	0.1475	0.1557	1.1%	0.2536	0.3000	0.2081
%RSD		0.5	0.2850	0.3037	1.1	0.4975	0.5722	0.4011

K1606832-006 8/3/2016 1:14:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.7%	0.0026	94.9%	0.0341	0.0555	0.0838	0.0925	1.2994
2	13:15:32	95.6%	-0.0008	93.3%	0.0434	0.0808	0.0920	0.0932	1.3435
3	13:16:09	98.6%	0.0012	93.6%	0.0474	0.0723	0.1028	0.0945	1.2021
x		97.0%	0.0010	93.9%	0.0416	0.0695	0.0929	0.0934	1.2817
σ		1.5%	0.0017	0.8%	0.0068	0.0129	0.0096	0.0010	0.0723
%RSD		1.6	174.3820	0.9	16.2806	18.4912	10.2963	1.0567	5.6436

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	1.3125	1.1663	95.8%	0.0330	1.8212	-0.3612	0.0322	96.2%
2	13:15:32	1.3162	1.1964	96.3%	0.0359	1.7280	-0.1651	0.0914	97.1%
3	13:16:09	1.1767	1.2310	94.9%	0.0173	1.9458	-0.2334	-0.0072	96.6%
x		1.2684	1.1979	95.7%	0.0287	1.8317	-0.2533	0.0388	96.6%
σ		0.0795	0.0324	0.7%	0.0100	0.1093	0.0995	0.0496	0.5%
%RSD		6.2666	2.7064	0.8	34.8797	5.9655	39.3030	127.9914	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:14:55	96.2%	0.0152	0.0168	97.8%	0.0311	0.0269	0.0279
2	13:15:32	96.8%	0.0216	0.0182	99.0%	0.0318	0.0332	0.0299
3	13:16:09	95.9%	0.0211	0.0168	99.7%	0.0309	0.0316	0.0324
x		96.3%	0.0193	0.0173	98.9%	0.0312	0.0306	0.0301
σ		0.5%	0.0035	0.0008	1.0%	0.0005	0.0033	0.0023
%RSD		0.5	18.3656	4.6145	1.0	1.5558	10.6389	7.6294

K1606832-006L 8/3/2016 1:18:30 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	105.5%	0.0015	94.6%	-0.0014	0.0012	0.0180	0.0234	0.2083
2	13:19:06	98.6%	0.0007	96.0%	-0.0132	0.0061	0.0165	0.0240	0.2564
3	13:19:43	97.2%	0.0030	96.2%	-0.0033	-0.0153	0.0211	0.0021	0.2383
x		100.4%	0.0017	95.6%	-0.0060	-0.0027	0.0186	0.0165	0.2343
σ		4.4%	0.0012	0.8%	0.0063	0.0112	0.0024	0.0125	0.0243
%RSD		4.4	67.1444	0.9	106.1766	420.4207	12.6811	75.8328	10.3608

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	0.2409	0.2264	96.6%	0.1141	0.2841	-0.2150	0.2385	96.2%
2	13:19:06	0.2969	0.2335	98.0%	0.0442	0.4606	-0.1752	0.1882	96.9%
3	13:19:43	0.1546	0.2749	96.2%	0.0019	0.4979	-0.1567	0.0904	97.8%
x		0.2308	0.2449	96.9%	0.0534	0.4142	-0.1823	0.1724	96.9%
σ		0.0717	0.0262	0.9%	0.0566	0.1142	0.0298	0.0753	0.8%
%RSD		31.0668	10.6856	1.0	106.0825	27.5687	16.3219	43.6889	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:30	96.5%	-0.0131	-0.0083	96.7%	0.0093	0.0059	0.0078
2	13:19:06	97.8%	-0.0077	-0.0049	99.0%	0.0101	0.0095	0.0081
3	13:19:43	97.7%	-0.0072	-0.0075	99.8%	0.0099	0.0119	0.0096
x		97.4%	-0.0093	-0.0069	98.5%	0.0097	0.0091	0.0085
σ		0.7%	0.0033	0.0018	1.6%	0.0004	0.0030	0.0010
%RSD		0.7	35.2388	25.9221	1.6	4.4386	33.2716	11.2575

K1606832-006A 8/3/2016 1:22:03 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	99.2%	20.4433	96.8%	21.1936	21.0694	21.2988	21.4634	22.3573
2	13:22:40	98.9%	20.2169	92.0%	21.8326	21.3973	21.5108	21.4226	22.3424
3	13:23:17	99.1%	20.1481	95.6%	21.2707	21.1500	21.2476	20.9309	22.5631
x		99.1%	20.2694	94.8%	21.4323	21.2055	21.3524	21.2723	22.4209
σ		0.2%	0.1545	2.5%	0.3488	0.1709	0.1395	0.2964	0.1233
%RSD		0.2	0.7621	2.7	1.6275	0.8059	0.6534	1.3932	0.5501

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	22.5175	22.2216	96.0%	21.1216	22.2181	20.4610	21.6878	96.2%
2	13:22:40	22.3645	22.2692	96.4%	21.0818	22.6540	20.4815	20.6758	96.2%
3	13:23:17	21.6850	21.9754	95.7%	21.2072	21.7388	19.4586	20.9449	96.6%
x		22.1890	22.1554	96.0%	21.1369	22.2036	20.1337	21.1028	96.4%
σ		0.4431	0.1577	0.4%	0.0641	0.4578	0.5847	0.5242	0.2%
%RSD		1.9970	0.7117	0.4	0.3031	2.0617	2.9042	2.4838	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:03	97.2%	21.4180	21.3357	98.5%	21.2632	21.1367	21.1585
2	13:22:40	96.3%	21.7266	21.6745	100.7%	21.1525	21.1633	21.2366
3	13:23:17	97.2%	21.5013	21.5065	100.0%	21.3760	21.3954	21.4088
x		96.9%	21.5486	21.5056	99.8%	21.2639	21.2318	21.2680
σ		0.5%	0.1596	0.1694	1.1%	0.1117	0.1423	0.1280
%RSD		0.5	0.7408	0.7877	1.1	0.5253	0.6700	0.6020

K1606956-012 8/3/2016 1:25:52 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	99.5%	0.0096	94.7%	0.1052	0.0923	0.1495	0.1523	1.2404
2	13:26:29	90.0%	0.0186	93.0%	0.1238	0.1109	0.1700	0.1785	1.1736
3	13:27:06	90.9%	0.0092	93.0%	0.0989	0.0953	0.1575	0.1547	1.2130
x		93.5%	0.0124	93.6%	0.1093	0.0995	0.1590	0.1618	1.2090
σ		5.2%	0.0054	1.0%	0.0130	0.0100	0.0103	0.0145	0.0336
%RSD		5.6	43.0305	1.1	11.8497	10.0192	6.5060	8.9429	2.7774

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	1.1149	1.2133	95.7%	0.1412	1.6068	-0.3806	0.1715	96.5%
2	13:26:29	1.0217	1.1553	95.4%	0.0321	2.0865	-0.2696	0.1732	96.0%
3	13:27:06	1.1759	1.1377	95.1%	-0.0166	2.0111	-0.3613	-0.1070	96.2%
x		1.1042	1.1688	95.4%	0.0522	1.9015	-0.3372	0.0793	96.2%
σ		0.0776	0.0396	0.3%	0.0808	0.2580	0.0593	0.1613	0.2%
%RSD		7.0296	3.3879	0.3	154.7012	13.5669	17.5914	203.4871	0.2

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:25:52	94.8%	0.0103	0.0106	97.7%	0.0700	0.0694	0.0693
2	13:26:29	95.0%	0.0210	0.0178	99.3%	0.0792	0.0804	0.0784
3	13:27:06	95.7%	0.0123	0.0106	99.7%	0.0714	0.0722	0.0719
x		95.2%	0.0145	0.0130	98.9%	0.0735	0.0740	0.0732
σ		0.4%	0.0057	0.0041	1.1%	0.0050	0.0057	0.0047
%RSD		0.5	39.2414	31.8788	1.1	6.7977	7.7116	6.4348

K1607019-010 8/3/2016 1:29:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	96.3%	0.0035	94.2%	0.1593	0.1657	0.1542	0.1753	1.3872
2	13:30:19	96.2%	0.0027	92.3%	0.1589	0.1450	0.1548	0.1583	1.4792
3	13:30:56	91.8%	0.0072	93.3%	0.1815	0.1338	0.1533	0.1538	1.4574
x		94.8%	0.0045	93.2%	0.1666	0.1481	0.1541	0.1625	1.4413
σ		2.6%	0.0024	1.0%	0.0129	0.0162	0.0007	0.0113	0.0481
%RSD		2.7	54.1311	1.0	7.7662	10.9315	0.4604	6.9716	3.3353

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	1.3825	1.3779	95.3%	-0.0471	2.1025	-0.1488	-0.0176	95.7%
2	13:30:19	1.4152	1.3839	96.5%	-0.0230	1.9154	0.0007	0.0314	96.1%
3	13:30:56	1.4258	1.4140	94.6%	-0.0776	2.1817	-0.0423	-0.0873	96.5%
x		1.4078	1.3919	95.5%	-0.0492	2.0665	-0.0635	-0.0245	96.1%
σ		0.0225	0.0193	1.0%	0.0274	0.1367	0.0770	0.0597	0.4%
%RSD		1.6014	1.3890	1.0	55.5913	6.6169	121.2961	243.4976	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:42	94.8%	0.0015	0.0023	97.6%	0.0298	0.0244	0.0268
2	13:30:19	96.3%	-0.0009	0.0045	99.9%	0.0337	0.0316	0.0295
3	13:30:56	96.1%	0.0032	0.0013	99.7%	0.0342	0.0312	0.0294
x		95.7%	0.0013	0.0027	99.1%	0.0326	0.0291	0.0286
σ		0.8%	0.0021	0.0017	1.2%	0.0024	0.0040	0.0015
%RSD		0.8	163.3964	61.8161	1.3	7.3886	13.8609	5.2801

K1607034-011 8/3/2016 1:33:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	101.7%	0.0030	95.0%	0.0994	0.0948	0.0722	0.0665	0.5486
2	13:33:58	98.2%	0.0008	93.9%	0.0850	0.0696	0.0706	0.0772	0.4684
3	13:34:35	91.5%	0.0049	94.2%	0.0909	0.1020	0.0773	0.0808	0.5383
x		97.1%	0.0029	94.4%	0.0918	0.0888	0.0734	0.0749	0.5184
σ		5.1%	0.0021	0.6%	0.0072	0.0170	0.0035	0.0075	0.0436
%RSD		5.3	72.2323	0.6	7.8586	19.1852	4.7857	9.9715	8.4150

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	0.5158	0.5268	94.8%	-0.2155	2.4683	0.0106	-0.2166	95.4%
2	13:33:58	0.4752	0.4553	94.4%	0.0041	2.0244	-0.1542	-0.0086	96.3%
3	13:34:35	0.5166	0.5355	94.8%	0.0081	1.9358	-0.1252	-0.0674	96.0%
x		0.5025	0.5059	94.7%	-0.0678	2.1429	-0.0896	-0.0975	95.9%
σ		0.0237	0.0440	0.2%	0.1279	0.2853	0.0880	0.1072	0.5%
%RSD		4.7171	8.6997	0.3	188.7278	13.3154	98.1413	109.9461	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:33:21	95.4%	-0.0022	-0.0062	97.8%	0.0093	0.0128	0.0102
2	13:33:58	96.4%	-0.0030	-0.0004	99.4%	0.0100	0.0097	0.0099
3	13:34:35	96.3%	-0.0070	-0.0017	100.0%	0.0119	0.0131	0.0113
x		96.1%	-0.0041	-0.0028	99.1%	0.0104	0.0118	0.0104
σ		0.5%	0.0026	0.0030	1.2%	0.0013	0.0019	0.0007
%RSD		0.6	63.1923	108.8738	1.2	12.7849	15.9757	7.0552

CCV2 8/3/2016 1:36:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	94.9%	25.1550	96.4%	25.0082	25.0840	25.3274	24.9542	26.0927
2	13:37:32	96.5%	25.0253	94.9%	25.2027	25.0816	25.1350	25.2209	25.3994
3	13:38:08	92.5%	25.6392	94.4%	25.1441	25.2254	25.2308	25.5684	25.9205
x		94.6%	25.2732	95.2%	25.1183	25.1303	25.2311	25.2478	25.8042
σ		2.0%	0.3235	1.0%	0.0998	0.0824	0.0962	0.3080	0.3609
%RSD		2.1	1.2802	1.1	0.3973	0.3277	0.3812	1.2200	1.3988

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	26.0432	25.3710	96.3%	25.4587	24.8189	25.3277	24.9381	97.9%
2	13:37:32	25.0095	25.0716	97.0%	25.2400	24.7289	24.8517	24.8204	99.1%
3	13:38:08	25.3300	25.7157	96.3%	24.7102	24.8569	25.0834	24.0360	99.1%
x		25.4609	25.3861	96.5%	25.1363	24.8016	25.0876	24.5982	98.7%
σ		0.5291	0.3223	0.4%	0.3849	0.0657	0.2380	0.4904	0.7%
%RSD		2.0782	1.2698	0.4	1.5311	0.2651	0.9488	1.9936	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:55	97.7%	25.0925	24.8617	100.0%	25.3336	25.0709	25.3316
2	13:37:32	99.2%	25.0185	25.1465	102.0%	25.2907	25.2712	25.3645
3	13:38:08	99.7%	25.0802	25.1635	102.2%	25.4072	25.2456	25.4113
x		98.9%	25.0637	25.0572	101.4%	25.3439	25.1959	25.3692
σ		1.0%	0.0397	0.1696	1.2%	0.0589	0.1090	0.0400
%RSD		1.1	0.1582	0.6768	1.2	0.2324	0.4326	0.1578

CCB2 8/3/2016 1:44:43 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	100.0%	0.0065	99.6%	0.0123	0.0145	0.0076	0.0089	0.0073
2	13:45:19	99.0%	0.0092	99.1%	-0.0092	0.0211	0.0157	0.0092	0.0079
3	13:45:56	98.3%	0.0093	96.6%	0.0025	0.0131	0.0171	0.0187	0.0238
x		99.1%	0.0083	98.4%	0.0019	0.0162	0.0134	0.0123	0.0130
σ		0.8%	0.0016	1.6%	0.0107	0.0043	0.0051	0.0056	0.0094
%RSD		0.9	19.1081	1.6	574.8117	26.2100	38.1735	45.3779	71.9169

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	-0.0133	0.0043	96.9%	-0.0960	0.1204	-0.1028	-0.2724	98.7%
2	13:45:19	0.0217	0.0237	98.5%	0.0864	-0.0562	-0.0657	0.1947	99.3%
3	13:45:56	-0.0259	-0.0173	97.9%	-0.0730	-0.0021	-0.0763	-0.3099	99.0%
x		-0.0059	0.0035	97.7%	-0.0275	0.0207	-0.0816	-0.1292	99.0%
σ		0.0247	0.0205	0.8%	0.0993	0.0905	0.0191	0.2811	0.3%
%RSD		421.2734	578.2496	0.8	360.6172	437.2982	23.4582	217.6102	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:44:43	97.7%	0.0147	0.0160	98.0%	0.0098	0.0065	0.0058
2	13:45:19	99.5%	0.0153	0.0220	100.3%	0.0112	0.0108	0.0093
3	13:45:56	99.4%	0.0215	0.0214	101.3%	0.0077	0.0154	0.0091
x		98.9%	0.0172	0.0198	99.8%	0.0096	0.0109	0.0081
σ		1.0%	0.0038	0.0033	1.7%	0.0017	0.0044	0.0020
%RSD		1.0	21.8507	16.7311	1.7	18.1065	40.5944	24.5837

K1607146-009 8/3/2016 1:48:33 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	103.7%	0.0003	98.8%	0.0889	0.1072	0.2164	0.2181	2.4863
2	13:49:11	101.8%	0.0034	95.3%	0.0803	0.0691	0.2130	0.2280	2.4779
3	13:49:48	97.9%	0.0038	93.9%	0.0778	0.0921	0.2088	0.2014	2.4588
x		101.1%	0.0025	96.0%	0.0823	0.0895	0.2127	0.2159	2.4744
σ		3.0%	0.0019	2.5%	0.0058	0.0192	0.0038	0.0135	0.0141
%RSD		2.9	75.1372	2.6	7.0419	21.4774	1.7907	6.2367	0.5702

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	2.3237	2.3520	95.8%	-0.1079	2.1956	-0.1327	-0.1158	96.7%
2	13:49:11	2.2439	2.3731	95.2%	-0.0226	1.8031	-0.1323	-0.0868	96.8%
3	13:49:48	2.3458	2.3726	96.2%	-0.0453	1.9041	-0.0042	-0.0369	97.0%
x		2.3045	2.3659	95.7%	-0.0586	1.9676	-0.0897	-0.0799	96.9%
σ		0.0536	0.0121	0.5%	0.0442	0.2039	0.0741	0.0399	0.1%
%RSD		2.3260	0.5106	0.5	75.4141	10.3604	82.5619	49.9653	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:33	96.4%	0.0024	0.0082	97.3%	0.0185	0.0170	0.0167
2	13:49:11	97.5%	0.0145	0.0169	99.9%	0.0159	0.0195	0.0172
3	13:49:48	96.8%	0.0089	0.0126	99.7%	0.0171	0.0149	0.0156
x		96.9%	0.0086	0.0126	99.0%	0.0172	0.0171	0.0165
σ		0.6%	0.0060	0.0044	1.4%	0.0013	0.0023	0.0008
%RSD		0.6	69.9296	34.5970	1.4	7.5594	13.2104	4.8907

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	99.2%	0.0066	95.9%	0.0715	0.0592	0.2383	0.2227	0.7695
2	13:52:53	97.4%	0.0086	93.6%	0.0664	0.0850	0.2498	0.2235	0.8533
3	13:53:30	96.2%	0.0071	91.9%	0.0567	0.0650	0.2336	0.2272	0.8118
x		97.6%	0.0074	93.8%	0.0649	0.0697	0.2406	0.2245	0.8115
σ		1.6%	0.0010	2.0%	0.0075	0.0135	0.0083	0.0024	0.0419
%RSD		1.6	14.1099	2.1	11.5789	19.4325	3.4545	1.0820	5.1579

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	0.8830	0.8188	95.7%	-0.0446	1.7181	-0.3807	-0.1660	95.7%
2	13:52:53	0.8312	0.8032	95.6%	0.0293	1.8337	0.0318	0.0230	97.3%
3	13:53:30	0.7752	0.7330	94.3%	0.0521	1.9053	-0.0592	0.1821	95.9%
x		0.8298	0.7850	95.2%	0.0122	1.8190	-0.1360	0.0130	96.3%
σ		0.0539	0.0457	0.8%	0.0506	0.0944	0.2167	0.1743	0.9%
%RSD		6.4968	5.8228	0.8	412.6956	5.1917	159.3228	1335.8151	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:16	95.1%	0.0020	-0.0004	96.8%	0.0152	0.0218	0.0167
2	13:52:53	96.4%	0.0029	0.0009	98.4%	0.0194	0.0162	0.0168
3	13:53:30	96.1%	-0.0003	0.0036	98.2%	0.0163	0.0206	0.0164
x		95.9%	0.0015	0.0014	97.8%	0.0170	0.0196	0.0166
σ		0.7%	0.0017	0.0021	0.9%	0.0022	0.0029	0.0002
%RSD		0.7	109.9564	151.1583	0.9	12.8493	14.9866	1.3734

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	105.1%	0.0027	98.4%	0.0568	0.0272	0.0975	0.1110	0.8500
2	13:56:34	100.1%	0.0019	96.1%	0.0697	0.0428	0.0974	0.1062	0.7501
3	13:57:11	98.5%	0.0024	97.2%	0.0751	0.0768	0.1096	0.0910	0.7711
x		101.3%	0.0023	97.2%	0.0672	0.0489	0.1015	0.1028	0.7904
σ		3.4%	0.0004	1.1%	0.0094	0.0254	0.0070	0.0104	0.0526
%RSD		3.4	17.8069	1.2	14.0002	51.8746	6.9108	10.1564	6.6610

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	0.8154	0.7149	94.4%	-0.0029	1.8903	-0.1729	0.0232	95.8%
2	13:56:34	0.6830	0.6675	95.8%	-0.1513	2.0905	-0.2512	-0.3247	96.2%
3	13:57:11	0.7910	0.6553	95.3%	-0.0626	1.9548	-0.0321	-0.0864	95.7%
x		0.7631	0.6792	95.2%	-0.0723	1.9786	-0.1521	-0.1293	95.9%
σ		0.0705	0.0314	0.7%	0.0746	0.1022	0.1110	0.1779	0.3%
%RSD		9.2341	4.6303	0.7	103.2671	5.1649	72.9896	137.5526	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:55:58	94.7%	0.0008	-0.0034	95.6%	0.0340	0.0340	0.0341
2	13:56:34	95.7%	0.0003	0.0008	97.5%	0.0356	0.0359	0.0327
3	13:57:11	95.6%	-0.0043	0.0024	98.0%	0.0295	0.0284	0.0310
x		95.3%	-0.0011	-0.0001	97.0%	0.0330	0.0328	0.0326
σ		0.5%	0.0028	0.0030	1.2%	0.0032	0.0039	0.0015
%RSD		0.6	257.8440	5433.1638	1.3	9.5936	11.7821	4.7405

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	108.2%	0.0098	98.1%	0.0672	0.0691	0.1303	0.1244	1.2645
2	14:00:13	99.6%	0.0044	96.7%	0.0595	0.0767	0.1134	0.1096	1.2753
3	14:00:50	97.9%	0.0068	94.9%	0.0752	0.0875	0.1319	0.1077	1.2561
x		101.9%	0.0070	96.6%	0.0673	0.0777	0.1252	0.1139	1.2653
σ		5.5%	0.0027	1.6%	0.0078	0.0093	0.0102	0.0091	0.0096
%RSD		5.4	38.6144	1.7	11.6520	11.9063	8.1837	8.0315	0.7572

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	1.1837	1.2131	95.6%	-0.0157	1.9058	-0.4390	-0.0971	96.1%
2	14:00:13	1.2721	1.1492	96.2%	0.0581	1.5030	0.0306	-0.1451	96.8%
3	14:00:50	1.1378	1.2129	94.7%	0.0235	1.8931	-0.2047	0.0630	96.8%
x		1.1979	1.1917	95.5%	0.0219	1.7673	-0.2044	-0.0597	96.6%
σ		0.0683	0.0369	0.8%	0.0369	0.2290	0.2348	0.1090	0.4%
%RSD		5.7021	3.0931	0.8	168.1549	12.9579	114.8950	182.3737	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:59:36	94.6%	-0.0013	-0.0010	96.0%	0.0322	0.0323	0.0330
2	14:00:13	95.4%	-0.0025	-0.0022	97.7%	0.0330	0.0332	0.0329
3	14:00:50	96.5%	0.0009	-0.0004	97.6%	0.0337	0.0356	0.0313
x		95.5%	-0.0010	-0.0012	97.1%	0.0330	0.0337	0.0324
σ		0.9%	0.0017	0.0009	0.9%	0.0007	0.0017	0.0010
%RSD		1.0	176.6463	76.7616	0.9	2.2075	5.0381	2.9697

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	104.5%	0.0108	95.1%	0.1194	0.1402	0.2111	0.2064	1.7380
2	14:03:54	98.5%	0.0046	95.8%	0.1303	0.1311	0.2088	0.2136	1.7289
3	14:04:30	100.5%	0.0077	93.4%	0.1323	0.0981	0.2321	0.2024	1.7849
x		101.2%	0.0077	94.8%	0.1273	0.1231	0.2173	0.2075	1.7506
σ		3.1%	0.0031	1.2%	0.0069	0.0221	0.0129	0.0057	0.0301
%RSD		3.0	40.6853	1.3	5.4438	17.9721	5.9172	2.7237	1.7185

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	1.8054	1.6954	95.7%	0.0497	1.8817	-0.1014	0.0409	95.3%
2	14:03:54	1.6991	1.8204	95.6%	0.0979	1.7309	-0.3085	0.2311	96.3%
3	14:04:30	1.8083	1.6960	96.2%	-0.1613	2.3790	-0.1119	-0.1457	95.9%
x		1.7710	1.7373	95.8%	-0.0046	1.9972	-0.1739	0.0421	95.9%
σ		0.0622	0.0720	0.3%	0.1379	0.3392	0.1166	0.1884	0.5%
%RSD		3.5137	4.1421	0.3	3018.6515	16.9816	67.0601	447.9371	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:17	94.2%	0.0037	-0.0036	96.1%	0.0885	0.0774	0.0858
2	14:03:54	96.2%	0.0025	0.0006	98.3%	0.0851	0.0835	0.0830
3	14:04:30	96.4%	0.0011	-0.0010	98.3%	0.0926	0.0857	0.0863
x		95.6%	0.0024	-0.0013	97.6%	0.0887	0.0822	0.0850
σ		1.2%	0.0013	0.0021	1.3%	0.0038	0.0043	0.0018
%RSD		1.3	52.7622	160.0935	1.3	4.2331	5.1992	2.0749

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	103.7%	0.0020	97.7%	0.0783	0.1060	0.0630	0.0625	1.2312
2	14:07:40	97.5%	0.0004	93.4%	0.0808	0.0539	0.0687	0.0647	1.2511
3	14:08:17	98.9%	0.0003	94.7%	0.0825	0.0568	0.0729	0.0631	1.3434
x		100.0%	0.0009	95.3%	0.0806	0.0722	0.0682	0.0634	1.2752
σ		3.2%	0.0010	2.2%	0.0021	0.0293	0.0050	0.0012	0.0598
%RSD		3.2	109.3727	2.3	2.6230	40.5345	7.2790	1.8416	4.6911

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	1.1812	1.1795	95.9%	0.0003	2.2113	-0.1459	0.1625	95.8%
2	14:07:40	1.3525	1.1847	94.9%	-0.0506	1.9848	-0.2805	-0.0069	96.7%
3	14:08:17	1.1885	1.2042	95.8%	0.0713	1.7641	-0.3432	0.1212	97.1%
x		1.2407	1.1895	95.5%	0.0070	1.9867	-0.2565	0.0923	96.5%
σ		0.0968	0.0130	0.6%	0.0612	0.2236	0.1008	0.0883	0.7%
%RSD		7.8036	1.0915	0.6	874.0161	11.2546	39.2927	95.6913	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:07:04	95.4%	-0.0040	-0.0048	95.6%	0.0141	0.0158	0.0136
2	14:07:40	96.4%	-0.0065	-0.0066	99.0%	0.0170	0.0125	0.0142
3	14:08:17	95.7%	-0.0026	-0.0049	98.7%	0.0150	0.0149	0.0140
x		95.8%	-0.0044	-0.0054	97.8%	0.0154	0.0144	0.0139
σ		0.5%	0.0020	0.0010	1.8%	0.0015	0.0017	0.0003
%RSD		0.5	45.7093	19.0705	1.9	9.8077	11.5867	2.1741

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	95.2%	0.0027	96.1%	0.1303	0.1453	0.1095	0.1068	0.4891
2	14:11:13	99.7%	0.0023	93.2%	0.1592	0.1649	0.1256	0.0987	0.4937
3	14:11:49	93.5%	0.0025	93.5%	0.1477	0.1328	0.1085	0.1162	0.5063
x		96.1%	0.0025	94.3%	0.1457	0.1477	0.1145	0.1072	0.4964
σ		3.2%	0.0002	1.6%	0.0145	0.0162	0.0096	0.0088	0.0089
%RSD		3.4	7.8230	1.7	9.9584	10.9394	8.3850	8.1675	1.7960

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	0.5249	0.4575	95.2%	0.0704	1.7255	-0.2164	-0.0672	95.8%
2	14:11:13	0.5409	0.4395	96.3%	0.0956	1.9053	-0.1627	0.1605	96.6%
3	14:11:49	0.5638	0.3880	95.5%	-0.0047	2.0711	-0.1985	-0.0856	96.1%
x		0.5432	0.4283	95.7%	0.0538	1.9007	-0.1926	0.0026	96.2%
σ		0.0195	0.0361	0.5%	0.0521	0.1728	0.0274	0.1371	0.4%
%RSD		3.5978	8.4249	0.6	96.9549	9.0939	14.2074	5290.3657	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:36	94.8%	-0.0063	-0.0068	97.1%	0.0085	0.0116	0.0097
2	14:11:13	96.4%	-0.0055	-0.0034	100.0%	0.0110	0.0126	0.0110
3	14:11:49	96.4%	-0.0065	-0.0060	100.3%	0.0094	0.0098	0.0090
x		95.9%	-0.0061	-0.0054	99.1%	0.0097	0.0113	0.0099
σ		0.9%	0.0005	0.0018	1.7%	0.0013	0.0014	0.0011
%RSD		0.9	8.7059	32.9320	1.7	13.1644	12.5821	10.7389

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	99.1%	0.0037	94.5%	0.2330	0.2037	0.2100	0.2283	1.0785
2	14:14:53	93.7%	0.0056	93.7%	0.2201	0.2079	0.2288	0.2036	1.1158
3	14:15:30	94.7%	0.0068	91.7%	0.2319	0.2026	0.2311	0.2194	1.1516
x		95.8%	0.0053	93.3%	0.2283	0.2047	0.2233	0.2171	1.1153
σ		2.9%	0.0016	1.4%	0.0072	0.0028	0.0116	0.0125	0.0365
%RSD		3.0	29.6000	1.5	3.1357	1.3836	5.1805	5.7466	3.2764

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	0.9382	1.1112	94.7%	-0.0584	2.0225	-0.0253	-0.1979	95.4%
2	14:14:53	1.0840	1.0958	94.7%	-0.0112	2.0443	-0.1775	-0.2476	96.5%
3	14:15:30	0.9445	1.0518	94.5%	0.0329	1.8158	-0.1423	0.0327	96.7%
x		0.9889	1.0863	94.6%	-0.0122	1.9609	-0.1150	-0.1376	96.2%
σ		0.0824	0.0309	0.1%	0.0457	0.1261	0.0796	0.1495	0.7%
%RSD		8.3337	2.8413	0.1	373.7535	6.4302	69.2326	108.6710	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:17	95.4%	-0.0084	-0.0065	97.1%	0.0263	0.0225	0.0234
2	14:14:53	96.5%	-0.0055	-0.0037	98.9%	0.0285	0.0299	0.0285
3	14:15:30	96.8%	-0.0081	-0.0041	100.0%	0.0272	0.0207	0.0247
x		96.2%	-0.0073	-0.0048	98.7%	0.0273	0.0244	0.0255
σ		0.7%	0.0016	0.0015	1.5%	0.0011	0.0049	0.0026
%RSD		0.8	21.7863	31.7039	1.5	3.8975	20.0326	10.3483

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	98.5%	0.0037	95.6%	0.0975	0.1161	0.0832	0.0928	0.3106
2	14:18:28	95.9%	0.0014	93.1%	0.0974	0.0783	0.0709	0.0724	0.3306
3	14:19:05	98.3%	0.0012	93.9%	0.1066	0.0695	0.0749	0.0721	0.3600
x		97.6%	0.0021	94.2%	0.1005	0.0880	0.0763	0.0791	0.3337
σ		1.4%	0.0014	1.3%	0.0053	0.0248	0.0063	0.0119	0.0248
%RSD		1.5	67.7052	1.4	5.2257	28.1370	8.2119	15.0095	7.4326

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	0.4035	0.3121	94.6%	0.0393	2.0771	0.0549	0.1540	95.8%
2	14:18:28	0.3922	0.3426	94.8%	0.1663	1.5294	-0.0809	0.0335	96.1%
3	14:19:05	0.3501	0.3209	95.7%	0.0884	1.6205	-0.0148	-0.1474	96.6%
x		0.3819	0.3252	95.0%	0.0980	1.7424	-0.0136	0.0134	96.2%
σ		0.0281	0.0157	0.6%	0.0641	0.2935	0.0679	0.1517	0.4%
%RSD		7.3646	4.8263	0.6	65.3836	16.8444	498.4866	1134.1936	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:52	94.4%	-0.0057	-0.0077	97.1%	0.0097	0.0092	0.0090
2	14:18:28	96.3%	-0.0067	-0.0112	98.5%	0.0146	0.0134	0.0110
3	14:19:05	96.5%	-0.0070	-0.0080	99.3%	0.0107	0.0125	0.0112
x		95.7%	-0.0065	-0.0090	98.3%	0.0117	0.0117	0.0104
σ		1.1%	0.0007	0.0020	1.1%	0.0026	0.0022	0.0012
%RSD		1.2	10.7266	21.8614	1.1	22.5106	18.6742	11.9651

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	103.4%	24.6848	97.2%	25.8973	25.3909	25.4026	25.9189	25.6806
2	14:22:00	101.0%	24.8784	97.4%	25.4249	25.1996	25.0559	24.9735	25.4780
3	14:22:37	102.0%	24.5257	98.1%	25.2934	24.9972	24.9115	25.4667	25.2623
x		102.1%	24.6963	97.5%	25.5385	25.1959	25.1233	25.4531	25.4736
σ		1.2%	0.1766	0.5%	0.3176	0.1968	0.2524	0.4729	0.2092
%RSD		1.2	0.7152	0.5	1.2435	0.7813	1.0048	1.8578	0.8212

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	24.8011	25.5555	97.1%	25.6419	24.9977	25.1826	25.8178	97.5%
2	14:22:00	25.1232	24.8745	98.6%	25.2047	24.8743	24.5652	25.3155	97.9%
3	14:22:37	24.5761	25.0287	98.5%	25.1401	25.4988	24.7982	25.4012	99.1%
x		24.8335	25.1529	98.1%	25.3289	25.1236	24.8487	25.5115	98.2%
σ		0.2750	0.3571	0.9%	0.2729	0.3307	0.3118	0.2687	0.8%
%RSD		1.1072	1.4198	0.9	1.0776	1.3164	1.2546	1.0534	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:24	96.9%	24.9602	24.7514	97.8%	25.1074	25.1317	25.1583
2	14:22:00	98.1%	25.0018	24.8196	100.0%	25.1121	24.9996	24.9430
3	14:22:37	98.8%	24.7085	24.7473	99.6%	25.2657	25.0152	25.2027
x		97.9%	24.8902	24.7728	99.1%	25.1617	25.0488	25.1013
σ		1.0%	0.1587	0.0406	1.1%	0.0901	0.0722	0.1389
%RSD		1.0	0.6377	0.1639	1.1	0.3580	0.2882	0.5533

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	106.1%	0.0097	100.6%	0.0182	0.0061	0.0157	0.0200	0.0268
2	14:31:08	101.9%	0.0186	99.4%	0.0005	0.0468	0.0168	0.0166	0.0232
3	14:31:45	103.7%	0.0105	100.4%	0.0076	0.0087	0.0105	0.0097	0.0095
x		103.9%	0.0129	100.1%	0.0088	0.0205	0.0143	0.0154	0.0198
σ		2.1%	0.0049	0.7%	0.0089	0.0228	0.0034	0.0052	0.0091
%RSD		2.0	38.1260	0.7	102.0424	110.8877	23.3548	33.7771	45.8437
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:30:32	0.0030	0.0204	98.8%	-0.0503	0.1655	-0.2904	-0.1131	98.3%
2	14:31:08	-0.0156	0.0170	99.8%	0.0251	0.0958	-0.1217	0.1446	99.4%
3	14:31:45	0.0033	0.0026	98.6%	-0.0651	-0.0046	-0.0427	-0.2981	99.9%
x		-0.0031	0.0133	99.0%	-0.0301	0.0856	-0.1516	-0.0889	99.2%
σ		0.0108	0.0095	0.6%	0.0484	0.0855	0.1265	0.2223	0.8%
%RSD		347.0159	71.1854	0.6	160.6724	99.9414	83.4676	250.2364	0.8
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	14:30:32	97.8%	0.0092	0.0069	96.3%	0.0130	0.0135	0.0129	
2	14:31:08	99.2%	0.0157	0.0168	98.8%	0.0110	0.0151	0.0133	
3	14:31:45	98.9%	0.0113	0.0075	99.0%	0.0145	0.0138	0.0134	
x		98.6%	0.0121	0.0104	98.0%	0.0128	0.0142	0.0132	
σ		0.7%	0.0033	0.0055	1.5%	0.0018	0.0009	0.0003	
%RSD		0.8	27.4597	53.1143	1.5	13.8869	6.0311	2.0834	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	102.4%	0.0070	99.8%	0.0039	0.0144	0.0147	0.0137	0.0342
2	14:34:56	103.5%	0.0113	99.4%	-0.0019	0.0361	0.0130	0.0184	0.0258
3	14:35:33	106.5%	0.0081	98.4%	0.0119	0.0162	0.0123	0.0201	0.0002
x		104.2%	0.0088	99.2%	0.0046	0.0222	0.0133	0.0174	0.0201
σ		2.1%	0.0023	0.7%	0.0069	0.0120	0.0012	0.0033	0.0177
%RSD		2.0	25.6081	0.7	150.4790	54.1205	9.0138	19.0341	88.3850
Run	**Time**	**67Zn**	**68Zn**	**71Ga**	**75As**	**77Se**	**78Se**	**82Se**	**103Rh**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:20	0.0095	0.0158	98.4%	-0.0281	-0.0693	-0.0859	-0.1826	99.4%
2	14:34:56	-0.0218	-0.0013	100.1%	-0.0644	0.0806	-0.1019	-0.1896	100.9%
3	14:35:33	-0.0163	0.0337	101.0%	-0.0151	0.0901	-0.2698	0.0108	101.3%
x		-0.0095	0.0160	99.8%	-0.0359	0.0338	-0.1526	-0.1205	100.5%
σ		0.0167	0.0175	1.3%	0.0256	0.0894	0.1019	0.1138	1.0%
%RSD		175.4036	109.2396	1.3	71.3260	264.6664	66.7625	94.4279	1.0
Run	**Time**	**115In**	**121Sb**	**123Sb**	**175Lu**	**206Pb**	**207Pb**	**208Pb**	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	
1	14:34:20	99.0%	0.0017	0.0027	97.3%	0.0080	0.0053	0.0061	
2	14:34:56	100.4%	0.0048	0.0091	99.2%	0.0076	0.0084	0.0084	
3	14:35:33	99.9%	0.0044	0.0019	99.4%	0.0084	0.0081	0.0070	
x		99.8%	0.0036	0.0045	98.7%	0.0080	0.0073	0.0072	
σ		0.7%	0.0017	0.0039	1.2%	0.0004	0.0017	0.0012	
%RSD		0.7	47.1398	86.4013	1.2	5.4158	23.6269	16.4987	

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	105.8%	0.0225	100.4%	0.1481	0.1856	0.0977	0.0962	0.5535
2	14:38:35	101.6%	0.0261	99.8%	0.1763	0.1981	0.1051	0.0887	0.5176
3	14:39:11	102.5%	0.0156	98.5%	0.1670	0.1653	0.0999	0.0853	0.4696
x		103.3%	0.0214	99.6%	0.1638	0.1830	0.1009	0.0901	0.5136
σ		2.2%	0.0053	1.0%	0.0144	0.0166	0.0038	0.0056	0.0421
%RSD		2.1	24.9043	1.0	8.7793	9.0511	3.7360	6.1868	8.1904

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	0.3758	0.4672	98.7%	0.4774	1.0626	1.2671	0.9370	100.4%
2	14:38:35	0.4632	0.4731	99.4%	0.5283	0.8462	0.9208	0.8838	101.1%
3	14:39:11	0.5736	0.5037	99.1%	0.5500	1.0556	1.1144	1.2166	101.2%
x		0.4709	0.4813	99.1%	0.5186	0.9882	1.1007	1.0125	100.9%
σ		0.0991	0.0196	0.3%	0.0373	0.1230	0.1735	0.1788	0.4%
%RSD		21.0487	4.0760	0.3	7.1837	12.4433	15.7658	17.6574	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:58	98.7%	0.0496	0.0418	98.3%	0.0181	0.0173	0.0198
2	14:38:35	101.1%	0.0511	0.0486	99.6%	0.0215	0.0205	0.0197
3	14:39:11	100.9%	0.0480	0.0486	100.3%	0.0242	0.0199	0.0217
x		100.2%	0.0496	0.0463	99.4%	0.0213	0.0192	0.0204
σ		1.4%	0.0015	0.0039	1.1%	0.0031	0.0017	0.0011
%RSD		1.3	3.1022	8.4938	1.1	14.5127	8.9172	5.5793

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	103.5%	-0.0025	98.9%	-0.0268	0.0147	0.0041	0.0037	0.0043
2	14:42:12	107.0%	0.0009	98.4%	-0.0224	-0.0291	0.0025	0.0039	0.0756
3	14:42:49	99.2%	0.0028	96.4%	-0.0212	-0.0005	0.0083	0.0096	0.0604
x		103.2%	0.0004	97.9%	-0.0235	-0.0050	0.0050	0.0057	0.0467
σ		3.9%	0.0027	1.3%	0.0030	0.0222	0.0030	0.0033	0.0376
%RSD		3.8	656.2734	1.4	12.6680	446.8010	59.7810	58.3608	80.3875

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	0.1760	0.0226	97.1%	-0.0807	1.9501	0.2267	-0.0669	98.0%
2	14:42:12	0.1290	0.0759	99.3%	0.0119	1.8419	0.0796	0.0498	98.5%
3	14:42:49	0.0715	0.0588	97.9%	-0.0292	1.6712	-0.0548	-0.1614	97.8%
x		0.1255	0.0525	98.1%	-0.0327	1.8211	0.0838	-0.0595	98.1%
σ		0.0523	0.0272	1.1%	0.0464	0.1406	0.1408	0.1058	0.4%
%RSD		41.7013	51.8588	1.1	141.9717	7.7217	167.9589	177.8220	0.4

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:41:36	96.9%	-0.0055	-0.0050	96.3%	0.0075	0.0086	0.0045
2	14:42:12	98.1%	-0.0075	-0.0062	98.6%	0.0090	0.0065	0.0091
3	14:42:49	97.9%	-0.0049	-0.0033	99.1%	0.0065	0.0128	0.0077
x		97.6%	-0.0060	-0.0048	98.0%	0.0076	0.0093	0.0071
σ		0.6%	0.0013	0.0015	1.5%	0.0013	0.0032	0.0024
%RSD		0.7	22.1856	30.6343	1.5	16.7291	34.6926	33.1868

8/4/16

DNR 2 LCW out of control

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	104.6%	2.5384	99.9%	25.5074	25.4862	12.9593	12.7608	34.8915
2	14:45:45	102.0%	2.5837	99.0%	25.0479	24.8492	12.6384	12.5448	35.4127
3	14:46:21	101.3%	2.5224	97.8%	25.7277	25.1693	12.9701	13.0005	35.9762
x		102.6%	2.5482	98.9%	25.4277	25.1682	12.8559	12.7687	35.4268
σ		1.7%	0.0318	1.1%	0.3469	0.3185	0.1885	0.2280	0.5425
%RSD		1.7	1.2472	1.1	1.3641	1.2655	1.4659	1.7854	1.5312

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	38.3469	37.0963	99.2%	50.6793	50.2530	50.1731	50.5431	99.9%
2	14:45:45	37.9095	37.4868	100.1%	49.4681	51.3486	49.0890	49.6194	98.9%
3	14:46:21	39.3934	37.7582	98.1%	50.6486	51.0318	50.9848	50.5353	99.6%
x		38.5499	37.4471	99.1%	50.2653	50.8778	50.0823	50.2326	99.5%
σ		0.7625	0.3327	1.0%	0.6906	0.5638	0.9511	0.5310	0.5%
%RSD		1.9780	0.8886	1.0	1.3739	1.1082	1.8991	1.0571	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:45:08	97.4%	50.5366	50.1233	98.0%	49.5263	50.4561	50.1429
2	14:45:45	99.2%	49.7170	49.7333	99.5%	49.9081	51.4302	50.9050
3	14:46:21	99.8%	49.8135	49.5506	99.9%	49.9816	51.2589	50.6962
x		98.8%	50.0224	49.8024	99.1%	49.8053	51.0484	50.5814
σ		1.2%	0.4479	0.2925	1.0%	0.2444	0.5200	0.3938
%RSD		1.2	0.8954	0.5874	1.0	0.4908	1.0187	0.7786

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	106.7%	2.4560	97.8%	25.8863	25.2367	12.6671	12.9210	25.4538
2	14:50:52	97.8%	2.5326	96.8%	25.4817	25.1756	12.6830	12.7855	25.5581
3	14:51:29	98.6%	2.4679	97.3%	25.4445	25.1684	12.6283	12.4873	25.2749
x		101.0%	2.4855	97.3%	25.6042	25.1936	12.6594	12.7313	25.4273
σ		4.9%	0.0412	0.5%	0.2451	0.0375	0.0282	0.2219	0.1410
%RSD		4.8	1.6584	0.5	0.9571	0.1489	0.2224	1.7428	0.5544

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	30.0122	27.7241	98.0%	51.3104	52.0132	50.2698	49.5731	98.4%
2	14:50:52	30.0582	27.9650	97.4%	51.1673	53.1600	50.0804	50.8574	99.2%
3	14:51:29	29.3583	27.8699	98.0%	50.8767	52.7403	51.4413	50.2583	97.9%
x		29.8096	27.8530	97.8%	51.1181	52.6378	50.5972	50.2296	98.5%
σ		0.3915	0.1214	0.3%	0.2210	0.5803	0.7371	0.6426	0.7%
%RSD		1.3134	0.4357	0.3	0.4323	1.1024	1.4569	1.2793	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:16	96.6%	51.0810	50.5821	97.9%	50.2172	51.8771	51.3157
2	14:50:52	98.1%	50.9856	50.8394	99.2%	50.7402	52.1238	51.8103
3	14:51:29	98.0%	50.8107	50.7637	99.9%	50.8752	52.6546	51.8684
x		97.6%	50.9591	50.7284	99.0%	50.6109	52.2185	51.6648
σ		0.8%	0.1371	0.1322	1.0%	0.3475	0.3973	0.3037
%RSD		0.9	0.2690	0.2606	1.1	0.6866	0.7609	0.5879

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	106.3%	0.0026	97.4%	0.1534	0.1293	0.1154	0.1164	1.2748
2	14:56:17	101.2%	0.0026	98.0%	0.1289	0.1411	0.1238	0.1147	1.2274
3	14:56:53	102.2%	0.0025	96.1%	0.1347	0.1180	0.1106	0.1273	1.2581
x		103.2%	0.0026	97.2%	0.1390	0.1295	0.1166	0.1195	1.2534
σ		2.7%	0.0000	1.0%	0.0128	0.0115	0.0067	0.0069	0.0241
%RSD		2.6	1.4056	1.0	9.2171	8.9164	5.7353	5.7563	1.9188

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	1.1626	1.1121	97.1%	0.0692	1.8763	-0.2635	0.2386	96.6%
2	14:56:17	1.2155	1.2356	96.6%	0.1086	1.9315	0.2903	0.3660	98.1%
3	14:56:53	1.3858	1.1323	97.1%	0.0364	1.8666	-0.4020	0.2357	98.8%
x		1.2546	1.1600	96.9%	0.0714	1.8915	-0.1251	0.2801	97.9%
σ		0.1166	0.0663	0.3%	0.0361	0.0350	0.3663	0.0744	1.1%
%RSD		9.2972	5.7112	0.3	50.6259	1.8512	292.8757	26.5530	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:55:41	95.2%	0.0097	0.0102	96.2%	0.0296	0.0314	0.0336
2	14:56:17	97.6%	0.0120	0.0131	98.5%	0.0372	0.0375	0.0365
3	14:56:53	98.4%	0.0160	0.0132	98.0%	0.0453	0.0385	0.0394
x		97.1%	0.0126	0.0122	97.5%	0.0374	0.0358	0.0365
σ		1.7%	0.0032	0.0017	1.2%	0.0079	0.0038	0.0029
%RSD		1.7	25.4551	13.7139	1.2	21.0107	10.7407	7.9786

K1608011-007L 8/3/2016 2:59:17 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	102.6%	0.0017	98.5%	0.0018	0.0182	0.0240	0.0290	0.2348
2	14:59:53	94.6%	0.0019	95.9%	0.0184	0.0481	0.0307	0.0135	0.2514
3	15:00:29	98.5%	-0.0018	96.1%	0.0087	0.0153	0.0208	0.0253	0.2359
x		98.6%	0.0006	96.8%	0.0096	0.0272	0.0251	0.0226	0.2407
σ		4.0%	0.0021	1.5%	0.0084	0.0182	0.0051	0.0081	0.0083
%RSD		4.0	368.5036	1.5	86.9956	66.7941	20.1807	35.7776	3.8612

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	0.2645	0.2526	96.2%	0.0163	0.5377	0.1869	0.1394	98.0%
2	14:59:53	0.2482	0.2585	98.0%	0.0014	0.3789	0.1310	-0.0479	98.6%
3	15:00:29	0.2777	0.2596	96.4%	-0.0290	0.3223	0.0823	-0.2240	98.5%
x		0.2635	0.2569	96.9%	-0.0038	0.4130	0.1334	-0.0442	98.4%
σ		0.0148	0.0038	1.0%	0.0231	0.1117	0.0524	0.1817	0.3%
%RSD		5.6054	1.4659	1.0	613.2491	27.0406	39.2474	411.4784	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:59:17	97.5%	-0.0109	-0.0149	97.3%	0.0062	0.0058	0.0063
2	14:59:53	98.2%	-0.0117	-0.0140	98.7%	0.0087	0.0082	0.0065
3	15:00:29	98.3%	-0.0068	-0.0111	100.0%	0.0088	0.0076	0.0074
x		98.0%	-0.0098	-0.0133	98.7%	0.0079	0.0072	0.0067
σ		0.5%	0.0027	0.0020	1.3%	0.0015	0.0012	0.0006
%RSD		0.5	27.2225	14.9429	1.3	18.7627	17.2984	8.6277

K1608011-007A 8/3/2016 3:02:51 PM

8/4/16

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	104.0%	21.0841	97.0%	21.8657	21.6656	21.8976	22.7613	23.1381
2	15:03:27	99.5%	21.2583	97.4%	21.5899	21.1094	21.3516	21.3418	22.4052
3	15:04:04	97.3%	20.7809	94.0%	21.8576	22.0342	21.8697	22.3049	23.0866
x		100.3%	21.0411	96.1%	21.7711	21.6031	21.7063	22.1360	22.8767
σ		3.4%	0.2416	1.9%	0.1570	0.4656	0.3075	0.7247	0.4091
%RSD		3.4	1.1482	1.9	0.7210	2.1552	1.4167	3.2736	1.7881

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	22.6908	22.8828	96.2%	21.5424	23.2691	21.4486	20.2022	97.8%
2	15:03:27	22.0119	22.3463	97.6%	21.4800	23.4551	20.7177	20.9757	97.2%
3	15:04:04	22.6792	22.5721	95.7%	21.8317	22.1326	20.1640	21.1168	97.7%
x		22.4607	22.6004	96.5%	21.6181	22.9523	20.7768	20.7649	97.6%
σ		0.3887	0.2694	1.0%	0.1877	0.7159	0.6444	0.4924	0.3%
%RSD		1.7305	1.1919	1.0	0.8681	3.1192	3.1013	2.3711	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:51	98.1%	21.5526	21.4968	97.3%	21.5098	21.2928	21.4356
2	15:03:27	98.7%	21.7927	21.5765	99.6%	21.4689	21.4438	21.5211
3	15:04:04	98.4%	21.7961	21.6420	99.5%	21.5373	21.3620	21.5330
x		98.4%	21.7138	21.5718	98.8%	21.5053	21.3662	21.4966
σ		0.3%	0.1396	0.0727	1.3%	0.0345	0.0756	0.0531
%RSD		0.3	0.6430	0.3371	1.3	0.1602	0.3538	0.2471

K1608207-015 8/3/2016 3:06:51 PM

8/4/16

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	100.9%	0.0043	95.4%	0.1810	0.1602	0.1479	0.1467	1.2657
2	15:07:28	98.3%	0.0029	96.4%	0.1754	0.1575	0.1425	0.1495	1.3052
3	15:08:04	97.3%	0.0142	96.8%	0.1714	0.1879	0.1461	0.1647	1.2784
x		98.8%	0.0071	96.2%	0.1759	0.1686	0.1455	0.1536	1.2831
σ		1.8%	0.0062	0.7%	0.0048	0.0168	0.0027	0.0097	0.0201
%RSD		1.9	86.4837	0.8	2.7413	9.9881	1.8610	6.3049	1.5703

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	1.2254	1.2172	95.2%	0.0589	1.9261	-0.0769	0.3208	96.5%
2	15:07:28	1.3036	1.1996	96.8%	-0.0027	2.0088	-0.1439	0.1591	98.2%
3	15:08:04	1.2007	1.0761	97.1%	0.0358	1.8064	-0.1342	0.0027	97.5%
x		1.2432	1.1643	96.3%	0.0307	1.9138	-0.1183	0.1609	97.4%
σ		0.0537	0.0769	1.0%	0.0311	0.1017	0.0362	0.1590	0.9%
%RSD		4.3214	6.6053	1.0	101.3181	5.3167	30.6327	98.8747	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:06:51	95.8%	-0.0010	0.0001	97.1%	0.0334	0.0345	0.0319
2	15:07:28	97.4%	0.0019	0.0066	98.7%	0.0319	0.0320	0.0347
3	15:08:04	97.5%	0.0160	0.0092	99.4%	0.0482	0.0531	0.0485
x		96.9%	0.0056	0.0053	98.4%	0.0378	0.0399	0.0384
σ		1.0%	0.0091	0.0047	1.2%	0.0090	0.0115	0.0089
%RSD		1.0	161.0468	88.4407	1.2	23.7618	28.9550	23.1407

K1608209-015 8/3/2016 3:10:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	99.9%	0.0002	97.7%	0.0513	0.0455	0.0709	0.0796	0.7691
2	15:11:03	97.9%	0.0068	95.0%	0.0661	0.0528	0.0937	0.0755	0.7749
3	15:11:38	97.8%	0.0025	96.3%	0.0495	0.0414	0.0793	0.0650	0.7587
x		98.5%	0.0032	96.3%	0.0556	0.0466	0.0813	0.0734	0.7642
σ		1.2%	0.0034	1.3%	0.0091	0.0058	0.0116	0.0075	0.0092
%RSD		1.2	106.3219	1.4	16.3658	12.4257	14.2082	10.2612	1.2068

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	0.9145	0.7674	96.0%	0.0143	2.0034	0.0450	0.2189	96.7%
2	15:11:03	0.7813	0.7692	96.1%	0.0345	1.8136	-0.0358	0.2003	96.6%
3	15:11:38	0.6904	0.7818	97.4%	-0.0508	1.8843	-0.1655	-0.1250	96.6%
x		0.7954	0.7728	96.5%	-0.0007	1.9004	-0.0521	0.0981	96.6%
σ		0.1127	0.0079	0.8%	0.0446	0.0959	0.1062	0.1934	0.1%
%RSD		14.1651	1.0160	0.8	6322.1316	5.0455	203.8613	197.1959	0.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:10:26	96.3%	-0.0062	-0.0076	96.6%	0.0169	0.0166	0.0159
2	15:11:03	96.8%	-0.0022	0.0005	98.7%	0.0168	0.0231	0.0192
3	15:11:38	96.8%	-0.0048	-0.0028	98.7%	0.0229	0.0185	0.0185
x		96.6%	-0.0044	-0.0033	98.0%	0.0189	0.0194	0.0179
σ		0.3%	0.0020	0.0041	1.2%	0.0035	0.0033	0.0018
%RSD		0.3	45.6438	124.5802	1.3	18.5656	17.1083	9.8436

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	101.7%	0.0034	94.3%	0.1444	0.1385	0.0779	0.0659	0.4126
2	15:14:40	98.7%	0.0003	95.3%	0.1518	0.1189	0.0723	0.0609	0.4439
3	15:15:16	98.2%	0.0008	93.3%	0.1439	0.1163	0.0699	0.0778	0.4227
x		99.6%	0.0015	94.3%	0.1467	0.1246	0.0734	0.0682	0.4264
σ		1.9%	0.0017	1.0%	0.0044	0.0121	0.0041	0.0087	0.0160
%RSD		1.9	113.9226	1.1	3.0200	9.7491	5.5900	12.7489	3.7439

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	0.5037	0.4309	94.9%	0.0078	1.7269	-0.0468	-0.1872	97.1%
2	15:14:40	0.4221	0.4553	96.0%	0.0245	1.9123	-0.1676	0.0430	96.0%
3	15:15:16	0.4868	0.4175	94.7%	0.0093	1.8659	0.2679	0.0534	97.0%
x		0.4709	0.4346	95.2%	0.0139	1.8350	0.0179	-0.0303	96.7%
σ		0.0431	0.0192	0.7%	0.0092	0.0964	0.2248	0.1360	0.6%
%RSD		9.1475	4.4117	0.8	66.7038	5.2554	1259.1868	449.6678	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:03	96.0%	-0.0072	-0.0089	96.6%	0.0194	0.0205	0.0194
2	15:14:40	96.8%	-0.0055	-0.0064	98.2%	0.0203	0.0217	0.0190
3	15:15:16	96.4%	-0.0068	-0.0070	98.9%	0.0172	0.0220	0.0182
x		96.4%	-0.0065	-0.0074	97.9%	0.0190	0.0214	0.0189
σ		0.4%	0.0009	0.0013	1.2%	0.0016	0.0008	0.0006
%RSD		0.4	13.2764	17.7479	1.2	8.3234	3.5657	3.3810

CCV4 8/3/2016 3:17:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	102.6%	24.9203	98.1%	25.6534	25.1509	25.3747	25.8305	25.9470
2	15:18:15	98.0%	24.6290	97.4%	25.4612	25.3587	25.6593	25.7221	25.6369
3	15:18:51	94.4%	25.4136	98.0%	25.1892	25.1400	24.7310	24.8971	25.0410
x		98.3%	24.9876	97.9%	25.4346	25.2165	25.2550	25.4832	25.5416
σ		4.1%	0.3966	0.4%	0.2333	0.1233	0.4756	0.5105	0.4605
%RSD		4.2	1.5873	0.4	0.9171	0.4889	1.8831	2.0033	1.8028

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	25.6209	25.0331	97.6%	25.4513	24.5401	24.6699	24.5473	98.3%
2	15:18:15	25.5059	25.2442	96.9%	24.6204	26.1055	25.0593	24.3395	99.6%
3	15:18:51	25.5154	25.1255	98.8%	24.9823	24.9418	24.9622	25.0573	99.6%
x		25.5474	25.1343	97.7%	25.0180	25.1958	24.8972	24.6480	99.2%
σ		0.0638	0.1058	1.0%	0.4166	0.8130	0.2027	0.3693	0.7%
%RSD		0.2498	0.4210	1.0	1.6651	3.2269	0.8141	1.4984	0.8

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:38	98.7%	24.6793	24.5092	99.0%	25.4580	25.1410	25.2942
2	15:18:15	99.2%	25.2342	24.9597	100.1%	25.3748	25.2297	25.3759
3	15:18:51	100.4%	25.0373	24.9185	101.0%	25.3920	25.4493	25.4656
x		99.4%	24.9836	24.7958	100.0%	25.4083	25.2733	25.3785
σ		0.9%	0.2813	0.2491	1.0%	0.0439	0.1587	0.0857
%RSD		0.9	1.1260	1.0046	1.0	0.1729	0.6280	0.3378

CCB4 8/3/2016 3:27:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	108.2%	0.0071	99.9%	0.0079	0.0410	0.0139	0.0080	-0.0094
2	15:27:36	102.9%	0.0159	100.0%	0.0015	0.0350	0.0193	0.0202	0.0293
3	15:28:13	99.3%	0.0133	99.5%	0.0167	0.0286	0.0199	0.0192	0.0118
x		103.5%	0.0121	99.8%	0.0087	0.0348	0.0177	0.0158	0.0106
σ		4.5%	0.0045	0.3%	0.0076	0.0062	0.0033	0.0068	0.0194
%RSD		4.3	37.5054	0.3	87.4039	17.7926	18.8768	42.8159	183.3938

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	0.0343	0.0190	97.9%	0.0184	0.1422	-0.0608	0.1570	99.4%
2	15:27:36	0.0758	0.0054	98.4%	-0.0513	0.1776	0.2733	-0.0750	101.2%
3	15:28:13	0.0264	0.0017	99.5%	-0.0090	0.0563	-0.2014	-0.0748	101.4%
x		0.0455	0.0087	98.6%	-0.0140	0.1254	0.0037	0.0024	100.6%
σ		0.0266	0.0091	0.9%	0.0351	0.0624	0.2438	0.1338	1.1%
%RSD		58.3615	104.6443	0.9	251.7587	49.7524	6596.4383	5548.1478	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:27:00	98.1%	0.0144	0.0143	96.5%	0.0107	0.0059	0.0078
2	15:27:36	99.9%	0.0209	0.0168	98.9%	0.0188	0.0184	0.0176
3	15:28:13	100.3%	0.0153	0.0189	99.4%	0.0120	0.0186	0.0143
x		99.4%	0.0169	0.0167	98.3%	0.0138	0.0143	0.0132
σ		1.2%	0.0035	0.0023	1.6%	0.0044	0.0073	0.0049
%RSD		1.2	20.8043	13.7617	1.6	31.5971	50.7832	37.3659

CCB4 8/3/2016 3:30:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	108.7%	0.0062	101.8%	-0.0018	0.0258	0.0109	0.0142	0.0230
2	15:31:19	104.4%	0.0116	100.9%	0.0060	-0.0072	0.0088	0.0117	0.0279
3	15:31:55	106.1%	0.0085	99.1%	0.0018	0.0171	0.0096	0.0093	0.0070
x		106.4%	0.0088	100.6%	0.0020	0.0119	0.0097	0.0118	0.0193
σ		2.1%	0.0027	1.3%	0.0039	0.0171	0.0010	0.0025	0.0109
%RSD		2.0	30.4824	1.3	193.1700	143.8878	10.7334	21.0180	56.5385

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	-0.0341	0.0007	100.4%	0.0466	0.0673	-0.0750	0.2006	100.2%
2	15:31:19	0.0014	0.0083	100.5%	-0.0643	0.1050	-0.1601	-0.1603	100.8%
3	15:31:55	-0.0162	0.0263	100.6%	0.0363	0.1040	0.0262	0.1709	101.2%
x		-0.0163	0.0118	100.5%	0.0062	0.0921	-0.0696	0.0704	100.7%
σ		0.0178	0.0132	0.1%	0.0613	0.0215	0.0932	0.2003	0.5%
%RSD		108.9689	111.8443	0.1	989.8106	23.3586	133.9037	284.5408	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:30:42	99.2%	0.0078	0.0030	97.2%	0.0090	0.0074	0.0076
2	15:31:19	99.9%	0.0071	-0.0004	99.3%	0.0100	0.0069	0.0079
3	15:31:55	100.1%	0.0048	0.0063	99.6%	0.0073	0.0109	0.0072
x		99.7%	0.0066	0.0030	98.7%	0.0088	0.0084	0.0076
σ		0.5%	0.0016	0.0033	1.3%	0.0014	0.0022	0.0004
%RSD		0.5	23.7421	111.7805	1.3	15.6539	26.0911	4.6858

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	103.0%	-0.0000	98.5%	-0.0214	0.0028	0.0304	0.0402	1.6206
2	15:34:52	100.4%	0.0014	98.4%	-0.0143	-0.0077	0.0401	0.0297	1.5946
3	15:35:28	98.2%	0.0012	96.4%	-0.0139	-0.0282	0.0363	0.0664	1.5833
x		100.5%	0.0009	97.8%	-0.0166	-0.0110	0.0356	0.0454	1.5995
σ		2.4%	0.0008	1.2%	0.0042	0.0157	0.0049	0.0189	0.0191
%RSD		2.4	89.5441	1.2	25.3399	142.5530	13.7154	41.5484	1.1969

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	1.5201	1.4835	97.6%	0.0298	1.7316	0.0148	0.1282	97.4%
2	15:34:52	1.7741	1.5529	97.7%	0.0474	1.5537	-0.5381	-0.0070	98.5%
3	15:35:28	1.6583	1.5407	97.3%	0.0058	1.8377	0.0001	0.0800	98.6%
x		1.6508	1.5257	97.5%	0.0276	1.7077	-0.1744	0.0670	98.2%
σ		0.1272	0.0370	0.2%	0.0208	0.1435	0.3151	0.0685	0.7%
%RSD		7.7034	2.4270	0.2	75.3796	8.4019	180.6745	102.2155	0.7

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:15	96.7%	0.0006	-0.0010	96.6%	0.0045	0.0041	0.0037
2	15:34:52	97.8%	0.0024	0.0036	98.4%	0.0045	0.0031	0.0039
3	15:35:28	98.5%	-0.0035	0.0015	99.2%	0.0056	0.0061	0.0048
x		97.7%	-0.0002	0.0013	98.0%	0.0048	0.0045	0.0041
σ		0.9%	0.0030	0.0023	1.3%	0.0006	0.0015	0.0006
%RSD		1.0	1708.4396	172.3995	1.4	12.8052	34.3843	14.4127

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	106.2%	2.4815	99.0%	24.8782	24.9328	12.3757	12.6020	25.2201
2	15:38:24	102.7%	2.4700	98.0%	25.1597	24.6731	12.4229	12.5285	24.9248
3	15:39:01	100.4%	2.5132	95.8%	24.9560	25.0916	12.3734	12.5413	24.8817
x		103.1%	2.4883	97.6%	24.9979	24.8992	12.3907	12.5573	25.0089
σ		2.9%	0.0224	1.7%	0.1454	0.2113	0.0279	0.0393	0.1842
%RSD		2.8	0.8986	1.7	0.5816	0.8485	0.2255	0.3127	0.7366

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	28.5358	27.7279	96.9%	50.0927	51.7695	49.7783	49.6564	98.6%
2	15:38:24	28.6691	27.0726	99.0%	50.2693	50.7710	49.6180	49.7230	99.4%
3	15:39:01	28.4961	27.1119	98.3%	49.8056	49.9465	48.5312	48.2904	99.4%
x		28.5670	27.3042	98.0%	50.0559	50.8290	49.3092	49.2233	99.1%
σ		0.0906	0.3675	1.1%	0.2341	0.9129	0.6785	0.8086	0.5%
%RSD		0.3172	1.3459	1.1	0.4676	1.7960	1.3760	1.6427	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:47	97.8%	50.6951	50.3160	97.8%	49.3112	50.7057	49.9530
2	15:38:24	99.6%	49.9623	49.9085	99.5%	49.1451	51.1618	50.2489
3	15:39:01	99.0%	50.5094	50.1641	99.8%	49.1562	50.7982	50.0637
x		98.8%	50.3889	50.1295	99.0%	49.2042	50.8886	50.0885
σ		0.9%	0.3810	0.2059	1.1%	0.0929	0.2411	0.1495
%RSD		0.9	0.7560	0.4108	1.1	0.1888	0.4738	0.2985

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	103.7%	2.5332	99.5%	25.0041	24.8065	12.4984	12.5503	24.7139
2	15:44:04	105.5%	2.4331	98.9%	25.3712	24.8044	12.5344	12.5670	24.9566
3	15:44:41	99.0%	2.5841	98.2%	24.2516	25.0867	12.6905	12.8397	24.8597
x		102.7%	2.5168	98.9%	24.8756	24.8992	12.5744	12.6523	24.8434
σ		3.4%	0.0769	0.7%	0.5708	0.1624	0.1021	0.1625	0.1221
%RSD		3.3	3.0538	0.7	2.2944	0.6523	0.8122	1.2842	0.4917

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	28.9598	27.6713	97.8%	49.6937	50.7125	47.7390	49.6992	98.0%
2	15:44:04	29.4333	27.8009	97.6%	50.2713	50.4056	49.0552	49.6964	98.3%
3	15:44:41	28.5876	27.1096	97.8%	49.6636	49.6851	49.1311	49.2629	99.6%
x		28.9936	27.5273	97.8%	49.8762	50.2677	48.6418	49.5528	98.6%
σ		0.4239	0.3675	0.1%	0.3425	0.5274	0.7828	0.2511	0.9%
%RSD		1.4621	1.3350	0.1	0.6867	1.0491	1.6092	0.5067	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:28	97.2%	50.3360	49.8830	95.7%	48.6040	50.0634	49.4156
2	15:44:04	97.8%	50.5638	49.9847	98.1%	48.3624	49.6911	49.2465
3	15:44:41	99.0%	50.1785	49.3890	98.5%	48.6843	50.3444	49.6146
x		98.0%	50.3594	49.7522	97.4%	48.5502	50.0330	49.4256
σ		0.9%	0.1937	0.3187	1.5%	0.1675	0.3277	0.1843
%RSD		0.9	0.3847	0.6405	1.6	0.3451	0.6549	0.3728

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	100.2%	0.0031	96.4%	0.0898	0.0723	0.1194	0.1227	0.5078
2	15:50:20	101.3%	0.0001	95.7%	0.0546	0.0812	0.1367	0.1254	0.4501
3	15:50:57	102.7%	-0.0008	95.7%	0.0608	0.0575	0.1281	0.1369	0.4489
x		101.4%	0.0008	95.9%	0.0684	0.0704	0.1281	0.1283	0.4689
σ		1.3%	0.0021	0.4%	0.0188	0.0120	0.0087	0.0076	0.0337
%RSD		1.2	253.6509	0.4	27.4689	17.0282	6.7621	5.8887	7.1884

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	0.5364	0.4670	96.5%	0.0726	1.6492	-0.4006	0.1902	96.2%
2	15:50:20	0.4899	0.4238	97.2%	-0.0654	1.8829	-0.1967	-0.1544	97.6%
3	15:50:57	0.4212	0.4675	97.5%	-0.0231	1.7430	-0.2282	-0.1248	98.4%
x		0.4825	0.4528	97.0%	-0.0053	1.7584	-0.2752	-0.0297	97.4%
σ		0.0579	0.0251	0.5%	0.0707	0.1176	0.1098	0.1910	1.1%
%RSD		12.0035	5.5394	0.5	1336.5650	6.6874	39.8850	643.5585	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:43	95.9%	0.0172	0.0078	94.6%	0.0168	0.0171	0.0164
2	15:50:20	96.6%	0.0215	0.0167	97.2%	0.0247	0.0282	0.0257
3	15:50:57	96.5%	0.0169	0.0125	97.5%	0.0274	0.0211	0.0229
x		96.3%	0.0185	0.0123	96.4%	0.0230	0.0221	0.0217
σ		0.4%	0.0025	0.0045	1.6%	0.0055	0.0056	0.0048
%RSD		0.4	13.6978	36.3160	1.6	23.8465	25.4513	21.9716

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	100.6%	0.0010	98.5%	-0.0184	-0.0095	0.0236	0.0311	0.0865
2	15:53:58	101.0%	-0.0011	98.1%	-0.0127	0.0074	0.0214	0.0122	0.0793
3	15:54:35	101.7%	-0.0004	99.1%	-0.0108	0.0144	0.0249	0.0091	0.0682
x		101.1%	-0.0002	98.6%	-0.0140	0.0041	0.0233	0.0175	0.0780
σ		0.6%	0.0011	0.5%	0.0040	0.0123	0.0017	0.0119	0.0092
%RSD		0.6	621.5486	0.5	28.4476	298.2166	7.5038	68.0863	11.8513

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	0.0574	0.0932	94.6%	0.0491	0.3340	-0.0369	0.1420	97.4%
2	15:53:58	0.0230	0.0632	97.4%	0.1128	0.3019	0.3517	0.3516	99.8%
3	15:54:35	0.0815	0.0817	98.8%	-0.0179	0.3469	-0.0938	-0.1719	99.4%
x		0.0540	0.0794	96.9%	0.0480	0.3276	0.0736	0.1072	98.8%
σ		0.0294	0.0151	2.1%	0.0654	0.0232	0.2424	0.2635	1.3%
%RSD		54.4248	19.0549	2.2	136.2832	7.0768	329.1971	245.7661	1.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:53:22	96.7%	-0.0080	-0.0089	96.1%	0.0036	0.0062	0.0042
2	15:53:58	98.7%	-0.0060	-0.0063	98.5%	0.0070	0.0072	0.0060
3	15:54:35	99.0%	-0.0026	-0.0082	98.6%	0.0058	0.0085	0.0068
x		98.1%	-0.0056	-0.0078	97.8%	0.0055	0.0073	0.0057
σ		1.3%	0.0027	0.0014	1.4%	0.0017	0.0011	0.0013
%RSD		1.3	49.4488	17.6897	1.5	31.6713	15.6197	23.6181

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	107.3%	20.8468	97.7%	21.7826	22.2098	22.1827	22.2289	21.7910
2	15:57:31	102.7%	21.8622	97.3%	21.7803	21.7440	21.8801	22.1210	22.3106
3	15:58:08	104.6%	21.4130	97.3%	22.0259	22.0099	22.4107	21.9345	22.3823
x		104.9%	21.3740	97.5%	21.8629	21.9879	22.1578	22.0948	22.1686
σ		2.3%	0.5088	0.2%	0.1412	0.2336	0.2661	0.1489	0.3275
%RSD		2.2	2.3806	0.2	0.6457	1.0626	1.2011	0.6740	1.4772

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	21.4202	21.8789	98.1%	21.6554	23.0374	21.1609	21.5495	97.7%
2	15:57:31	22.4016	22.0767	98.4%	22.0880	22.2971	21.3282	21.6736	97.2%
3	15:58:08	22.3866	21.9625	98.2%	21.9778	22.2335	21.4875	21.6853	98.3%
x		22.0695	21.9727	98.2%	21.9070	22.5227	21.3255	21.6361	97.8%
σ		0.5623	0.0993	0.1%	0.2248	0.4469	0.1633	0.0752	0.6%
%RSD		2.5481	0.4519	0.1	1.0263	1.9843	0.7659	0.3478	0.6

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:56:56	97.2%	21.8650	21.6409	96.4%	21.6222	21.5079	21.6232
2	15:57:31	98.6%	22.0165	21.6764	98.2%	21.7017	21.5448	21.6748
3	15:58:08	99.3%	21.7283	21.7217	99.1%	21.6012	21.6257	21.6991
x		98.4%	21.8700	21.6797	97.9%	21.6417	21.5595	21.6657
σ		1.1%	0.1442	0.0405	1.4%	0.0530	0.0602	0.0388
%RSD		1.1	0.6592	0.1867	1.4	0.2451	0.2794	0.1791

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	108.5%	-0.0007	99.0%	0.0387	0.0378	0.1323	0.1544	1.0409
2	16:01:28	103.7%	0.0122	95.9%	0.0410	0.0463	0.1470	0.1291	1.0761
3	16:02:04	101.3%	0.0113	98.1%	0.0398	0.0622	0.1485	0.1551	1.0481
x		104.5%	0.0076	97.7%	0.0398	0.0488	0.1426	0.1462	1.0550
σ		3.7%	0.0072	1.6%	0.0012	0.0124	0.0090	0.0148	0.0186
%RSD		3.5	95.1604	1.6	2.9163	25.4485	6.2800	10.1232	1.7604

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	1.1043	0.9774	97.7%	0.0758	1.7817	-0.4598	0.0700	97.7%
2	16:01:28	0.8953	0.9381	95.7%	-0.0495	2.1015	-0.0503	0.0216	97.2%
3	16:02:04	1.0311	0.9898	97.9%	-0.0586	1.9633	0.0138	-0.0574	97.6%
x		1.0103	0.9684	97.1%	-0.0107	1.9488	-0.1655	0.0114	97.5%
σ		0.1061	0.0270	1.2%	0.0751	0.1604	0.2570	0.0643	0.2%
%RSD		10.4978	2.7850	1.2	698.8406	8.2292	155.3050	564.9467	0.3

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:51	96.3%	0.0045	0.0040	95.9%	0.0309	0.0347	0.0290
2	16:01:28	96.9%	0.0079	0.0041	97.5%	0.0348	0.0361	0.0358
3	16:02:04	98.2%	0.0066	0.0142	98.4%	0.0363	0.0383	0.0387
x		97.1%	0.0063	0.0074	97.3%	0.0340	0.0364	0.0345
σ		1.0%	0.0017	0.0059	1.2%	0.0028	0.0018	0.0050
%RSD		1.0	26.8441	78.5456	1.3	8.2579	5.0458	14.5020

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	105.8%	24.7363	98.2%	25.7545	25.5584	25.1315	25.2519	25.7840
2	16:05:10	102.3%	24.6868	99.0%	25.4905	25.1486	24.7635	25.2669	25.5505
3	16:05:46	100.3%	24.6146	99.6%	25.2665	24.8390	24.8028	25.0468	25.1354
x		102.8%	24.6792	98.9%	25.5038	25.1820	24.8993	25.1885	25.4900
σ		2.8%	0.0612	0.7%	0.2443	0.3609	0.2021	0.1230	0.3285
%RSD		2.7	0.2479	0.7	0.9578	1.4330	0.8115	0.4883	1.2888

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	26.1223	25.3570	97.8%	25.1775	25.0620	25.8392	24.6146	98.6%
2	16:05:10	25.5515	25.3126	99.9%	25.3752	24.5947	24.9429	25.3141	99.0%
3	16:05:46	24.7302	24.7583	99.7%	24.9276	24.8762	25.1789	25.6995	99.5%
x		25.4680	25.1427	99.1%	25.1601	24.8443	25.3204	25.2094	99.0%
σ		0.6998	0.3336	1.2%	0.2243	0.2353	0.4646	0.5500	0.4%
%RSD		2.7478	1.3267	1.2	0.8915	0.9471	1.8347	2.1816	0.5

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:04:33	97.5%	24.8641	24.8259	98.2%	25.0333	24.8530	25.0661
2	16:05:10	99.8%	24.8740	24.6630	100.0%	25.1072	25.0653	25.1607
3	16:05:46	100.0%	24.8833	24.7352	100.2%	25.1722	25.2481	25.1943
x		99.1%	24.8738	24.7414	99.5%	25.1043	25.0555	25.1404
σ		1.4%	0.0096	0.0816	1.1%	0.0695	0.1977	0.0665
%RSD		1.4	0.0386	0.3300	1.1	0.2768	0.7892	0.2646

CCB5 8/3/2016 4:13:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	110.7%	0.0026	101.7%	-0.0038	0.0442	0.0095	0.0100	0.0267
2	16:14:10	105.0%	0.0031	101.3%	0.0035	0.0326	0.0055	0.0025	0.0219
3	16:14:47	102.8%	0.0024	101.5%	0.0003	0.0239	0.0168	0.0140	0.0041
x		106.1%	0.0027	101.5%	-0.0000	0.0335	0.0106	0.0088	0.0176
σ		4.1%	0.0003	0.2%	0.0037	0.0102	0.0057	0.0058	0.0119
%RSD		3.8	12.0980	0.2	26642.8290	30.3808	54.0039	65.7423	67.6377

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	-0.0158	0.0219	99.6%	-0.0428	0.1741	-0.1056	-0.0371	99.3%
2	16:14:10	0.0390	0.0192	98.7%	0.0639	-0.0051	0.3906	0.1930	100.1%
3	16:14:47	-0.0229	0.0164	101.3%	0.0114	0.1907	-0.1284	0.1882	101.5%
x		0.0001	0.0192	99.9%	0.0108	0.1199	0.0522	0.1147	100.3%
σ		0.0339	0.0028	1.3%	0.0533	0.1086	0.2933	0.1315	1.1%
%RSD		28273.6860	14.4764	1.3	492.8990	90.5581	561.7553	114.6503	1.1

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:13:34	98.7%	0.0088	0.0135	95.3%	0.0078	0.0097	0.0061
2	16:14:10	99.5%	0.0115	0.0113	97.6%	0.0055	0.0058	0.0055
3	16:14:47	99.9%	0.0133	0.0128	97.7%	0.0071	0.0094	0.0069
x		99.3%	0.0112	0.0125	96.9%	0.0068	0.0083	0.0062
σ		0.6%	0.0023	0.0011	1.3%	0.0012	0.0022	0.0007
%RSD		0.6	20.4867	9.1484	1.4	17.5686	26.3555	11.5269

LLCCVW2 8/3/2016 4:17:12 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	45Sc	60Ni	62Ni	63Cu	65Cu	66Zn
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	111.8%	0.0229	102.0%	0.1743	0.1905	0.1063	0.1049	0.4778
2	16:17:49	104.0%	0.0222	100.0%	0.1824	0.2020	0.1002	0.0967	0.4777
3	16:18:26	106.4%	0.0231	101.5%	0.1656	0.1986	0.1063	0.1163	0.4734
x		107.4%	0.0227	101.1%	0.1741	0.1970	0.1043	0.1060	0.4763
σ		4.0%	0.0005	1.0%	0.0084	0.0059	0.0035	0.0098	0.0025
%RSD		3.7	2.1680	1.0	4.8449	3.0015	3.3565	9.2836	0.5279

Run	Time	67Zn	68Zn	71Ga	75As	77Se	78Se	82Se	103Rh
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	0.4323	0.4966	100.5%	0.4621	1.1062	0.9738	0.8781	100.4%
2	16:17:49	0.4907	0.4686	101.0%	0.5552	1.0625	0.7480	1.1965	100.3%
3	16:18:26	0.3776	0.4669	102.4%	0.4937	1.0171	1.0332	0.9922	101.9%
x		0.4335	0.4774	101.3%	0.5037	1.0619	0.9183	1.0223	100.9%
σ		0.0565	0.0167	1.0%	0.0473	0.0446	0.1505	0.1614	0.9%
%RSD		13.0374	3.4921	1.0	9.3968	4.1963	16.3868	15.7840	0.9

Run	Time	115In	121Sb	123Sb	175Lu	206Pb	207Pb	208Pb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:12	99.4%	0.0477	0.0534	96.8%	0.0223	0.0267	0.0221
2	16:17:49	100.9%	0.0599	0.0576	99.1%	0.0259	0.0250	0.0260
3	16:18:26	100.5%	0.0517	0.0613	99.4%	0.0209	0.0259	0.0229
x		100.3%	0.0531	0.0574	98.4%	0.0231	0.0259	0.0237
σ		0.8%	0.0062	0.0039	1.4%	0.0026	0.0009	0.0020
%RSD		0.8	11.6343	6.8667	1.4	11.1832	3.3896	8.5979

Service Request # K1608344 (Redigest Zn)_____
Calibration _____080516AMS03_____
QC in calibration__080516AMS03_____
QC Service Request # K1608011_____
STARLIMS run # 508566_____
Cal Std: MS20-75F ICSA Std: MS20-68H
ICV Std: MS20-75G ICSAB Std: MS20-68I
LLICV Std: MS20-74J I.S. Solution: MS20-46A

6020A DoD 5.0 Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within DoD 5.0 limit?	X		
12. Spikes within DoD 5.0 limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 70-120%?	X		
17. Linear range established with LRS?	X		
18. Adequate rinse out time allowed?	X		
20. Interferences checked?	X		
21. Se over MRL?		X	
22. Cd Correction Applied?			X
23. Was run prematurely stopped, If so why?		X	

Comments: LRS=200 ppb.

Primary Review by _____ Date 8/5/16
Secondary Review by _____ Date 8/5/16

R:\icp\misc\data review forms\6020 DoD Review Checklist

Data Review Form

Service Request #:	**K1608344**
Instrument ID#:	**K-ICP-MS-03**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-03 (X-Series) \080516AMS03.csv**
RUNNO:	**508566**

There are no issues to report.

Primary Approver: 8/5/16

Secondary Approver: 8/5/16

Sample List

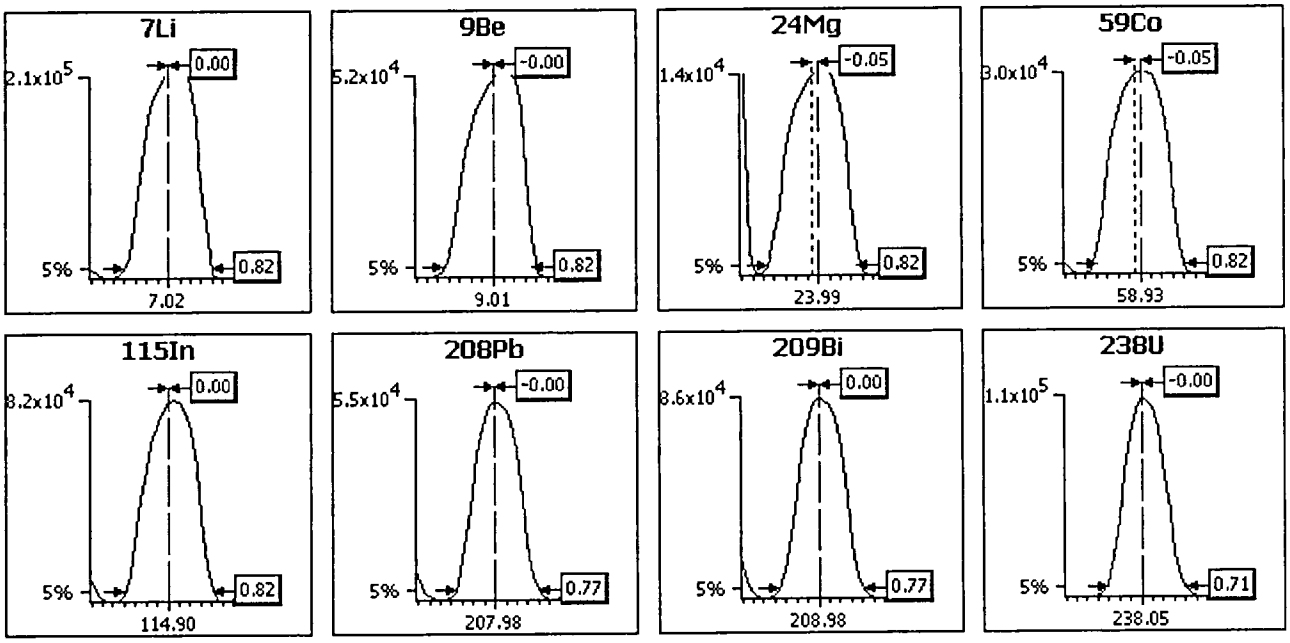
No	Label	Type	Weight	Rack	Row	Col	Height
1	Cal. Blk	Blank	1.000	0	1	1	145
2	Cal. Stn	Fully Quant Standard	1.000	0	1	2	145
3	ICV1	Unknown	1.000	0	1	3	145
4	CCV1	Unknown	1.000	0	1	2	145
5	ICB1	Unknown	1.000	0	1	1	145
6	CCB1	Unknown	1.000	0	1	1	145
7	LLICVW	Unknown	1.000	0	1	4	145
8	LRSTD	Unknown	1.000	1	1	1	145
9	ICSA	Unknown	1.000	0	1	5	145
10	ICSAB	Unknown	1.000	0	1	6	145
11	KQ1609201-01	Unknown	1.000	1	1	2	145
12	KQ1609201-02	Unknown	1.000	1	1	3	145
13	KQ1609201-03	Unknown	1.000	1	1	4	145
14	K1608011-007	Unknown	1.000	1	1	5	145
15	K1608011-007L	Unknown	1.000	1	1	6	145
16	K1608011-007A	Unknown	1.000	1	1	7	145
17	CCV2	Unknown	1.000	0	1	2	145
18	CCB2	Unknown	1.000	0	1	1	145
19	K1608207-015	Unknown	1.000	1	1	8	145
20	K1608209-015	Unknown	1.000	1	1	9	145
21	K1608210-015	Unknown	1.000	1	1	10	145
22	K1608325-014	Unknown	1.000	1	1	11	145
23	K1608344-013	Unknown	1.000	1	1	12	145
24	CCV3	Unknown	1.000	0	1	2	145
25	CCB3	Unknown	1.000	0	1	1	145
26	LLCCVW	Unknown	1.000	0	1	4	145

Performance Report

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Mass Calibration verification

Acquisition parameters
Sweeps : 100
Dwell : 1.0 mSecs
Point spacing : 0.05 amu
Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
7Li	0.90	0.60	0.10	0.82	0.00
9Be	0.90	0.60	0.10	0.82	-0.00
24Mg	0.90	0.60	0.10	0.82	-0.05
59Co	0.90	0.60	0.10	0.82	-0.05
115In	0.90	0.60	0.10	0.82	0.00
208Pb	0.90	0.60	0.10	0.77	-0.00
209Bi	0.90	0.60	0.10	0.77	0.00
238U	0.90	0.60	0.10	0.71	-0.00

Sample details
Acquired at : 8/5/2016 5:29:44 AM
Report name : Kelso Performance Report 3 [8/24/2011 10:10:34 AM]

Tune conditions

Major	
Extraction	-122
Lens 1	4.7
Focus	23.3
D1	-36.1
Pole Bias	0.3
Hexapole Bias	0.5
Nebuliser	0.79
Sampling Depth	63

Minor	
Lens 2	-18.8
Lens 3	-200.0
Forward power	1357
Horizontal	150
Vertical	376
D2	-155
DA	-32.2
Cool	13.0
Auxiliary	0.80

Global	
Standard resolution	110
High resolution	71
Analogue Detector	1951
PC Detector	3481

Add. Gases

Sensitivity and stability results

Acquisition parameters
Sweeps : 400

Run	Time	5Bkg	7Li	9Be	24Mg	59Co	115In	140Ce	156Ce O	208Pb
Dwell (mSecs)		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	-	-	5.0%
	Countrate	-	>1000	>1000	>1000	>1000	>1000	-	-	>1000
1	5:30:15 AM	0.250	219395.58	53374.477	14441.211	31635.198	85381.324	92278.225	1774.173	56833.348
2	5:31:28 AM	0.000	216799.65	52320.376	14251.662	31323.371	86029.139	93384.435	1717.412	57698.774
3	5:32:41 AM	0.000	212527.02	51402.663	14162.774	30968.157	85969.579	93441.517	1725.164	58051.257
4	5:33:53 AM	0.000	213919.62	51531.137	14088.158	31135.226	85938.285	93292.751	1749.168	58103.338
5	5:35:06 AM	0.000	216540.33	51523.343	13862.561	30871.830	85756.582	93084.886	1729.665	58561.766
x		0.050	215836.44	52030.400	14161.273	31186.756	85814.982	93096.363	1739.116	57849.697
σ		0.11	2679.42	835.32	212.79	303.88	262.89	477.01	22.83	645.71
%RSD		223.607	1.241	1.605	1.503	0.974	0.306	0.512	1.313	1.116

Run	Time	209Bi	220Bkg	238U
Dwell (mSecs)		10.0	10.0	10.0
Limits	%RSD	5.0%	-	5.0%
	Countrate	>1000	-	>1000
1	5:30:15 AM	88868.506	0.000	111865.05
2	5:31:28 AM	89567.314	0.000	113541.39
3	5:32:41 AM	90686.578	0.000	114116.27
4	5:33:53 AM	90799.699	0.000	114493.72
5	5:35:06 AM	90896.408	0.000	115034.49
x		90163.701	0.000	113810.18
σ		901.11	0.00	1216.10
%RSD		0.999	0.000	1.069

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0300
1	5:30:15 AM	0.019
2	5:31:28 AM	0.018
3	5:32:41 AM	0.018
4	5:33:53 AM	0.019
5	5:35:06 AM	0.019
x		0.0187
σ		0.00
%RSD		1.7832

Result : The performance report passed.

Dilution Corrected Concentrations

Cal. Blk 8/5/2016 5:39:58 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:39:58	-0.0118	0.0254	-0.0079	101.3%
2	05:40:09	0.0042	-0.0069	0.0063	100.9%
3	05:40:20	0.0075	-0.0185	0.0016	97.8%
x		-0.0000	-0.0000	0.0000	100.0%
σ		0.0103	0.0227	0.0073	1.9%
%RSD		0.0000	0.0000	0.0000	1.9

Cal. Stn 8/5/2016 5:42:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:42:12	25.0514	25.1194	24.6140	101.9%
2	05:42:22	25.2973	24.9918	25.3554	101.4%
3	05:42:33	24.6514	24.8888	25.0306	101.5%
x		25.0000	25.0000	25.0000	101.6%
σ		0.3260	0.1155	0.3717	0.3%
%RSD		1.3040	0.4619	1.4866	0.2

ICV1 8/5/2016 5:44:25 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:44:25	25.6702	29.6890	28.0159	100.5%
2	05:44:36	25.8448	29.9538	28.2114	100.4%
3	05:44:46	24.8765	28.5581	27.7659	101.1%
x		25.4638	29.4003	27.9977	100.7%
σ		0.5161	0.7412	0.2233	0.4%
%RSD		2.0267	2.5212	0.7976	0.4

CCV1 8/5/2016 5:46:39 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:46:39	25.3786	25.3760	25.4165	101.3%
2	05:46:50	25.0295	25.0916	24.9740	100.3%
3	05:47:00	25.2207	25.0019	24.5342	101.7%
x		25.2096	25.1565	24.9749	101.1%
σ		0.1748	0.1953	0.4411	0.7%
%RSD		0.6934	0.7763	1.7663	0.7

ICB1 8/5/2016 5:48:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:48:52	0.0726	0.0641	0.0891	101.6%
2	05:49:03	0.0731	0.1062	0.0653	99.7%
3	05:49:14	0.0719	0.0523	0.0796	100.5%
x		0.0725	0.0742	0.0780	100.6%
σ		0.0006	0.0283	0.0120	1.0%
%RSD		0.8264	38.1977	15.3424	1.0

CCB1 8/5/2016 5:57:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:57:26	-0.0388	-0.0200	-0.0370	101.0%
2	05:57:36	-0.0361	-0.0190	-0.0263	98.8%
3	05:57:47	-0.0478	0.0079	-0.0433	98.5%
x		-0.0409	-0.0104	-0.0355	99.4%
σ		0.0061	0.0158	0.0086	1.3%
%RSD		14.9863	152.7485	24.2370	1.3

LLICVW 8/5/2016 5:59:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	05:59:40	0.4505	0.4323	0.4425	99.2%
2	05:59:50	0.4367	0.4668	0.4864	97.7%
3	06:00:01	0.4301	0.3869	0.5136	97.5%
x		0.4391	0.4287	0.4808	98.2%
σ		0.0104	0.0401	0.0359	0.9%
%RSD		2.3645	9.3553	7.4625	0.9

LRSTD 8/5/2016 6:01:54 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:01:54	206.0177	206.6226	202.9570	98.5%
2	06:02:05	204.4385	201.2339	200.8658	99.6%
3	06:02:16	202.8644	204.3904	203.1290	99.2%
x		204.4402	204.0823	202.3173	99.1%
σ		1.5766	2.7075	1.2599	0.5%
%RSD		0.7712	1.3267	0.6228	0.5

ICSA 8/5/2016 6:05:52 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:05:52	2.0193	5.1031	1.7801	93.1%
2	06:06:03	2.0224	5.0883	1.7642	93.3%
3	06:06:14	2.0764	4.7413	1.8605	93.3%
x		2.0394	4.9776	1.8016	93.2%
σ		0.0321	0.2048	0.0516	0.2%
%RSD		1.5751	4.1136	2.8656	0.2

ICSAB 8/5/2016 6:08:08 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:08:08	26.6336	28.2492	24.3451	91.8%
2	06:08:19	26.4267	28.1931	24.7238	93.0%
3	06:08:29	26.2232	28.9694	24.6132	93.1%
x		26.4278	28.4705	24.5607	92.6%
σ		0.2052	0.4329	0.1947	0.7%
%RSD		0.7765	1.5205	0.7928	0.8

KQ1609201-01 8/5/2016 6:10:22 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:10:22	-0.0214	-0.0032	-0.0109	94.9%
2	06:10:32	-0.0145	0.0598	-0.0137	94.6%
3	06:10:43	-0.0069	0.0617	-0.0219	93.1%
x		-0.0143	0.0394	-0.0155	94.2%
σ		0.0073	0.0369	0.0057	1.0%
%RSD		50.9433	93.6065	36.6097	1.0

KQ1609201-02 8/5/2016 6:12:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:12:34	24.0525	27.2375	26.8497	95.6%
2	06:12:45	23.8612	28.1148	26.3448	94.9%
3	06:12:55	23.7234	27.8112	26.8798	94.1%
x		23.8790	27.7212	26.6914	94.9%
σ		0.1653	0.4456	0.3006	0.7%
%RSD		0.6923	1.6073	1.1260	0.8

KQ1609201-03 8/5/2016 6:14:46 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:14:46	24.0373	28.3844	27.0564	95.8%
2	06:14:57	24.2141	27.4928	26.8380	96.2%
3	06:15:08	24.8982	28.6710	26.4043	94.0%
x		24.3832	28.1827	26.7663	95.4%
σ		0.4547	0.6145	0.3319	1.2%
%RSD		1.8647	2.1803	1.2401	1.2

K1608011-007 8/5/2016 6:16:59 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:16:59	0.2927	0.3545	0.2731	95.7%
2	06:17:10	0.3067	0.3661	0.2769	94.6%
3	06:17:21	0.2960	0.3294	0.3064	95.1%
x		0.2985	0.3500	0.2855	95.1%
σ		0.0074	0.0188	0.0182	0.5%
%RSD		2.4652	5.3692	6.3785	0.6

K1608011-007L 8/5/2016 6:19:12 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:19:12	0.3974	0.3297	0.3730	96.7%
2	06:19:23	0.4467	0.4764	0.4205	94.8%
3	06:19:34	0.4724	0.4728	0.4131	94.2%
x		0.4388	0.4263	0.4022	95.2%
σ		0.0381	0.0837	0.0255	1.3%
%RSD		8.6846	19.6320	6.3415	1.3

K1608011-007A 8/5/2016 6:21:26 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:21:26	22.7930	23.0239	22.6704	95.8%
2	06:21:37	22.3784	22.8072	22.2122	94.6%
3	06:21:48	22.2870	22.4722	21.8112	95.7%
x		22.4861	22.7678	22.2313	95.4%
σ		0.2696	0.2780	0.4299	0.7%
%RSD		1.1991	1.2208	1.9339	0.7

CCV2 8/5/2016 6:23:40 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:23:40	24.5378	25.0376	24.9515	96.2%
2	06:23:51	24.7700	25.0390	24.9692	95.0%
3	06:24:02	25.0346	25.3246	24.7635	95.1%
x		24.7808	25.1337	24.8947	95.4%
σ		0.2486	0.1653	0.1140	0.6%
%RSD		1.0032	0.6576	0.4580	0.7

CCB2 8/5/2016 6:25:53 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:25:53	-0.0169	0.0107	-0.0213	94.9%
2	06:26:04	-0.0268	-0.0249	-0.0298	97.1%
3	06:26:15	-0.0110	-0.0167	0.0014	94.3%
x		-0.0182	-0.0103	-0.0166	95.4%
σ		0.0080	0.0187	0.0161	1.5%
%RSD		43.7226	180.9580	97.4558	1.5

K1608207-015 8/5/2016 6:28:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:28:06	0.3308	0.3330	0.2859	94.2%
2	06:28:17	0.2970	0.3973	0.3275	93.9%
3	06:28:28	0.3259	0.3241	0.3013	93.0%
x		0.3179	0.3514	0.3049	93.7%
σ		0.0182	0.0399	0.0210	0.7%
%RSD		5.7386	11.3615	6.8975	0.7

K1608209-015 8/5/2016 6:30:20 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:30:20	0.4010	0.4068	0.4051	93.4%
2	06:30:31	0.3375	0.3609	0.3307	94.2%
3	06:30:42	0.3547	0.4690	0.3844	93.6%
x		0.3644	0.4122	0.3734	93.8%
σ		0.0328	0.0543	0.0384	0.4%
%RSD		9.0135	13.1705	10.2791	0.4

K1608210-015 8/5/2016 6:32:36 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:32:36	0.2816	0.2995	0.2888	93.8%
2	06:32:47	0.2743	0.3900	0.2807	94.0%
3	06:32:57	0.2887	0.3743	0.2547	92.8%
x		0.2815	0.3546	0.2748	93.6%
σ		0.0072	0.0484	0.0178	0.6%
%RSD		2.5706	13.6407	6.4898	0.7

K1608325-014 8/5/2016 6:34:51 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:34:51	0.4234	0.5461	0.4245	92.6%
2	06:35:02	0.3883	0.4967	0.3946	93.7%
3	06:35:13	0.4344	0.4484	0.3683	92.3%
x		0.4153	0.4971	0.3958	92.9%
σ		0.0241	0.0488	0.0281	0.8%
%RSD		5.8036	9.8213	7.1022	0.8

K1608344-013 8/5/2016 6:37:06 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:37:06	0.5489	0.4987	0.4725	94.6%
2	06:37:17	0.5154	0.5805	0.5625	93.8%
3	06:37:28	0.5511	0.5989	0.5334	93.2%
x		0.5385	0.5594	0.5228	93.9%
σ		0.0200	0.0533	0.0459	0.7%
%RSD		3.7174	9.5304	8.7855	0.7

CCV3 8/5/2016 6:39:21 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:39:21	25.2609	25.7288	24.8825	94.6%
2	06:39:32	24.4702	24.7630	24.3337	95.1%
3	06:39:43	24.5560	24.4272	23.9673	96.2%
x		24.7624	24.9730	24.3945	95.3%
σ		0.4339	0.6757	0.4606	0.8%
%RSD		1.7522	2.7057	1.8882	0.9

CCB3 8/5/2016 6:41:34 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:41:34	-0.0182	-0.0102	-0.0126	95.1%
2	06:41:45	-0.0234	0.0042	-0.0016	94.4%
3	06:41:56	-0.0090	-0.0239	-0.0079	94.8%
x		-0.0169	-0.0100	-0.0074	94.7%
σ		0.0073	0.0141	0.0055	0.4%
%RSD		43.0510	140.4253	74.6547	0.4

LLCCVW 8/5/2016 6:43:50 AM

User Pre-dilution: 1.000

Run	Time	66Zn	67Zn	68Zn	71Ga
		ppb	ppb	ppb	ppb
1	06:43:50	0.4768	0.3745	0.4139	95.8%
2	06:44:00	0.4794	0.4953	0.4537	96.3%
3	06:44:12	0.4501	0.4373	0.4428	95.6%
x		0.4687	0.4357	0.4368	95.9%
σ		0.0162	0.0604	0.0206	0.4%
%RSD		3.4595	13.8632	4.7129	0.4

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 26, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on September 12, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37049:

SDG #	Fraction:
K1608207 K160820, K1608210, K1608325, K1608344	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #37049 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	(4) Metals (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	K1608207	09/12/16	09/26/16	1	4																														
A	K1608207	09/12/16	09/26/16	0	5																														
B	K1608209	09/12/16	09/26/16	1	9																														
C	K1608210	09/12/16	09/26/16	1	9																														
D	K1608325	09/12/16	09/26/16	1	13																														
E	K1608344	09/12/16	09/26/16	1	9																														
Total	J/PG			5	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\37049ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDGs: K1608207, K1608209, K1608210, K1608325, K1608344

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 23, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the July 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilution, laboratory control sample (LCS), field duplicate samples, split samples, and internal standards. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, split samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the method were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the method blanks reviewed by ADR with the exception of copper, lead, and zinc. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosures I and II.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608207/ 6020A	ICB/CCB	Antimony Lead	0.020 ug/L 0.008 ug/L	All water samples in SDG K1608207
K1608207/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816
K1608209/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FTBL-SS-B34-0-6-071916
K1608209/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608209
K1608210/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	All water samples in SDG K1608210

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608325/ 6020A	ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B03-0-6-072116 FD072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116
K1608325/ 6020A	ICB/CCB	Antimony Lead	0.013 ug/L 0.008 ug/L	All water samples in SDG K1608325
K1608344/ 6020A	ICB/CCB	Antimony	0.092 ug/L	FD072016
K1608344/ 6020A	ICB/CCB	Antimony Lead	0.012 ug/L 0.008 ug/L	EB072016

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1608207/ 6020A	EB071816	Lead	0.038 ug/L	0.038U ug/L
K1608209/ 6020A	EB071916	Lead	0.018 ug/L	0.018U ug/L
K1608210/ 6020A	EB071516	Lead	0.019 ug/L	0.019U ug/L
K1608325/ 6020A	FD072116	Antimony	0.093 mg/Kg	0.093U mg/Kg
K1608325/ 6020A	EB072116	Antimony Lead	0.012 ug/L 0.022 ug/L	0.012U ug/L 0.022U ug/L
K1608344/ 6020A	FD072016	Antimony	0.152 mg/Kg	0.152U mg/Kg
K1608344/ 6020A	EB072016	Antimony Lead	0.007 ug/L 0.034 ug/L	0.007U ug/L 0.034U ug/L

VI. Field Blanks

Ten equipment blanks were collected and analyzed for metals. One equipment blank had detections for copper, lead, and zinc. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of four MS/MSD pairs for antimony and lead. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R or serial dilution %R were within QC limits. The details are provided in Enclosures I and II.

X. Duplicate Sample Analysis/Triplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) and triplicate (TRP) analyses specified for the samples in these SDGs, and therefore duplicate and triplicate analyses were not performed for these SDGs.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XIII. Field Duplicates

Five field duplicate pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of antimony, copper, and lead in three duplicate pairs. The associated sample results were qualified as detected estimated (J). The field duplicate result comparisons are provided in Enclosure I.

Four split sample pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of lead in one split sample pair. The associated sample results were qualified as detected estimated (J). No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The split sample comparisons are provided in Enclosures I and II.

XIV. Internal Standards

All internal standard areas percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to field duplicate RPD and results reported below the LOQ, data were qualified as estimated in eight samples.

Due to split sample RPD, data were qualified as estimated in two samples.

Due to method blank contamination, data were qualified as not detected in four samples.

Due to calibration blank contamination, data were qualified as not detected in seven samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jul-2016	FD071516	K1608210-012	FD	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B27-0-6-071516	K1608210-003	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B28-0-6-071516	K1608210-004	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B29-0-6-071516	K1608210-005	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B30-0-6-071516	K1608210-006	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B39-0-6-071516	K1608210-010	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B40-0-6-071516	K1608210-011	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B41-0-6-071516	K1608210-014	N	EPA 3050B	6020A	III
15-Jul-2016	FTBL-SS-B42-0-6-071516	K1608210-013	N	EPA 3050B	6020A	III
15-Jul-2016	EB071516	K1608210-015	EB	CLFAA	6020A	III
15-Jul-2016	EB071516RE	K1608210-015RE	EB	CLFAA	6020A	III
18-Jul-2016	FD071816	K1608207-014	FD	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B60-0-6-071816	K1608207-006	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B59-0-6-071816	K1608207-005	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B58-0-6-071816	K1608207-004	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816	K1608207-003	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	MS	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B57-0-6-071816MSD	K1608207-003SD	MSD	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B52-0-6-071816	K1608207-011	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B51-0-6-071816	K1608207-010	N	EPA 3050B	6020A	IV
18-Jul-2016	FTBL-SS-B53-0-6-071816	K1608207-012	N	EPA 3050B	6020A	III
18-Jul-2016	FTBL-SS-B54-0-6-071816	K1608207-013	N	EPA 3050B	6020A	III
18-Jul-2016	EB071816	K1608207-015	EB	CLFAA	6020A	III
18-Jul-2016	EB071816RE	K1608207-015RE	EB	CLFAA	6020A	III
19-Jul-2016	FD071916	K1608209-014	FD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B33-0-6-071916	K1608209-004	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
19-Jul-2016	FTBL-SS-B34-0-6-071916	K1608209-005	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B35-0-6-071916	K1608209-006	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B36-0-6-071916	K1608209-007	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916	K1608209-010	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	MS	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B45-0-6-071916MSD	K1608209-010SD	MSD	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B46-0-6-071916	K1608209-011	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B47-0-6-071916	K1608209-012	N	EPA 3050B	6020A	III
19-Jul-2016	FTBL-SS-B48-0-6-071916	K1608209-013	N	EPA 3050B	6020A	III
19-Jul-2016	EB071916	K1608209-015	EB	CLFAA	6020A	III
19-Jul-2016	EB071916RE	K1608209-015RE	EB	CLFAA	6020A	III
20-Jul-2016	FD072016	K1608344-012	FD	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B21-0-6-072016	K1608344-002	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B22-0-6-072016	K1608344-003	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B23-0-6-072016	K1608344-004	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B24-0-6-072016	K1608344-005	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B15-0-6-072016	K1608344-008	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B16-0-6-072016	K1608344-009	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B17-0-6-072016	K1608344-010	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016	K1608344-011	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	MS	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B18-0-6-072016MSD	K1608344-011SD	MSD	EPA 3050B	6020A	III
20-Jul-2016	EB072016	K1608344-013	EB	CLFAA	6020A	III
20-Jul-2016	EB072016RE	K1608344-013RE	EB	CLFAA	6020A	III
21-Jul-2016	FD072116	K1608325-010	FD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B09-0-6-072116	K1608325-003	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-Jul-2016	FTBL-SS-B11-0-6-072116	K1608325-005	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B10-0-6-072116	K1608325-004	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B12-0-6-072116	K1608325-006	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B07-0-12-072116	K1608325-001	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B08-0-12-072116	K1608325-002	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116	K1608325-009	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	MS	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B03-0-6-072116MSD	K1608325-009SD	MSD	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116	K1608325-011	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B04-0-6-072116RE	K1608325-011RE	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B05-0-6-072116	K1608325-012	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B06-0-6-072116	K1608325-013	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B01-0-12-072116	K1608325-007	N	EPA 3050B	6020A	III
21-Jul-2016	FTBL-SS-B02-0-12-072116	K1608325-008	N	EPA 3050B	6020A	III
21-Jul-2016	EB072116	K1608325-014	EB	CLFAA	6020A	III
21-Jul-2016	EB072116RE	K1608325-014RE	EB	CLFAA	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608207

Method Category: METALS

Method: 6020A **Matrix:** Soil

Sample ID: FD071816 **Collected:** 7/18/2016 12:00:00 AM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.166	J	0.021	LOD	0.043	LOQ	mg/Kg	J	Fd
COPPER	9.95	=	0.043	LOD	0.085	LOQ	mg/Kg	J	Fd
LEAD	21.2	J	0.011	LOD	0.043	LOQ	mg/Kg	J	Fd

Sample ID: FTBL-SS-B54-0-6-071816 **Collected:** 7/18/2016 12:20:00 PM **Analysis Type:** Initial **Dilution:** 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	2.16	J	0.023	LOD	0.046	LOQ	mg/Kg	J	Fd
COPPER	40.1	=	0.046	LOD	0.091	LOQ	mg/Kg	J	Fd
LEAD	330	J	0.011	LOD	0.046	LOQ	mg/Kg	J	Fd

Method Category: METALS

Method: 6020A **Matrix:** Water

Sample ID: EB071816 **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Initial/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.038	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Sample ID: EB071816RE **Collected:** 7/18/2016 1:50:00 PM **Analysis Type:** Reanalysis-1/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608209

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608209

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/19/2016 12:00:00

Sample ID: FD071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.957	J	0.019	LOD	0.038	LOQ	mg/Kg	J	Fd
LEAD	169	J	0.009	LOD	0.038	LOQ	mg/Kg	J	Fd

7/19/2016 11:25:00

Sample ID: FTBL-SS-B45-0-6-071916 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.543	J	0.018	LOD	0.036	LOQ	mg/Kg	J	Fd
LEAD	56.0	J	0.009	LOD	0.036	LOQ	mg/Kg	J	Fd, ProfJudg

Method Category: METALS

Method: 6020A **Matrix:** Water

7/19/2016 1:50:00

Sample ID: EB071916 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.018	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/19/2016 1:50:00

Sample ID: EB071916RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608210

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/15/2016 12:00:00

Sample ID: FD071516 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.353	J	0.020	LOD	0.041	LOQ	mg/Kg	J	Fd

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608210

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/15/2016 12:20:00

Sample ID: FTBL-SS-B42-0-6-071516 *Collected:* PM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.894	J	0.019	LOD	0.039	LOQ	mg/Kg	J	Fd

Method Category: METALS

Method: 6020A **Matrix:** Water

7/15/2016 3:15:00

Sample ID: EB071516 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.019	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

7/15/2016 3:15:00

Sample ID: EB071516RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608325

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/21/2016 12:00:00

Sample ID: FD072116 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.093	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.012	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1608325

Method Category: METALS

Method: 6020A **Matrix:** Water

7/21/2016 1:50:00

Sample ID: EB072116 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.13	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.022	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

7/21/2016 1:50:00

Sample ID: EB072116RE *Collected:* PM *Analysis Type:* Reanalysis-1/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

SDG: K1608344

Method Category: METALS

Method: 6020A **Matrix:** Soil

7/20/2016 12:00:00

Sample ID: FD072016 *Collected:* AM *Analysis Type:* Initial *Dilution:* 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.152	J	0.022	LOD	0.044	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A **Matrix:** Water

7/20/2016 1:50:00

Sample ID: EB072016 *Collected:* PM *Analysis Type:* Initial/TOT *Dilution:* 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.007	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
COPPER	0.15	=	0.05	LOD	0.10	LOQ	ug/L	U	Mb
LEAD	0.034	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1608209, K1608207, K1608210,

Laboratory: ALS_K

EDD Filename: K1608209_SEDD2A_rev, K1608207_SEDD2A_rev, K1608210_SEDD2A_rev, K1608325_SEDD2A_rev, K1608344_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Fd	Field Duplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

K1608207

Method Blank Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071816 FTBL-SS-B51-0-6-071816 FTBL-SS-B52-0-6-071816 FTBL-SS-B53-0-6-071816 FTBL-SS-B54-0-6-071816 FTBL-SS-B57-0-6-071816 FTBL-SS-B58-0-6-071816 FTBL-SS-B59-0-6-071816 FTBL-SS-B60-0-6-071816

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071816

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B57-0-6-071816MS (Dry) FTBL-SS-B57-0-6-071816MSD (Dry) (FTBL-SS-B57-0-6-071816)	ANTIMONY LEAD	38 -	38 83	72.00-124.00 84.00-118.00	- -	ANTIMONY LEAD	No Qual, Sb, Post Spike = 102% Pb, Serial Dilution OK

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B54-0-6-071816 (Dry)	FD071816 (Dry)			
ZINC	67.3	110	48	50.00	No Qualifiers Applied
ANTIMONY	2.16	0.166	171	50.00	J(all detects)
COPPER	40.1	9.95	120	50.00	
LEAD	330	21.2	176	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608207 **Laboratory: ALS_K**

EDD Filename: K1608207_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071816RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049A4a
SDG #: K1608207
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR~~IV~~
SD

Date: 9/15/18
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. MSD = %Rec out; PB ok, %RPD ok, SER ok = NA
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	SER=(-)
X.	Laboratory control samples	N	Not reviewed for ADR validation.
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	FTBL-SS-B52-0-6-071816	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	EB071816	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 31049A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: 3D
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DUP-11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) Fe, (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)
Soil preparation factor applied: 100X
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.020	0.1										
Pb			0.008	0.04	0.038									

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Quality Control
Outlier Reports

K1608209

Method Blank Outlier Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609300-03	8/24/2016 9:32:00 PM	LEAD	0.006 mg/Kg	FD071916 FTBL-SS-B33-0-6-071916 FTBL-SS-B34-0-6-071916 FTBL-SS-B35-0-6-071916 FTBL-SS-B36-0-6-071916 FTBL-SS-B45-0-6-071916 FTBL-SS-B46-0-6-071916 FTBL-SS-B47-0-6-071916 FTBL-SS-B48-0-6-071916

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071916

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071916(Initial/TOT)	LEAD	0.018 ug/L	0.018U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	LEAD	123	134	84.00-118.00	-	LEAD	No Qual, Serial Dilution OK
FTBL-SS-B45-0-6-071916MS (Dry) FTBL-SS-B45-0-6-071916MSD (Dry) (FTBL-SS-B45-0-6-071916)	ANTIMONY	42	41	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 98%

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B45-0-6-071916 (Dry)	FD071916 (Dry)			
COPPER	18.7	24.0	25	50.00	No Qualifiers Applied
ZINC	54.7	61.6	12	50.00	
ANTIMONY	0.543	0.957	55	50.00	J(all detects)
LEAD	56.0	169	100	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608209 **Laboratory: ALS_K**

EDD Filename: K1608209_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071916	COPPER LEAD	J J	0.07 0.018	0.10 0.020	LOQ LOQ	ug/L ug/L	J (all detects)
EB071916RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

LDC #: 37049B4a
SDG #: K1608209
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/8/16
Page: 1 of 1
Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD: SB out; PS OK = NQ PB out; SER OK
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (5)
X.	Laboratory control samples	N	
XI.	~~Field~~ Split Duplicates	SW	SD = (5, FTBL-SS-B45-0-6-071916-DA) (SDG: FA355653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B33-0-6-071916	K1608209-004	Soil	07/19/16
2	FTBL-SS-B34-0-6-071916	K1608209-005	Soil	07/19/16
3	FTBL-SS-B35-0-6-071916	K1608209-006	Soil	07/19/16
4	FTBL-SS-B36-0-6-071916	K1608209-007	Soil	07/19/16
5	FTBL-SS-B45-0-6-071916	K1608209-010	Soil	07/19/16
6	FTBL-SS-B46-0-6-071916	K1608209-011	Soil	07/19/16
7	FTBL-SS-B47-0-6-071916	K1608209-012	Soil	07/19/16
8	FTBL-SS-B48-0-6-071916	K1608209-013	Soil	07/19/16
9	FD071916	K1608209-014	Soil	07/19/16
10	EB071916	K1608209-015	Water	07/19/16
11	FTBL-SS-B45-0-6-071916MS	K1608209-010MS	Soil	07/19/16
12	FTBL-SS-B45-0-6-071916MSD	K1608209-010MSD	Soil	07/19/16
13				
14				
15				

LDC #: 37044A84

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: OD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, (Co) (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
10	W	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC:11-12	S	(Al) (Sb) As, Ba, Be, Cd, Ca, Cr, Co, (Cu) (Fe) (Pb) Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn) Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___

Comments: Mercury by CVAA if performed

LDC #: 37049B4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 2

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.092	0.23										

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.018									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049B4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Page: 1 of
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	5	FTBL-SS-B45-0-6-071916-QA (SDG: FA35653)		
Antimony	0.543	2.1	118	NQ
Copper	18.7	17.3	8	
Lead	56.0	215	117	Jdet/A (det)
Zinc	54.7	48.1	13	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049B4a.wpd

Quality Control
Outlier Reports

K1608210

Method Blank Outlier Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609274-01	8/24/2016 6:59:00 PM	LEAD ZINC	0.026 mg/Kg 0.19 mg/Kg	FD071516 FTBL-SS-B27-0-6-071516 FTBL-SS-B28-0-6-071516 FTBL-SS-B29-0-6-071516 FTBL-SS-B30-0-6-071516 FTBL-SS-B39-0-6-071516 FTBL-SS-B40-0-6-071516 FTBL-SS-B41-0-6-071516 FTBL-SS-B42-0-6-071516

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071516

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB071516(Initial/TOT)	LEAD	0.019 ug/L	0.019U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB071516	COPPER LEAD	J J	0.07 0.019	0.10 0.020	LOQ LOQ	ug/L ug/L	J (all detects)
EB071516RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608210 **Laboratory: ALS_K**

EDD Filename: K1608210_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B42-0-6-071516 (Dry)	FD071516 (Dry)			
COPPER	24.1	23.3	3	50.00	No Qualifiers Applied
LEAD	122	110	10	50.00	
ZINC	68.8	76.6	11	50.00	
ANTIMONY	0.894	0.353	87	50.00	J(all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 37049C4a
SDG #: K1608210
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (B, FTBL-SS-B27-0-6-071516-DA) (SDG: FA35653)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B27-0-6-071516	K1608210-003	Soil	07/15/16
2	FTBL-SS-B28-0-6-071516	K1608210-004	Soil	07/15/16
3	FTBL-SS-B29-0-6-071516	K1608210-005	Soil	07/15/16
4	FTBL-SS-B30-0-6-071516	K1608210-006	Soil	07/15/16
5	FTBL-SS-B39-0-6-071516	K1608210-010	Soil	07/15/16
6	FTBL-SS-B40-0-6-071516	K1608210-011	Soil	07/15/16
7	FD071516	K1608210-012	Soil	07/15/16
8	FTBL-SS-B42-0-6-071516	K1608210-013	Soil	07/15/16
9	FTBL-SS-B41-0-6-071516	K1608210-014	Soil	07/15/16
10	EB071516	K1608210-015	Water	07/15/16
11	FTBL-SS-B27-0-6-071516MS	K1608210-003MS	Soil	07/15/16
12	FTBL-SS-B27-0-6-071516MSD	K1608210-003MSD	Soil	07/15/16
13				
14				
15				

LDC #: 37046C4A

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049C4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X
Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06										
Pb			0.008	0.04	0.019									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049C4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: 3D
2nd Reviewer:

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y/N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B42-0-6-071516-QA (SDG: FA35653)		
Antimony	0.894	0.83U	7	
Copper	24.1	24.4	1	
Lead	122	102	18	
Zinc	68.8	61.8	11	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049C4a.wpd

Quality Control
Outlier Reports

K1608325

Method Blank Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609275-03	8/24/2016 5:38:00 PM	COPPER LEAD ZINC	0.035 mg/Kg 0.038 mg/Kg 0.36 mg/Kg	FD072116 FTBL-SS-B01-0-12-072116 FTBL-SS-B02-0-12-072116 FTBL-SS-B03-0-6-072116 FTBL-SS-B04-0-6-072116 FTBL-SS-B04-0-6-072116RE FTBL-SS-B05-0-6-072116 FTBL-SS-B06-0-6-072116 FTBL-SS-B07-0-12-072116 FTBL-SS-B08-0-12-072116 FTBL-SS-B09-0-6-072116 FTBL-SS-B10-0-6-072116 FTBL-SS-B11-0-6-072116 FTBL-SS-B12-0-6-072116

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072116

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072116(Initial/TOT)	COPPER	0.13 ug/L	0.13U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B03-0-6-072116MS (Dry) FTBL-SS-B03-0-6-072116MSD (Dry) (FTBL-SS-B03-0-6-072116)	ANTIMONY	50	50	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 101%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Reporting Limit Outliers

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072116	ANTIMONY	J	0.012	0.050	LOQ	ug/L	J (all detects)
EB072116RE	ZINC	J	0.4	0.5	LOQ	ug/L	J (all detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608325 **Laboratory: ALS_K**

EDD Filename: K1608325_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B03-0-6-072116 (Dry)	FD072116 (Dry)			
ANTIMONY	0.136	0.093	38	50.00	No Qualifiers Applied
COPPER	9.48	7.54	23	50.00	
LEAD	23.6	15.0	45	50.00	
ZINC	45.5	47.2	4	50.00	

LDC #: 37049D4a
SDG #: K1608325
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 9/15/16

Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D = SB out; PS in = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (9)
X.	Laboratory control samples	N	
XI.	~~Field~~ Duplicates	N	SD = (9, FTBL-SS-B03-0-6-072116-2A)
XII.	Internal Standard (ICP-MS)	A	(SD6: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B07-0-12-072116	K1608325-001	Soil	07/21/16
2	FTBL-SS-B08-0-12-072116	K1608325-002	Soil	07/21/16
3	FTBL-SS-B09-0-6-072116	K1608325-003	Soil	07/21/16
4	FTBL-SS-B10-0-6-072116	K1608325-004	Soil	07/21/16
5	FTBL-SS-B11-0-6-072116	K1608325-005	Soil	07/21/16
6	FTBL-SS-B12-0-6-072116	K1608325-006	Soil	07/21/16
7	FTBL-SS-B01-0-12-072116	K1608325-007	Soil	07/21/16
8	FTBL-SS-B02-0-12-072116	K1608325-008	Soil	07/21/16
9	FTBL-SS-B03-0-6-072116	K1608325-009	Soil	07/21/16
10	FD072116	K1608325-010	Soil	07/21/16
11	FTBL-SS-B04-0-6-072116	K1608325-011	Soil	07/21/16
12	FTBL-SS-B05-0-6-072116	K1608325-012	Soil	07/21/16
13	FTBL-SS-B06-0-6-072116	K1608325-013	Soil	07/21/16
14	EB072116	K1608325-014	Water	07/21/16
15	FTBL-SS-B03-0-6-072116MS	K1608325-009MS	Soil	07/21/16

LDC #: 37049D4a

SDG #: K1608325

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/16

Reviewer: JD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

	Client ID	Lab ID	Matrix	Date
16	FTBL-SS-B03-0-6-072116MSD	K1608325-009MSD	Soil	07/21/16
17				
18				
19				
20				
21				

Notes:

LDC #: 31045D4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: SD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-13	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
14	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
QC-15-10	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049D4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9-13

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.048	0.12	0.093									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	14									
Sb			0.013	0.065	0.012									
Pb			0.008	0.04	0.022									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049D4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: SB
2nd Reviewer: [signature]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	9	FTBL-SS-B03-0-6-072116-QA (SDG: FA35653)		
Antimony	0.136	2.8U	181	NQ
Copper	9.48	9.8	3	
Lead	23.6	25.7	9	
Zinc	45.5	52.3	14	

NQ = No qual because one or both samples < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049D4a.wpd

Quality Control
Outlier Reports

K1608344

Method Blank Outlier Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609920-03	8/24/2016 8:29:00 PM	LEAD ZINC	0.007 mg/Kg 0.14 mg/Kg	FD072016 FTBL-SS-B15-0-6-072016 FTBL-SS-B16-0-6-072016 FTBL-SS-B17-0-6-072016 FTBL-SS-B18-0-6-072016 FTBL-SS-B21-0-6-072016 FTBL-SS-B22-0-6-072016 FTBL-SS-B23-0-6-072016 FTBL-SS-B24-0-6-072016

Method: **6020A**
Matrix: **Water**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609039-01	8/3/2016 3:34:00 PM	COPPER LEAD	0.05 ug/L 0.004 ug/L	EB072016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB072016(Initial/TOT)	COPPER	0.15 ug/L	0.15U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SS-B18-0-6-072016MS (Dry) FTBL-SS-B18-0-6-072016MSD (Dry) (FTBL-SS-B18-0-6-072016)	ANTIMONY	38	38	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 103%

Reporting Limit Outliers

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**

Matrix: **Water**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
EB072016	ANTIMONY	J	0.007	0.050	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1608344 **Laboratory: ALS_K**

EDD Filename: K1608344_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B18-0-6-072016 (Dry)	FD072016 (Dry)			
ANTIMONY	0.126	0.152	19	50.00	No Qualifiers Applied
COPPER	16.8	14.2	17	50.00	
LEAD	25.2	20.2	22	50.00	
ZINC	51.6	42.6	19	50.00	

LDC #: 37049E4a (9 of 30)

SDG #: K1608344

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 9/15/17

Page: 1 of 1

Reviewer: SD

2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = Sb out = PS ok = NC
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(8)
X.	Laboratory control samples	N	
XI.	~~Field Duplicates~~ Split	N	SD=(8, FTBL-SS-B18-0-6-072016-DA)
XII.	Internal Standard (ICP-MS)	A	(SDG: FA35653)
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B21-0-6-072016	K1608344-002	Soil	07/20/16
2	FTBL-SS-B22-0-6-072016	K1608344-003	Soil	07/20/16
3	FTBL-SS-B23-0-6-072016	K1608344-004	Soil	07/20/16
4	FTBL-SS-B24-0-6-072016	K1608344-005	Soil	07/20/16
5	FTBL-SS-B15-0-6-072016	K1608344-008	Soil	07/20/16
6	FTBL-SS-B16-0-6-072016	K1608344-009	Soil	07/20/16
7	FTBL-SS-B17-0-6-072016	K1608344-010	Soil	07/20/16
8	FTBL-SS-B18-0-6-072016	K1608344-011	Soil	07/20/16
9	FD072016	K1608344-012	Soil	07/20/16
10	EB072016	K1608344-013	Water	07/20/16
11	FTBL-SS-B18-0-6-072016MS	K1608344-011MS	Soil	07/20/16
12	FTBL-SS-B18-0-6-072016MSD	K1608344-011MSD	Soil	07/20/16
13				
14				
15				

LDC #: 37042EV4 (9 of 50)

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JD
2nd reviewer: SM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
10	W	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
DC, 11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37042E4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD
2nd Reviewer:

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 9

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	9									
Sb			0.092	0.23	0.152									

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: 10

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	10									
Sb			0.012	0.06	0.007									
Pb			0.008	0.04	0.034									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 37049E4a

VALIDATION FINDINGS WORKSHEET
Split Duplicates

Reviewer: SD
2nd Reviewer: CL

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qual. (Parent Only)
	8	FTBL-SS-B18-0-6-072016-QA (SDG: FA35653)		
Antimony	0.126	0.74U	142	NQ
Copper	16.8	14.6	14	
Lead	25.2	22.4	12	
Zinc	51.6	39.3	27	

No qual because one or both results < 5X LOQ

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\37049E4a.wpd

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 21, 2016

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1608207

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-SS-B57-0-6-071816	K1608207-003	Soil	07/18/16
FTBL-SS-B58-0-6-071816	K1608207-004	Soil	07/18/16
FTBL-SS-B59-0-6-071816	K1608207-005	Soil	07/18/16
FTBL-SS-B60-0-6-071816	K1608207-006	Soil	07/18/16
FTBL-SS-B51-0-6-071816	K1608207-010	Soil	07/18/16
FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Copper, Lead, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Lead Zinc	0.026 mg/Kg 0.19 mg/Kg	All samples in SDG K1608207
ICB/CCB	Antimony	0.048 ug/L	FTBL-SS-B57-0-6-071816

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

Sample EB071816 was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
EB071816	07/18/16	Copper Lead Zinc	0.15 ug/L 0.038 ug/L 0.3 ug/L	All soil samples in SDG K1608207

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For FTBL-SS-B57-0-6-071816MS/MSD, no data were qualified for Antimony and Lead percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1608207

No Sample Data Qualified in this SDG

LDC #: 37049A4a

SDG #: K1608207

Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

~~ADR~~/IV

SD

Date: 9/15/16

Page: 1 of 1

Reviewer: SD

2nd Reviewer: A

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	7/18/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	EB=(10)
VII.	Matrix Spike/Matrix Spike Duplicates	SW	MSD=(11,12)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER=(1)
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B57-0-6-071816**	K1608207-003**	Soil	07/18/16
2	FTBL-SS-B58-0-6-071816**	K1608207-004**	Soil	07/18/16
3	FTBL-SS-B59-0-6-071816**	K1608207-005**	Soil	07/18/16
4	FTBL-SS-B60-0-6-071816**	K1608207-006**	Soil	07/18/16
5	FTBL-SS-B51-0-6-071816**	K1608207-010**	Soil	07/18/16
6	~~FTBL-SS-B52-0-6-071816~~	K1608207-011	Soil	07/18/16
7	FTBL-SS-B53-0-6-071816	K1608207-012	Soil	07/18/16
8	FTBL-SS-B54-0-6-071816	K1608207-013	Soil	07/18/16
9	FD071816	K1608207-014	Soil	07/18/16
10	~~EB071816~~	K1608207-015	Water	07/18/16
11	FTBL-SS-B57-0-6-071816MS	K1608207-003MS	Soil	07/18/16
12	FTBL-SS-B57-0-6-071816MSD	K1608207-003MSD	Soil	07/18/16
13				
14				
15				

LDC #: 37049A6

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: SD
2nd Reviewer: MC

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?	✓			
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.				
Target analytes were detected in the field duplicates.				
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 37048A4

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: JD
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-S	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
QC 11-12	S	Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Metals (EPA SW 864 Method 6010/6020/7000) Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: All

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Pb	0.026			0.13										
Zn	0.19			0.95										

Sample Concentration units, unless otherwise noted: mg/kg Associated Samples: 1

					Sample Identification									
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	No Qual.									
Sb			0.048	0.12										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: 3D
2nd Reviewer: JL

METHOD: Trace Metals (EPA Method 200.7/200.8)

Blank units: ug/L **Associated sample units:** mg/kg
Sampling date: 07/18/16
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All

Analyte	Blank ID	Sample Identification											
[redacted]	10	Action Limit	No Qual.										
Cu	0.15	0.000750											
Pb	0.038	0.000190											
Zn	0.3	0.001500											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: SO
2nd Reviewer: M

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	11/12	S	Sb	38 (72-124)	38 (72-124)		1	No Qual. (PS ok)
			Pb		83 (84-118)			No Qual. (SER ok)

Comments:

LDC #: 37049A1k

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: JD
2nd Reviewer: A

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV 17:17	ICP/MS (Initial calibration)	Cu	12.9 ug/L	12.5 ug/L	103%R	103%R	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV 19:20	ICP/MS (Continuing calibration)	Pb	24.99 ug/L	25 ug/L	100%R	100%R	Y
	CVAA (Contining calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: _____

LDC #: 37049A4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: JO
2nd Reviewer: JC

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICS AB 17:35	ICP interference check	Zn	21.67 ug/L	25 ug/L	87%R	87%R	Y
LCS 19:17	Laboratory control sample	Cu	484.15 ug/L	500 ug/L	97%R	97%R	
MS 19:11	Matrix spike	Pb	(SSR-SR) 79.24 mg/kg	87.20 mg/kg	91%R	91%R	
MSD 19:14	Duplicate	Zn	139.83 mg/kg	139.09 mg/kg	0.5%RPD	0.5%RPD	
SER 19:05	ICP serial dilution	Cu	44.66 ug/L	41.93 ug/L	7%D	7%D	

Comments: *SER results = before 5x D:1 / 25x D:1 applied.

LDC #: 57049A4

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: DO
2nd reviewer: SJ

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

M N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for (1) Sb were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)(%solids)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

%solids: 0.94
RD = 0.455335 ug/L
FV = 100ml
In. W = 1.25g
Dil = 5

Recalculation: $\frac{(0.455335\ ug/L)(100ml)(5)}{(1.25g)(0.94)} \times \frac{1mg}{1000ug} = 0.193\ mg/kg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Sb	0.193	0.193	Y
	2	Cu	24.0	24.0	
	3	Pb	49.9	49.9	
	4	Zn	39.6	39.6	
	5	Sb	0.822	0.822	Y

Note:

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September 27, 2016

Analytical Report for Service Request No: K1611061

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

RE: Closed Castner Firing Range / 06261038.0001.00400

Dear (b) (6) t,

Enclosed are the results of the sample(s) submitted to our laboratory July 22, 2016
For your reference, these analyses have been assigned our service request number **K1611061.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is (b) . You may also contact me via email at (b) (6) .

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

(b) (6)
Senior Project
Manager

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Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
TRRP
Chain of Custody
Total Solids
Metals
Raw Data
    Total Solids
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1611061
Project:	Closed Castner Firing Range/ 06261038.0001.00400	**Date Received:**	07/22/16
Sample Matrix:	Soil		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One soil sample was received for analysis at ALS Environmental on 07/22/16. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory. This sample was originally logged under Service Request K1608344.

Total Metals

Matrix Spike Recovery Exceptions:
Antimony recoveries are generally low for soil and sediment samples when digested using EPA Method 3050B. Despite anticipated low recoveries, the method is still generally prescribed because of its versatility for general metals analysis. Antimony results (in conjunction with the matrix spike recovery) from this procedure should only be used as indicators to estimate concentrations. The matrix spike recoveries of Antimony for sample FTBL-SS-B20-12-24-072016 were below the DoD QSM control criterion. Since low recoveries resulted from a method defect and were possibly magnified by certain matrix components, no corrective action was appropriate. Alternative procedures that specifically target Antimony are available but were not specified for this project. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control.

The matrix spike recovery of Zinc for sample name was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of this sample were observed.

Approved (b) (6) _____

TRRP

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Appendix A ALS Kelso-Laboratory Data Package Signature Page

This data package consists of:

☒ This signature page, the laboratory review checklist, and the following reportable data:

☒ R1 Field chain-of-custody documentation;

☒ R2 Sample identification cross-reference;

☒ R3 Test reports (analytical data sheets) for each environmental sample that includes:

a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

☒ R4 Surrogate recovery data including:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

☒ R5 Test reports/summary forms for blank samples;

☒ R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c) The laboratory's LCS QC limits.

☒ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits

☒ R8 Laboratory analytical duplicate (if applicable) recovery and precision:

a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

☒ R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;

☒ R10 Other problems or anomalies.

☒ The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable:] [This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release.

[redacted] (b) (6) _____ _____ (b) (6) _____ Senior Project Mgr _____ 09/27/16____

Name (Printed) Sig Official Title (printed) Date

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/27/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1611061				
Reviewer Name: (b) (6) [redacted]			Prep Batch Number(s): Various				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X1			
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 09/27/2016				
Project Name: Closed Castner Firing Range			Laboratory Job Number: K1611061				
Reviewer Name: [redacted]			Prep Batch Number(s): Various				
#[1]	**A[2]**	**Description**	**Yes**	**No**	**NA[3]**	**NR[4]**	**ER#[5]**
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 09/27/2016
Project Name: Closed Castner Firing Range	Laboratory Job Number: K1611061
Reviewer Name: (b) (6)	Prep Batch Number(s): Various

ER#[5]	Description
X1	See Total Metals Matrix Spike Recovery Exceptions narrative notes.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068
Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: ~~th1608344~~ th1611061

Project Manager:	(b) (6)	Bill to:	PO NUMBER: 06261038.0001.00400
Client Name:	Arcadis	Company:	Arcadis
Address:	401 East Main Street, Suite 400	Address:	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	City, State ZIP:	Highlands Ranch, Co 80129
Email:	(b) (6) [redacted] Phone: 915-433-1761	Email:	accountspayable administration@arcadis.com
Project Name:			
Project Number:			
Send copy to:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present		
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice
Cooler Custody Seals:	Yes	No	N/A	Total Containers:
Sample Custody Seals:	Yes	No	N/A	

REQUESTED ANALYSIS

TAT
- [x] Standard 15 day
- [ ] Same Day * 100%
- [ ] Next Day ***
- [ ] 3 Day
- [x] EDD

Surcharges. Please call for availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Explosives	x Lead TCLP	Comments
FTBL-BS-B19-0-12-072016	S	072016	0915		2	X		X	Hold
FTBL-SS-B21-0-6-072016	S	072016	0900		1	X			
FTBL-SS-B22-0-6-072016	S	072016	0915		1	X			
FTBL-SS-B23-0-6-072016	S	072016	0925		1	X			
FTBL-SS-B24-0-6-072016	S	072016	0935		1	X			
FTBL-SS-B13-0-12-072016	S	072016	1330		2	X		X	Hold
FTBL-SS-B14-0-12-072016	S	072016	1255		2	X		X	Hold
FTBL-SS-B15-0-6-072016	S	072016	1145		1	X			
FTBL-SS-B16-0-6-072016	S	072016	1155		1	X			
FTBL-SS-B17-0-6-072016	S	072016	1205		1	X			
FTBL-SS-B18-0-6-072016	S	072016	1215		1	X			

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr	**Additional Methods Available Upon Request**
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr	

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6) [redacted]		072016/1400	(b) (6) [redacted]		07/20/16 1400
		07/21/16 -1700			7/22/16 1000

* Note: Contact (b) (6) [redacted] befor running TCLP Pb samples.

Revised 6/10/2016

Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
(b) (6)
0 577 7222 FAX 1 360 636 1068
ALS Group A Campbell Brothers Limited Company

Work Order No.: KL1611061 ~~KL1608344~~

Project Manager:	(b) (6)	Bill to:	PO NUMBER: 06261038.0001.00400
Client Name:	Arcadis	Company:	Arcadis
Address:	401 East Main Street, Suite 400	Address:	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	City, State ZIP:	Highlands Ranch, Co 80129
Email:	(b) (6) Phone: 915-433-1761	Email:	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
Send copy to:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):				Temp Blank Present	
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

REQUESTED ANALYSIS

TAT
- Standard 15 day
- Same Day * 100%
- Next Day **
- 3 Day
- EDD

Surcharges. Please call for availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Metals (see list)	Explosives	TCLP lead	Comments
FD072016		072016	—		1	X			
FBL-SS-B18-0-6-072016-MS		072016	1215		1	X			
FBL-SS-B18-0-6-072016-MSD		072016	1215		1	X			
EB072016		072016	1350		1	X			
FBL-SS-B20-0-12-072016		072016	1100		2	X		X	Hold
FBL-SS-B20-~~24~~ 12-24-072016		072016	1120		2	X		X	

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6)		072016 1400	(b) (6)		07/22/16 1400
		07/20/16 - 1700			7/22/16 1000

Revised: 6/10/2016

010838

PC 6429

Cooler Receipt and Preservation Form

Client Arcadis Service Request K16 11061 08944

Received: 7/22/16 Opened: 7/22/16 By: [signature] Unloaded: 7/22/16 By: [signature]

1. Samples were received via? *Mail* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 front + back
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
-0.6	-0.8	0.2	0.0	-0.2	370		7768 0588 9254	

4. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Page____of____

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1611061
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/20/16
Sample Matrix:	Soil	**Date Received:**	07/22/16
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
FTBL-SS-B20-12-24-072016	K1611061-001	**98.0**	-	-	1	09/20/16 16:35	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1611061
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
		Date Analyzed:	09/20/16

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Batch QC	**Units:**	Percent
Lab Code:	K1611089-001	**Basis:**	As Received

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1611089-001DUP Result	Average	RPD	RPD Limit
Solids, Total	160.3 Modified	-	48.2	44.4	46.3	8	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1611061
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/20/16 11:20
Sample Matrix:	Soil	**Date Received:**	07/22/16 10:00
Sample Name:	FTBL-SS-B20-12-24-072016	**Basis:**	Dry
Lab Code:	K1611061-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	**0.089**	mg/Kg	0.051	0.026	0.010	5	09/22/16 11:03	09/20/16	
Copper	6020A	**5.24**	mg/Kg	0.10	0.10	0.04	5	09/22/16 11:03	09/20/16	
Lead	6020A	**9.60**	mg/Kg	0.051	0.051	0.020	5	09/22/16 11:03	09/20/16	
Zinc	6020A	**44.7**	mg/Kg	0.51	0.51	0.20	5	09/22/16 11:03	09/20/16	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1611061
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	KQ1611503-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	6020A	ND U	mg/Kg	0.050	0.025	0.010	5	09/22/16 10:46	09/20/16	
Copper	6020A	ND U	mg/Kg	0.10	0.10	0.04	5	09/22/16 10:46	09/20/16	
Lead	6020A	ND U	mg/Kg	0.050	0.050	0.020	5	09/22/16 10:46	09/20/16	
Zinc	6020A	ND U	mg/Kg	0.50	0.50	0.20	5	09/22/16 10:46	09/20/16	

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1611061
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	07/20/16
Sample Matrix:	Soil	**Date Received:**	07/22/16
		Date Analyzed:	09/22/16
		Date Extracted:	09/20/16

Duplicate Matrix Spike Summary
Total Metals

Sample Name:	FTBL-SS-B20-12-24-072016	**Units:**	mg/Kg
Lab Code:	K1611061-001	**Basis:**	Dry
Analysis Method:	6020A		
Prep Method:	EPA 3050B		

		Matrix Spike			Duplicate Matrix Spike					
		KQ1611503-03			KQ1611503-04					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Antimony	0.089	42.6	94.5	45 N	47.9	101	47 N	72-124	12	20
Copper	5.24	47.0	47.2	88	51.0	50.5	91	84-119	8	20
Lead	9.60	93.5	94.5	89	106	101	95	84-118	12	20
Zinc	44.7	120	94.5	80 N	131	101	85	82-119	9	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/28/16 1:52:08 PM Superset Reference:

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1611061
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Analyzed:**	09/22/16
Sample Matrix:	Soil	**Date Extracted:**	09/20/16

Lab Control Sample Summary
Total Metals

Analysis Method:	6020A	**Units:**	mg/Kg
Prep Method:	EPA 3050B	**Basis:**	Dry
		Analysis Lot:	515336

Lab Control Sample
KQ1611503-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Antimony	94.5	100	94	72-124
Copper	48.7	50.0	97	84-119
Lead	95.0	100	95	84-118
Zinc	98.0	100	98	82-119

Prep Summary Report

Client: ARCADIS U.S., Inc. **Service Request:**K1611061
Project: Closed Castner Firing Range/06261038.0001.00400
Sample Matrix: Soil

Metals

Prep Method: EPA 3050B **Extraction Lot:**271224
Analytical Method: 6020A

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
FTBL-SS-B20-12-24-072016	K1611061-001	7/20/16	7/22/16	1.00 g	100 mL	
FTBL-SS-B20-12-24-072016	K1611061-001PS	7/20/16	7/22/16	1.00 g	100 mL	
FTBL-SS-B20-12-24-072016	K1611061-001SDL	7/20/16	7/22/16	1.00 g	100 mL	
Method Blank	KQ1611503-01MB	NA	NA	1.00 g	100 mL	
Lab Control Sample	KQ1611503-02LCS	NA	NA	1.00 g	100 mL	
FTBL-SS-B20-12-24-072016	KQ1611503-03MS	7/20/16	7/22/16	1.08 g	100 mL	
FTBL-SS-B20-12-24-072016	KQ1611503-04DMS	7/20/16	7/22/16	1.01 g	100 mL	

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Antimony	6020A	515336	25.0	24.4	97	25.0	24.8	99	25.0	24.6	98
Copper	6020A	515336	12.5	12.9	103	25.0	24.7	99	25.0	24.4	98
Lead	6020A	515336	25.0	24.5	98	25.0	24.9	99	25.0	24.8	99
Zinc	6020A	515336	25.0	25.0	100	25.0	25.0	100	25.0	24.2	97

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION BLANK

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank	
			Result	C	Result	C	Result	C	Result	C
Antimony	6020A	515336	0.02	U	0.02	U	0.02	U		
Copper	6020A	515336	0.08	U	0.08	U	0.08	U		
Lead	6020A	515336	0.04	U	0.04	U	0.04	U		
Zinc	6020A	515336	0.4	U	0.4	U	0.4	U		

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICVS							
Antimony	6020A	515336	0.11	0.10	114	80-120	09/22/16 10:30
Copper	6020A	515336	0.21	0.20	105	80-120	09/22/16 10:30
Lead	6020A	515336	0.10	0.10	102	80-120	09/22/16 10:30
Zinc	6020A	515336	1.0	1.0	100	80-120	09/22/16 10:30
LLCCVS							
Antimony	6020A	515336	0.10	0.10	97	70-130	09/22/16 11:39
Copper	6020A	515336	0.24	0.20	120	70-130	09/22/16 11:39
Lead	6020A	515336	0.11	0.10	111	70-130	09/22/16 11:39
Zinc	6020A	515336	1.0	1.0	97	70-130	09/22/16 11:39
LLCCVS							
Antimony	6020A	515336	0.11	0.10	111	70-130	09/22/16 12:54
Copper	6020A	515336	0.24	0.20	122	70-130	09/22/16 12:54
Lead	6020A	515336	0.11	0.10	108	70-130	09/22/16 12:54
Zinc	6020A	515336	1.1	1.0	113	70-130	09/22/16 12:54

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA **Concentration Units:** ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Antimony	6020A	515336	0.35	-	-	-	09/22/16 10:38
Copper	6020A	515336	0.86	-	-	-	09/22/16 10:38
Lead	6020A	515336	0.36	-	-	-	09/22/16 10:38
Zinc	6020A	515336	1.1	-	-	-	09/22/16 10:38

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB **Concentration Units:** ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Antimony	6020A	515336	0.05	-	-	-	09/22/16 10:42
Copper	6020A	515336	45.8	50.0	92	80-120	09/22/16 10:42
Lead	6020A	515336	0.09	-	-	-	09/22/16 10:42
Zinc	6020A	515336	22.4	25.0	90	80-120	09/22/16 10:42

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K1611061-001A								
Antimony	6020A	515336	0.17	49.4338	20.0	246	80-120	09/22/16 11:11
Copper	6020A	515336	10.3	57.2184	20.0	235	80-120	09/22/16 11:11
Lead	6020A	515336	18.8	66.2233	20.0	237	80-120	09/22/16 11:11
Zinc	6020A	515336	87.6	131.9729	20.0	222 #	80-120	09/22/16 11:11

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Initial Sample Result	Serial Dillution Result	% Diff	% Diff. Limit	Analysis Date
K1611061-001SDL							
Antimony	6020A	515336	0.1745	0.1345	23	10	09/22/16 11:07
Copper	6020A	515336	10.2747	9.9025	4	10	09/22/16 11:07
Lead	6020A	515336	18.8142	18.9565	1	10	09/22/16 11:07
Zinc	6020A	515336	87.58	86.81	1	10	09/22/16 11:07

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

Detection Limits

Analyte	Mass	Units	LOQ	LOD	MDL	Method
Antimony	123	ug/L	0.1	0.05	0.02	6020A
Copper	65	ug/L	0.2	0.2	0.08	6020A
Lead	208	ug/L	0.1	0.1	0.04	6020A
Zinc	66	ug/L	1	1	0.4	6020A

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-05

Analyte	Concentration (ug/L)	Method
Antimony 123	3000	6020A
Copper 65	3000	6020A
Lead 208	3000	6020A
Zinc 66	3000	6020A

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

Analysis Run Log

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **515336**

Sample	Dilution Factor	Date/Time	Sb	Cu	Pb	Zn
Blank	1	09/22/16 10:02				
25ppb	1	09/22/16 10:06				
ICV	1	09/22/16 10:10	X	X	X	X
CCV	1	09/22/16 10:14	X	X	X	X
ICB	1	09/22/16 10:18	X	X	X	X
CCB	1	09/22/16 10:22	X	X	X	X
LLICVS	1	09/22/16 10:26				
LLICVS	1	09/22/16 10:30	X	X	X	X
LRSTD	1	09/22/16 10:34				
ICSA	1	09/22/16 10:38	X	X	X	X
ICSAB	1	09/22/16 10:42	X	X	X	X
KQ1611503-01MB	5	09/22/16 10:46	X	X	X	X
KQ1611503-02LCS	20	09/22/16 10:50	X	X	X	X
KQ1611503-02LCS	20	09/22/16 10:56	X	X	X	X
K1611061-001	5	09/22/16 11:03	X	X	X	X
K1611061-001SDL	25	09/22/16 11:07	X	X	X	X
K1611061-001PS	5	09/22/16 11:11	X	X	X	X
K1611061-001MS	5	09/22/16 11:15	X	X	X	X
K1611061-001DMS	5	09/22/16 11:19	X	X	X	X
ZZZZZZ	5	09/22/16 11:23				
ZZZZZZ	20	09/22/16 11:27				
CCV	1	09/22/16 11:31	X	X	X	X
CCB	1	09/22/16 11:35	X	X	X	X
LLCCVS	1	09/22/16 11:39	X	X	X	X
ZZZZZZ	5	09/22/16 11:43				
ZZZZZZ	5	09/22/16 11:47				
ZZZZZZ	25	09/22/16 11:51				
ZZZZZZ	5	09/22/16 11:55				
ZZZZZZ	5	09/22/16 11:58				
ZZZZZZ	5	09/22/16 12:02				
ZZZZZZ	20	09/22/16 12:06				
CCV	1	09/22/16 12:10				
CCB	1	09/22/16 12:14				
ZZZZZZ	5	09/22/16 12:18				
ZZZZZZ	5	09/22/16 12:22				
ZZZZZZ	5	09/22/16 12:26				
ZZZZZZ	25	09/22/16 12:30				

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

Analysis Run Log

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **515336**

Sample	Dilution Factor	Date/Time	Sb	Cu	Pb	Zn
ZZZZZZ	5	09/22/16 12:34				
ZZZZZZ	5	09/22/16 12:38				
ZZZZZZ	5	09/22/16 12:42				
CCV	1	09/22/16 12:46				
CCB	1	09/22/16 12:50				
LLCCVS	1	09/22/16 12:54	X	X	X	X
LLCCVS 2X	1	09/22/16 12:58				

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **515336**

Sample	Client ID	Date/Time	Li6NG	Ge72He	Ge72H2	In115He	Lu175He
Blank	BLANK	09/22/16 10:02	100	100	100	100	100
25ppb	STD	09/22/16 10:06	101	103	103	100	100
ICV	ICV	09/22/16 10:10	100	102	101	101	100
CCV	CCV	09/22/16 10:14	97	105	104	100	100
ICB	ICB	09/22/16 10:18	97	103	101	101	100
CCB	CCB	09/22/16 10:22	100	101	100	101	99
LLICVS	LLICVS	09/22/16 10:26	99	101	100	101	101
LLICVS	LLICVS	09/22/16 10:30	98	102	101	102	100
LRSTD	STD	09/22/16 10:34	101	105	105	101	100
ICSA	ICSA	09/22/16 10:38	96	104	103	95	96
ICSAB	ICSAB	09/22/16 10:42	97	103	103	95	98
KQ1611503-01MB	MB	09/22/16 10:46	102	104	101	102	102
KQ1611503-02LCS	LCS	09/22/16 10:50	108	108	103	107	106
KQ1611503-02LCS	LCS	09/22/16 10:56	108	108	103	107	105
K1611061-001	FTBL-SS-B20-12-24-072016	09/22/16 11:03	105	114	109	106	105
K1611061-001SDL	FTBL-SS-B20-12-24-072016	09/22/16 11:07	103	118	113	105	104
K1611061-001PS	FTBL-SS-B20-12-24-072016	09/22/16 11:11	103	116	111	106	105
K1611061-001MS	MS	09/22/16 11:15	105	115	111	104	106
K1611061-001DMS	DMS	09/22/16 11:19	100	115	110	105	103
ZZZZZZ	ZZZZZZ	09/22/16 11:23					
ZZZZZZ	ZZZZZZ	09/22/16 11:27					
CCV	CCV	09/22/16 11:31	100	115	110	106	103
CCB	CCB	09/22/16 11:35	102	113	108	106	103
LLCCVS	LLCCVS	09/22/16 11:39	99	111	109	105	102
ZZZZZZ	ZZZZZZ	09/22/16 11:43					
ZZZZZZ	ZZZZZZ	09/22/16 11:47					
ZZZZZZ	ZZZZZZ	09/22/16 11:51					
ZZZZZZ	ZZZZZZ	09/22/16 11:55					
ZZZZZZ	ZZZZZZ	09/22/16 11:58					
ZZZZZZ	ZZZZZZ	09/22/16 12:02					
ZZZZZZ	ZZZZZZ	09/22/16 12:06					
CCV	CCV	09/22/16 12:10	97	114	110	106	104
CCB	CCB	09/22/16 12:14	101	110	109	107	105
ZZZZZZ	ZZZZZZ	09/22/16 12:18					
ZZZZZZ	ZZZZZZ	09/22/16 12:22					
ZZZZZZ	ZZZZZZ	09/22/16 12:26					

Client: ARCADIS U.S., Inc. **Service Request:** K1611061

Project: Closed Castner Firing Range/06261038.0001.00400

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **515336**

Sample	Client ID	Date/Time	Li6NG	Ge72He	Ge72H2	In115He	Lu175He
ZZZZZZ	ZZZZZZ	09/22/16 12:30					
ZZZZZZ	ZZZZZZ	09/22/16 12:34					
ZZZZZZ	ZZZZZZ	09/22/16 12:38					
ZZZZZZ	ZZZZZZ	09/22/16 12:42					
CCV	CCV	09/22/16 12:46	96	108	107	106	103
CCB	CCB	09/22/16 12:50	96	105	105	106	104
LLCCVS	LLCCVS	09/22/16 12:54	98	107	106	105	103
LLCCVS 2X	LLCCVS	09/22/16 12:58	96	107	105	105	103

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Benchsheet

Service Request #:	**K1611061, K1611089, KQ1611613**	**Run #:**	**514973**
Test:	**TS**	**Balance ID:**	**K-Balance-16**
Method:	**160.3 Modified**		

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1611061-001	1.27	11.45	12.49	11.2	98.0	
	K1611089-001	1.30	10.37	6.30	5.00	48.2	
	K1611089-001DUP	1.29	10.88	6.12	4.83	44.4	8
	K1611089-002	1.30	11.40	9.69	8.39	73.6	
	K1611089-003	1.29	10.58	5.62	4.33	40.9	
	K1611089-004	1.28	11.96	4.53	3.25	27.2	

	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
Oven1	**K-OVEN-07**	**105**	**105**	**9/20/2016**	**16:35**	**9/21/2016**	**08:56**	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	**K-Balance-16**	**1.00,100.01**	**1.00,100.01**	**9/20/2016**	**16:20**	**9/20/2016**	**16:35**
Calibration2	**K-Balance-16**	**1.00,100.01**	**1.00,100.02**	**9/21/2016**	**09:12**	**9/21/2016**	**09:14**

Comments: CCL Reviewed 9-21-16 L.J.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 271224 **Prep Workflow:** MetDigSICP **Status:** Prepped **Prep Date:** 09/20/2016 07:30
Team: Metals **Prep Method:** EPA 3050B **Current Step:** Digestion **Due Date:** 09/14/2016
Analyst: (b) (6) **Rush/NPDES:** RUSH **Hold Date:** 01/16/2017

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1611503-01	Method Blank		1.00 g	As Received.	100 mL			10% HNO3, 10% HCl
KQ1611503-02	Lab Control Sample		1.00 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174614 175121 175169 175411	10% HNO3, 10% HCl
K1611061-001	FTBL-SS-B20-12-24-072016	.02	1.00 g	As Received.	100 mL			10% HNO3, 10% HCl
K1611061-001: KQ1611503-03	Matrix Spike	.02	1.08 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174614 175121 175169 175411	10% HNO3, 10% HCl
K1611061-001: KQ1611503-04	Duplicate Matrix Spike	.02	1.01 g	As Received.	100 mL	1 mL 1 mL 2 mL 1 mL	174614 175121 175169 175411	10% HNO3, 10% HCl

5 Total Samples consisting of 1 Client Sample, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET SS1	Spike	175169	2/19/2017	K-MET SS4	Spike	175411	7/13/2017
K-MET SS3	Spike	174614	3/18/2017	K-MET SS5	Spike	175121	4/8/2017

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	Teflon Chips	69101	Digestion	K-MET HCL	175307
Digestion	K-MET HNO3	87968			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-Balance-02	Date Checked	9/20/16		Digestion	K-BlockDigester-07	Observed Temperature	95.0	deg C
Digestion	K-BlockDigester-07	Corrected Temperature	95.0	deg C	Digestion	K-BlockDigester-07	Thermometer ID 6402142		NONE
Digestion	K-BlockDigester-07	Correction Factor	0.0	deg C	Digestion	K-BlockDigester-07	Thermometer Location	3	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	20-SEP-16 07:30	20-SEP-16 09:20	AURBAN		N	

Comments

First reflux on at 730 off at 745. Second reflux on at 750 off at 845. HCl reflux on at 905 off at 920. H2O2 used had lot #: 55314549 Centrifuge tubes used had lot #: 151329

Preparation Information Benchsheet

Prep Run: 271224 **Prep Workflow:** MetDigSICP **Status:** Draft **Prep Date:** 09/19/2016 12:47
Team: Metals **Prep Method:** EPA 3050B **Current Step:** Digestion **Due Date:** 08/23/2016
Analyst: (b) (6) **Rush/NPDES:** N/A **Hold Date:** 01/16/2017

Lab Code	Client ID	Bottle #	Target Amt	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1611503-01	Method Blank		1.00 g	1.03					
KQ1611503-02	Lab Control Sample		1.00 g	1.01			1 mL 1 mL 2 mL 1 mL	174614 175121 175169 175411	
K1611061-001	FTBL-SS-B20-12-24-072016	.02	1.00 g	1.00					
K1611061-001: KQ1611503-03	Matrix Spike	.02	1.00 g	1.08			1 mL 1 mL 2 mL 1 mL	174614 175121 175169 175411	
K1611061-001: KQ1611503-04	Duplicate Matrix Spike	.02	1.00 g	1.01			1 mL 1 mL 2 mL 1 mL	174614 175121 175169 175411	

5 Total Samples consisting of 1 Client Sample, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET SS1	Spike	175169	2/19/2017	K-MET SS4	Spike	175411	7/13/2017
K-MET SS3	Spike	174614	3/18/2017	K-MET SS5	Spike	175121	4/8/2017

1 730-745
2 750-845
H 905-920

Preparation Materials

Preparation Hardware / Equipment

BD7(3)

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion						

Comments

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
*** Add after HNO3	Mn	100*	1000ml	50	
and before ALS-89	Ni	100*	1000ml	50	
when making the	Sb***	50	1000ml	50	
solution	V	100*	1000ml	50	
	Zn	100*	1000ml	50	
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	.6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	25	500ml	50	
	Mo	50	500ml	100	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	

K-MET GFLCSW	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.
** Denotes 10,000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

Service Request #	K1611061		
Calibration	092216AMS05		
QC in calibration	092216AMS05		
QC Service Request #	K1611061		
STARLIMS run #	515336		
CAL STD	MS20-94-E	ICSA STD	MS20-94-G
ICV STD	MS20-87-L	ICSAB STD	MS20-94-H
LLICV STD	MS20-94-F	INT STD	MS20-88-A

6020A DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within 80-120% DoD limit?	X		
12. Spikes within 80-120% DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?	X		
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?			X
21. Cd Correction Applied?			X
22. Was run prematurely stopped, If so why?		X	

Comments: LRS= 1000 ppb.

Primary Review by _____ Date 9/22/16

Secondary Review by _____ Date 9/23/16

R:\icp\misc\data review forms\icpms review form

Data Review Form

Service Request #: **K1611061**
Instrument ID#: **K-ICP-MS-05**
DataFile Name: **R:\ICP\WIP\DATA\K-ICP-MS-05 (Agilent)\092216A.csv**
RUNNO: **515336**

K1611061-001MS - Metals T
MS Recovery
6020A/Metals T - 66 Zn [He] - Recovery: 80 Limits: 82 - 119
6020A/Metals T - 123 Sb [He] - Recovery: 45 Limits: 72 - 124

DDS is in control

K1611061-001DMS - Metals T
DMS Recovery
6020A/Metals T - 123 Sb [He] - Recovery: 47 Limits: 72 - 124

Analytical Method 6020A

Primary Approver: _____ 9/22/16
Secondary Approver: SC 9/23/16

Service Request Summary

Folder #:	**K1611061**
Client Name:	ARCADIS U.S., Inc.
Project Name:	Closed Castner Firing Range
Project Number:	06261038.0001.00400
P.O. Number:	06261038.0001.00400

Report To: Garett Ferguson
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

Phone Number: 915-747-3902
Cell Number: 915-433-1761
Fax Number:
E-mail: garett.ferguson@arcadis.com

Project Chemist: Gregory Salata, Ph.D.
Logged By: KSMITH
Date Received: 7/22/16
Time Received: 1000
Archive? N
Folder Due Date: 9/27/16
Internal Due Date: 9/27/16
QAP: DOD QSM v5.0 Kelso
Qualifier Set: DOD
Formset: DOD
Merged?: Y
Report to MDL?: Y
PC Approved?: Y
State of Sampling Location: TX
EDD: SEDD 2A, EQUIS EFWEDD

1 -4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: K-ATHENA-38
RUSH

27124
1163.01
-02 LCJ

515356

Lab Samp No.	Client Samp No.	Matrix	Collected	Metals: 160.3 Modified/ TS	Metals: 6020A/ Metals T
K1611061-001	FTBL-SS-B20-12-24-072016	Soil	7/20/16 1120	IV	IV

Folder Comments:

REVIEW QAPP SDG NOT COMPLETE!
Re-issued from K1608344

Test Comments:

Group	Test/Method	Samples	Comments
Metals	Metals T/6020A	1	Sb,Cu,Pb,Zn

Test/Method	Samples	Elements
6020A/Metals T	1	Antimony / Copper / Lead / Zinc

	Sample						
		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
1			001CALB.	9/22/2016 9:54:55 AM	CalBlk	Prime	
2			002CALB.	9/22/2016 9:58:54 AM	CalBlk	Blank	
3			003CALB.	9/22/2016 10:02:53 AM	CalBlk	Blank	
4			004CALS.	9/22/2016 10:06:54 AM	CalStd	25ppb	
5			005_ICV.d	9/22/2016 10:10:53 AM	ICV	ICV	
6			006_CCV.	9/22/2016 10:14:54 AM	CCV	CCV	
7			007_ICB.d	9/22/2016 10:18:54 AM	ICB	ICB	
8			008_CCB.	9/22/2016 10:22:54 AM	CCB	CCB	
9			009LICV.d	9/22/2016 10:26:52 AM	LLICV	LLICVS	
10			010LICV.d	9/22/2016 10:30:51 AM	LLICV	LLICVS	
11			011SMPL.	9/22/2016 10:34:51 AM	Sample	LRSTD	
12			012ICSA.d	9/22/2016 10:38:31 AM	ICSA	ICSA	
13			013ICSB.d	9/22/2016 10:42:33 AM	ICSB	ICSAB	
14			014_PB.d	9/22/2016 10:46:52 AM	PB	KQ1611503-01	5
15			015_LCS.d	9/22/2016 10:50:50 AM	LCS	KQ1611503-02	20
16			016_LCS.d	9/22/2016 10:56:24 AM	LCS	KQ1611503-02	20
17			017_ARF.d	9/22/2016 11:03:20 AM	AllRef	K1611061-001	5
18			018SMPL.	9/22/2016 11:07:18 AM	Sample	K1611061-001L	25
19			019_PDS.d	9/22/2016 11:11:16 AM	PDS	K1611061-001A	5
20			020_Spk.d	9/22/2016 11:15:14 AM	Spike	K1611061-001S	5
21			021_Spk.d	9/22/2016 11:19:13 AM	Spike	K1611061-001SD	5
22			022_PB.d	9/22/2016 11:23:11 AM	PB	KQ1610764-01	5
23			023SMPL.	9/22/2016 11:27:11 AM	Sample	KQ1610764-02	20
24			024_CCV.	9/22/2016 11:31:09 AM	CCV	CCV	
25			025_CCB.	9/22/2016 11:35:08 AM	CCB	CCB	
26			026LCCV.	9/22/2016 11:39:07 AM	LLCCV	LLCCVS	
27			027_ARF.d	9/22/2016 11:43:06 AM	AllRef	K1610048-001	2
28			028SMPL.	9/22/2016 11:47:04 AM	Sample	K1610048-001D	2
29			029SMPL.	9/22/2016 11:51:01 AM	Sample	K1610048-001L	25
30			030_PDS.d	9/22/2016 11:55:00 AM	PDS	K1610048-001A	5
31			031_Spk.d	9/22/2016 11:58:58 AM	Spike	K1610048-001S	5
32			032_PB.d	9/22/2016 12:02:54 PM	PB	KQ1611222-01	5
33			033SMPL.	9/22/2016 12:06:53 PM	Sample	KQ1611222-02	20
34			034_CCV.	9/22/2016 12:10:51 PM	CCV	CCV	
35			035_CCB.	9/22/2016 12:14:49 PM	CCB	CCB	

	Sample						
		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
36			036_ARF.d	9/22/2016 12:18:48 PM	Sample	K1610336-001	5
37			037SMPL.	9/22/2016 12:22:46 PM	AllRef	K1610336-002	5
38			038SMPL.	9/22/2016 12:26:44 PM	Sample	K1610336-002D	5
39			039SMPL.	9/22/2016 12:30:43 PM	Sample	K1610336-002L	25
40			040_PDS.d	9/22/2016 12:34:41 PM	PDS	K1610336-002A	5
41			041_Spk.d	9/22/2016 12:38:41 PM	Spike	K1610336-002S	5
42			042SMPL.	9/22/2016 12:42:38 PM	Sample	K1610336-003	5
43			043_CCV.	9/22/2016 12:46:36 PM	CCV	CCV	
44			044_CCB.	9/22/2016 12:50:36 PM	CCB	CCB	
45			045LCCV.	9/22/2016 12:54:35 PM	LLCCV	LLCCVS	
46			046_QC1.d	9/22/2016 12:58:33 PM	QC1	LLCCVS 2X	
47			047SMPL.	9/22/2016 1:02:32 PM	Sample	LLCCVS 1.0 ppb	

Analyte				
Name		Mass	ISTD	Tune Mode
1	Be	9	6	No Gas
2	Cr	52	72	He
3	Cr	53	72	He
4	Mn	55	72	He
5	Ni	60	72	He
6	Ni	62	72	He
7	Cu	63	72	He
8	Cu	65	72	He
9	Zn	66	72	He
10	As	75	72	He
11	Se	77	72	H2
12	Se	78	72	H2
13	Mo	95	115	He
14	Mo	97	115	He
15	Mo	98	115	He
16	Ag	107	115	He
17	Ag	109	115	He
18	Cd	111	115	He
19	Cd	114	115	He
20	Sb	121	115	He
21	Sb	123	115	He

Analyte				
Name		Mass	ISTD	Tune Mode
22	Ba	135	115	He
23	Ba	137	115	He
24	[Pb]	206	175	He
25	[Pb]	207	175	He
26	Pb	208	175	He
27	Li	6		No Gas
28	Ge	72		He
29	Ge	72		H2
30	In	115		He
31	Lu	175		He

US EPA Tune Check Sample Report

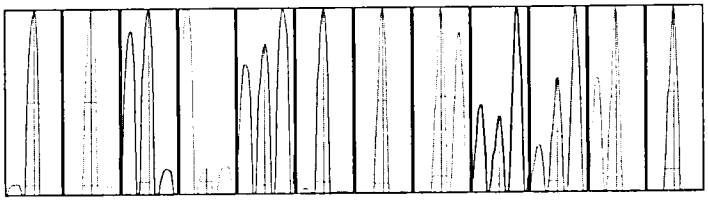
Batch Folder D:\Data\Experiments\092216A.b
Report Comment ALS Tune
Instrument Name G3281A JP13482848

[No Gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	55157	0.76	5.00	
9	22867	0.84	5.00	
24	105468	0.37	5.00	
25	14483	2.27	5.00	
26	16766	1.01	5.00	
59	173216	0.47	5.00	
115	259454	1.16	5.00	
206	72422	0.60	5.00	
207	64225	1.01	5.00	
208	153817	1.02	5.00	
209	240818	0.59	5.00	
238	327674	0.78	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	55477	55569	55218	55007	54515
9	22832	22963	23137	22771	22632
24	105351	105940	105822	105152	105077
25	14253	14368	15063	14397	14332
26	16718	16994	16834	16755	16530
59	173181	172853	174305	173624	172118
115	259433	263542	261174	256432	256687
206	72708	72867	72608	71889	72039
207	65053	64604	64227	63854	63386
208	156515	153505	153465	153125	152473
209	242757	241827	240366	239406	239734
238	329885	330709	326627	326667	324482

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	9329	7.05	6.9 - 7.1		0.782	0.900	
9	3971	9.00	8.9 - 9.1		0.807	0.900	
24	17772	24.00	23.9 - 24.1		0.785	0.900	
25	2415	24.95	24.9 - 25.1		0.786	0.900	
26	2772	25.95	25.9 - 26.1		0.785	0.900	
59	30605	58.95	58.9 - 59.1		0.781	0.900	
115	51706	115.00	114.9 - 115.1		0.771	0.900	
206	14348	206.00	205.9 - 206.1		0.780	0.900	
207	12455	206.95	206.9 - 207.1		0.778	0.900	
208	30488	207.95	207.9 - 208.1		0.779	0.900	
209	48553	209.00	208.9 - 209.1		0.784	0.900	
238	63635	237.95	237.9 - 238.1		0.800	0.900	

X% = 5 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 279 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1600	W	Carrier Gas	0.57	L/min			
RF Matching	1.76	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	8.0	V			
Extract 2	-125.0	V	Cell Entrance	-30	V			
Omega Bias	-65	V	Cell Exit	-50	V			
Deflect	12.6	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	200	V			
Energy Discrimination	5.0	V						

Calibration Blank Report

Sample Table

Sample Name	Blank
Data File Name	003CALB.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:02:53-07:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Be	9	No Gas	19	289.21
Cr	52	He	636	2.02
Cr	53	He	100	23.33
Mn	55	He	34	126.70
Ni	60	He	52	77.63
Ni	62	He	23	382.35
Cu	63	He	232	4.80
Cu	65	He	119	4.91
Zn	66	He	109	13.29
As	75	He	10	300.00
Se	77	H2	530	1.41
Se	78	H2	12	42.42
Mo	95	He	6	1649.19
Mo	97	He	0	#VALUE!
Mo	98	He	10	333.00
Cd	111	He	2	2680.41
Cd	114	He	7	367.91
Sb	121	He	42	50.78
Sb	123	He	34	79.95
[Pb]	206	He	81	17.79
[Pb]	207	He	42	137.85
Pb	208	He	243	7.32

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	No Gas	922844	1.77
Ge	72	He	77871	0.19
Ge	72	H2	972780	0.76
In	115	He	817578	0.83
Lu	175	He	2667432	1.38

Calibration Standard Report

Sample Table

Sample Name	25ppb
Data File Name	004CALS.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:06:54-07:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Be	9	No Gas	98662	0.00
Cr	52	He	63705	0.00
Cr	53	He	7811	0.03
Mn	55	He	26073	0.00
Ni	60	He	32825	0.00
Ni	62	He	5326	0.05
Cu	63	He	99926	0.00
Cu	65	He	49283	0.00
Zn	66	He	12796	0.02
As	75	He	6979	0.05
Se	77	H2	4934	0.06
Se	78	H2	13778	0.00
Mo	95	He	48110	0.00
Mo	97	He	31854	0.00
Mo	98	He	84289	0.00
Cd	111	He	21620	0.01
Cd	114	He	54493	0.00
Sb	121	He	48536	0.00
Sb	123	He	39658	0.00
[Pb]	206	He	158497	0.00
[Pb]	207	He	142380	0.00
Pb	208	He	646413	0.00

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	931055	1.14	922844	100.89	30	120	
Ge	72	He	80467	0.61	77871	103.33	30	120	
Ge	72	H2	997853	1.03	972780	102.58	30	120	
In	115	He	813844	0.75	817578	99.54	30	120	
Lu	175	He	2667024	1.45	2667432	99.98	30	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	005_ICV.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:10:53-07:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	2.519	0.996	9905	1.13	2.5	101	
Cr	52	He	10.031	1.956	25592	1.56	10	100	
Cr	53	He	9.902	0.657	3113	1.72	10	99	
Mn	55	He	25.091	1.480	25800	0.49	25	100	
Ni	60	He	25.627	0.765	33178	0.56	25	103	
Ni	62	He	25.728	1.924	5405	2.42	25	103	
Cu	63	He	12.595	0.479	49756	0.71	12.5	101	
Cu	65	He	12.878	1.754	25095	2.75	12.5	103	
Zn	66	He	24.957	1.057	12595	1.14	25	100	
As	75	He	24.946	2.674	6866	1.79	25	100	
Se	77	H2	25.154	1.428	4886	0.60	25	101	
Se	78	H2	25.281	2.235	13723	1.34	25	101	
Mo	95	He	24.944	0.795	48639	1.64	25	100	
Mo	97	He	24.642	1.391	31815	2.49	25	99	
Mo	98	He	24.986	1.979	85347	0.88	25	100	
Cd	111	He	12.249	1.801	10733	0.80	12.5	98	
Cd	114	He	12.123	0.399	26777	0.84	12.5	97	
Sb	121	He	24.466	1.697	48128	2.35	25	98	
Sb	123	He	24.355	0.493	39148	0.77	25	97	
[Pb]	206	He	24.233	1.338	154084	0.08	25	97	
[Pb]	207	He	25.103	1.907	143386	0.77	25	100	
Pb	208	He	24.536	1.505	636270	0.15	25	98	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	926001	1.19	922844	100.34	30	120	
Ge	72	He	79346	1.09	77871	101.89	30	120	
Ge	72	H2	982950	0.97	972780	101.05	30	120	
In	115	He	824599	1.15	817578	100.86	30	120	
Lu	175	He	2674741	1.40	2667432	100.27	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	006_CCV.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:14:54-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	25.739	3.597	97162	0.28	25	103	
Cr	52	He	24.295	0.593	62910	0.55	25	97	
Cr	53	He	24.537	3.926	7788	3.10	25	98	
Mn	55	He	24.286	2.005	25728	1.42	25	97	
Ni	60	He	25.034	1.547	33389	0.75	25	100	
Ni	62	He	24.838	3.315	5376	3.14	25	99	
Cu	63	He	24.520	2.109	99549	1.40	25	98	
Cu	65	He	24.733	2.378	49527	1.96	25	99	
Zn	66	He	24.984	5.018	12986	4.22	25	100	
As	75	He	24.905	2.488	7062	2.60	25	100	
Se	77	H2	24.408	2.895	4874	1.96	25	98	
Se	78	H2	24.349	0.800	13545	1.13	25	97	
Mo	95	He	24.576	1.265	47527	2.18	25	98	
Mo	97	He	24.677	1.657	31590	0.90	25	99	
Mo	98	He	24.533	1.157	83111	0.46	25	98	
Cd	111	He	24.676	2.412	21438	1.17	25	99	
Cd	114	He	24.799	1.318	54309	0.16	25	99	
Sb	121	He	24.592	1.085	47971	0.53	25	98	
Sb	123	He	24.785	0.892	39509	0.99	25	99	
[Pb]	206	He	24.914	0.526	157220	0.56	25	100	
[Pb]	207	He	24.752	0.389	140322	0.61	25	99	
Pb	208	He	24.856	0.565	639705	0.68	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	891190	3.28	922844	96.57	30	120	
Ge	72	He	81742	0.81	77871	104.97	30	120	
Ge	72	H2	1007184	0.74	972780	103.54	30	120	
In	115	He	817786	1.31	817578	100.03	30	120	
Lu	175	He	2654229	0.34	2667432	99.51	30	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	007_ICB.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:18:54-07:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.007	23.3	46	13.0	0.04	
Cr	52	He	-0.001	-3721.6	650	11.5	0.4	
Cr	53	He	0.002	6320.4	103	38.0	0.4	
Mn	55	He	-0.006	-78.7	29	17.6	0.1	
Ni	60	He	0.000	-7697.9	53	22.5	0.2	
Ni	62	He	-0.008	-576.9	22	43.3	0.2	
Cu	63	He	0.000	6673.0	239	17.9	0.2	
Cu	65	He	0.001	646.4	123	7.1	0.2	
Zn	66	He	-0.021	-249.6	101	25.6	1	
As	75	He	-0.003	-455.0	9	43.3	0.25	
Se	77	H2	-0.040	-237.1	530	3.6	20	
Se	78	H2	0.010	12.4	17	3.3	0.5	
Mo	95	He	0.007	46.1	20	33.4	0.1	
Mo	97	He	0.016	18.0	21	18.2	0.1	
Mo	98	He	0.006	50.0	30	33.3	0.1	
Cd	111	He	0.009	31.4	10	24.8	0.04	
Cd	114	He	0.010	20.7	29	15.6	0.04	
Sb	121	He	0.003	59.4	49	8.6	0.2	
Sb	123	He	0.001	743.4	35	17.2	0.05	
[Pb]	206	He	0.000	814.7	83	24.0	0.1	
[Pb]	207	He	0.008	71.1	90	38.7	0.1	
Pb	208	He	0.006	31.2	394	12.9	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	898357	1.36	922844	97.35	30	120	
Ge	72	He	79858	0.78	77871	102.55	30	120	
Ge	72	H2	985310	0.61	972780	101.29	30	120	
In	115	He	824148	0.26	817578	100.80	30	120	
Lu	175	He	2660611	1.59	2667432	99.74	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	008_CCB.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:22:54-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.000	523.5	20	15.5	0.04	
Cr	52	He	0.004	491.9	653	6.9	0.4	
Cr	53	He	-0.059	-81.5	83	18.3	0.4	
Mn	55	He	-0.001	-829.4	33	36.1	0.1	
Ni	60	He	0.005	143.5	59	14.2	0.2	
Ni	62	He	-0.034	-92.3	17	40.0	0.2	
Cu	63	He	-0.002	-174.7	228	6.9	0.2	
Cu	65	He	-0.004	-367.3	113	22.2	0.2	
Zn	66	He	-0.025	-240.5	98	31.7	1	
As	75	He	0.000	-115.1	10	0.0	0.25	
Se	77	H2	-0.130	-39.9	509	1.7	20	
Se	78	H2	0.001	492.9	12	24.8	0.5	
Mo	95	He	-0.001	-0.7	3	0.0	0.1	
Mo	97	He	0.004	124.6	6	124.9	0.1	
Mo	98	He	0.001	160.8	14	48.0	0.1	
Cd	111	He	0.002	84.7	4	34.3	0.04	
Cd	114	He	0.002	82.7	13	36.0	0.04	
Sb	121	He	-0.005	-66.5	33	19.3	0.2	
Sb	123	He	0.001	675.4	36	33.4	0.05	
[Pb]	206	He	-0.005	-73.5	50	43.7	0.1	
[Pb]	207	He	0.003	120.5	60	36.4	0.1	
Pb	208	He	0.000	-826.3	239	10.7	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	919558	1.72	922844	99.64	30	120	
Ge	72	He	78855	1.42	77871	101.26	30	120	
Ge	72	H2	976529	0.12	972780	100.39	30	120	
In	115	He	827400	0.46	817578	101.20	30	120	
Lu	175	He	2649678	1.13	2667432	99.33	30	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICVS
Data File Name	009LICV.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:26:52-07:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

Sample Reprep By 9/22/16

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.041	13.604	177	10.91	0.04	102	
Cr	52	He	0.380	7.061	1585	4.31	0.4	95	
Cr	53	He	0.477	12.669	246	7.72	0.4	119	
Mn	55	He	0.125	25.327	162	19.96	0.1	125	LLICV Failed
Ni	60	He	0.452	8.047	634	7.45	0.4	113	
Ni	62	He	0.469	36.275	121	28.91	0.4	117	
Cu	63	He	0.223	5.015	1106	4.09	0.2	111	
Cu	65	He	0.219	4.811	543	3.83	0.2	110	
Zn	66	He	1.102	17.413	659	14.68	1	110	
As	75	He	1.146	5.649	323	5.72	1	115	
Se	77	H2	1.814	9.545	842	4.09	2	91	
Se	78	H2	2.044	6.512	1110	5.73	2	102	
Mo	95	He	0.093	11.163	187	10.86	0.1	93	
Mo	97	He	0.101	19.451	131	19.42	0.1	101	
Mo	98	He	0.105	12.013	368	11.69	0.1	105	
Cd	111	He	0.040	9.917	38	9.24	0.04	101	
Cd	114	He	0.045	8.127	106	7.52	0.04	112	
Sb	121	He	0.094	10.204	228	8.32	0.1	94	
Sb	123	He	0.116	16.799	220	14.15	0.1	116	
[Pb]	206	He	0.092	21.849	672	19.69	0.1	92	
[Pb]	207	He	0.105	3.364	643	3.63	0.1	105	
Pb	208	He	0.101	6.468	2881	6.43	0.1	101	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	913523	1.49	922844	98.99	30	120	
Ge	72	He	78918	0.29	77871	101.34	30	120	
Ge	72	H2	974370	0.79	972780	100.16	30	120	
In	115	He	825394	0.10	817578	100.96	30	120	
Lu	175	He	2690102	0.52	2667432	100.85	30	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICVS
Data File Name	010LICV.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:30:51-07:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.042	21.783	180	17.55	0.04	106	
Cr	52	He	0.390	2.924	1619	1.95	0.4	98	
Cr	53	He	0.424	24.368	231	14.52	0.4	106	
Mn	55	He	0.086	12.531	123	9.75	0.1	86	
Ni	60	He	0.468	12.787	658	11.04	0.4	117	
Ni	62	He	0.386	32.597	104	24.79	0.4	96	
Cu	63	He	0.217	3.593	1091	2.03	0.2	109	
Cu	65	He	0.211	10.337	530	8.25	0.2	105	
Zn	66	He	1.004	18.577	613	14.77	1	100	
As	75	He	1.053	7.582	300	7.51	1	105	
Se	77	H2	1.950	11.373	874	4.11	2	97	
Se	78	H2	2.073	1.658	1138	1.60	2	104	
Mo	95	He	0.108	28.678	218	26.96	0.1	108	
Mo	97	He	0.087	33.979	113	33.92	0.1	87	
Mo	98	He	0.094	4.522	337	3.96	0.1	94	
Cd	111	He	0.046	12.632	43	11.38	0.04	114	
Cd	114	He	0.044	7.570	105	7.17	0.04	109	
Sb	121	He	0.099	16.869	238	12.95	0.1	99	
Sb	123	He	0.114	9.940	220	9.49	0.1	114	
[Pb]	206	He	0.104	2.550	739	3.84	0.1	104	
[Pb]	207	He	0.097	4.463	593	2.58	0.1	97	
Pb	208	He	0.102	2.312	2872	1.25	0.1	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	904947	2.84	922844	98.06	30	120	
Ge	72	He	79411	0.90	77871	101.98	30	120	
Ge	72	H2	984684	0.29	972780	101.22	30	120	
In	115	He	834392	1.24	817578	102.06	30	120	
Lu	175	He	2667421	1.65	2667432	100.00	30	120	

Sample Report

Sample Table

Sample Name	LRSTD
Data File Name	011SMPL.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:34:51-07:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	925.221	2.28	3636494	0.03	
Cr	52	He	966.075	1.64	2473725	0.04	
Cr	53	He	943.029	1.49	295237	0.32	
Mn	55	He	946.504	1.74	1000592	0.09	
Ni	60	He	964.559	1.12	1283603	0.08	
Ni	62	He	956.477	0.94	205982	0.46	
Cu	63	He	939.220	1.13	3801751	0.02	
Cu	65	He	969.622	1.02	1935826	0.05	
Zn	66	He	932.860	0.84	480528	0.19	
As	75	He	953.741	0.70	269881	0.35	
Se	77	H2	950.204	0.54	170654	0.56	
Se	78	H2	954.849	0.56	536011	0.18	
Mo	95	He	971.363	1.56	1902333	0.05	
Mo	97	He	942.504	1.24	1222283	0.08	
Mo	98	He	945.824	1.10	3245636	0.03	
Cd	111	He	938.527	1.74	825944	0.11	
Cd	114	He	967.453	2.40	2145790	0.05	
Sb	121	He	992.181	2.47	1958684	0.05	
Sb	123	He	973.319	0.36	1570477	0.06	
[Pb]	206	He	946.283	1.63	6022317	0.02	
[Pb]	207	He	951.283	2.79	5439698	0.02	
Pb	208	He	939.828	1.79	24396459	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	927647	2.11	922844	100.52	30	120	
Ge	72	He	81691	1.72	77871	104.91	30	120	
Ge	72	H2	1017246	0.30	972780	104.57	30	120	
In	115	He	828430	1.53	817578	101.33	30	120	
Lu	175	He	2678619	1.69	2667432	100.42	30	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	012ICSA.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:38:31-07:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	QC Flag
Be	9	No Gas	0.413	7.9	1572	7.2	
Cr	52	He	0.780	8.4	2630	7.2	
Cr	53	He	0.685	26.9	316	19.0	
Mn	55	He	1.045	8.6	1127	9.0	
Ni	60	He	0.761	1.9	1054	2.7	
Ni	62	He	0.795	26.0	193	23.3	
Cu	63	He	0.834	3.8	3575	4.1	
Cu	65	He	0.858	5.9	1815	5.5	
Zn	66	He	1.056	5.1	650	4.6	
As	75	He	0.284	14.7	90	13.9	
Se	77	H2	0.841	5.8	692	1.4	
Se	78	H2	0.232	10.8	140	9.3	
Mo	95	He	51.885	0.3	94862	0.7	
Mo	97	He	51.691	0.6	62576	1.2	
Mo	98	He	52.403	0.4	167866	1.1	
Cd	111	He	0.361	12.8	299	13.3	
Cd	114	He	0.377	13.9	789	14.4	
Sb	121	He	0.319	17.1	627	16.7	
Sb	123	He	0.346	14.7	553	14.4	
[Pb]	206	He	0.363	13.5	2285	14.1	
[Pb]	207	He	0.356	12.2	1982	13.0	
Pb	208	He	0.360	12.1	9160	12.8	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	888224	0.96	922844	96.25	30	120	
Ge	72	He	80659	0.84	77871	103.58	30	120	
Ge	72	H2	999185	0.98	972780	102.71	30	120	
In	115	He	773244	0.69	817578	94.58	30	120	
Lu	175	He	2554904	1.08	2667432	95.78	30	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	013ICSB.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:42:33-07:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.026	8.025	116	11.60	-1	-2.6	
Cr	52	He	46.541	1.409	117995	0.44	50	93.1	
Cr	53	He	47.287	2.439	14677	1.56	50	94.6	
Mn	55	He	46.928	2.390	48907	3.38	50	93.9	
Ni	60	He	46.048	1.630	60397	0.66	50	92.1	
Ni	62	He	46.190	2.152	9818	1.39	50	92.4	
Cu	63	He	45.107	1.713	180030	0.56	50	90.2	
Cu	65	He	45.799	0.297	90163	1.41	50	91.6	
Zn	66	He	22.417	1.618	11481	0.69	25	89.7	
As	75	He	24.157	2.663	6744	3.80	25	96.6	
Se	77	H2	24.229	0.720	4812	1.23	25	96.9	
Se	78	H2	23.701	0.115	13100	0.48	25	94.8	
Mo	95	He	52.650	0.978	96509	0.59	50	105.3	
Mo	97	He	52.486	1.126	63704	1.41	50	105.0	
Mo	98	He	52.791	0.596	169547	0.94	50	105.6	
Cd	111	He	24.279	2.032	20000	1.84	25	97.1	
Cd	114	He	24.356	1.329	50569	0.77	25	97.4	
Sb	121	He	0.049	38.686	129	27.20	-1	-4.9	
Sb	123	He	0.053	19.119	112	14.24	-1	-5.3	
[Pb]	206	He	0.090	9.688	638	6.49	-1	-9.0	
[Pb]	207	He	0.099	11.973	590	9.40	-1	-9.9	
Pb	208	He	0.094	4.800	2622	3.67	-1	-9.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	893607	4.76	922844	96.83	30	120	
Ge	72	He	80449	1.23	77871	103.31	30	120	
Ge	72	H2	1000740	0.59	972780	102.87	30	120	
In	115	He	775298	1.38	817578	94.83	30	120	
Lu	175	He	2611300	2.25	2667432	97.90	30	120	

Prep Blank (PB) Report

Sample Table

Sample Name	KQ1611503-01
Data File Name	014_PB.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:46:52-07:00
Sample Type	PB
Dilution	1
Comment	5
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.009	18.8	56	12.6	0.04	
Cr	52	He	0.017	271.6	702	16.2	0.4	
Cr	53	He	-0.059	-115.9	86	23.8	0.4	
Mn	55	He	0.023	94.5	60	38.5	0.1	
Ni	60	He	0.030	43.0	93	18.9	0.2	
Ni	62	He	0.131	43.4	52	24.2	0.2	
Cu	63	He	0.024	45.5	338	13.8	0.2	
Cu	65	He	0.035	53.3	193	19.4	0.2	
Zn	66	He	0.280	11.2	256	6.0	1	
As	75	He	-0.003	-72.4	10	6.0	0.25	
Se	77	H2	-0.049	-68.8	526	0.9	2	
Se	78	H2	0.003	315.3	13	37.0	0.5	
Mo	95	He	0.021	22.5	48	20.1	0.1	
Mo	97	He	0.027	35.9	36	35.5	0.1	
Mo	98	He	0.025	10.3	98	8.6	0.1	
Cd	111	He	0.017	17.3	17	15.9	0.04	
Cd	114	He	0.078	6.0	183	5.5	0.04	Flag
Sb	121	He	0.003	148.9	48	15.7	0.1	
Sb	123	He	0.003	171.2	39	20.0	0.05	
[Pb]	206	He	0.007	33.2	130	11.8	0.1	
[Pb]	207	He	0.011	8.5	106	6.6	0.1	
Pb	208	He	0.010	10.9	516	4.3	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	940804	0.99	922844	101.95	30	120	
Ge	72	He	80876	0.87	77871	103.86	30	120	
Ge	72	H2	981413	0.50	972780	100.89	30	120	
In	115	He	837591	0.77	817578	102.45	30	120	
Lu	175	He	2714727	1.51	2667432	101.77	30	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	KQ1611503-02
Data File Name	015_LCS.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:50:50-07:00
Sample Type	LCS
Dilution	1
Comment	20
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

Sample not added
9/22/16

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.003	31.200	34	10.60	5	0.1	LCS Main CR1 Failed
Cr	52	He	-0.188	-7.647	190	18.57	20	-0.9	LCS Main CR1 Failed
Cr	53	He	-0.211	-31.841	40	54.64	20	-1.1	LCS Main CR1 Failed
Mn	55	He	-0.010	-150.778	27	57.28	50	0.0	LCS Main CR1 Failed
Ni	60	He	-0.014	-35.406	38	18.36	50	0.0	LCS Main CR1 Failed
Ni	62	He	0.012	149.686	28	13.86	50	0.0	LCS Main CR1 Failed
Cu	63	He	-0.001	-1528.446	247	18.18	25	0.0	LCS Main CR1 Failed
Cu	65	He	-0.020	-22.597	87	10.17	25	-0.1	LCS Main CR1 Failed
Zn	66	He	-0.007	-334.626	113	11.77	50	0.0	LCS Main CR1 Failed
As	75	He	-0.013	-82.293	7	42.86	50	0.0	LCS Main CR1 Failed
Se	77	H2	-0.066	-105.191	535	1.68	50	-0.1	LCS Main CR1 Failed
Se	78	H2	0.002	494.153	13	48.22	50	0.0	LCS Main CR1 Failed
Mo	95	He	0.013	64.911	32	52.06	50	0.0	LCS Main CR1 Failed
Mo	97	He	0.014	10.603	19	10.18	50	0.0	LCS Main CR1 Failed
Mo	98	He	0.009	15.108	42	12.06	50	0.0	LCS Main CR1 Failed
Cd	111	He	0.007	40.815	9	30.04	5	0.1	LCS Main CR1 Failed
Cd	114	He	0.005	31.846	20	19.53	5	0.1	LCS Main CR1 Failed
Sb	121	He	-0.007	-58.834	31	28.00	50	0.0	LCS Main CR1 Failed
Sb	123	He	-0.005	-102.206	28	30.80	50	0.0	LCS Main CR1 Failed
[Pb]	206	He	0.005	175.775	117	45.98	50	0.0	LCS Main CR1 Failed
[Pb]	207	He	0.010	60.388	104	35.15	50	0.0	LCS Main CR1 Failed
Pb	208	He	0.007	12.665	443	4.93	50	0.0	LCS Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1000058	3.03	922844	108.37	30	120	
Ge	72	He	83853	1.25	77871	107.68	30	120	
Ge	72	H2	1003520	0.63	972780	103.16	30	120	
In	115	He	876780	0.89	817578	107.24	30	120	
Lu	175	He	2827153	0.91	2667432	105.99	30	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	KQ1611503-02
Data File Name	016_LCS.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T10:56:24-07:00
Sample Type	LCS
Dilution	1
Comment	20
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	4.728	1.639	19897	0.98	5	94.6	
Cr	52	He	18.908	0.449	50453	1.03	20	94.5	
Cr	53	He	18.657	2.239	6112	3.29	20	93.3	
Mn	55	He	47.681	0.842	51867	1.95	50	95.4	
Ni	60	He	49.386	0.624	67621	0.82	50	98.8	
Ni	62	He	48.783	1.964	10826	2.66	50	97.6	
Cu	63	He	23.969	0.392	99995	1.20	25	95.9	
Cu	65	He	24.357	2.066	50122	3.01	25	97.4	
Zn	66	He	48.998	1.012	26060	1.66	50	98.0	
As	75	He	48.643	0.523	14162	0.95	50	97.3	
Se	77	H2	51.326	2.302	9558	2.15	50	102.7	
Se	78	H2	50.110	0.680	27611	0.90	50	100.2	
Mo	95	He	46.250	1.353	95325	0.42	50	92.5	
Mo	97	He	46.663	1.491	63678	0.36	50	93.3	
Mo	98	He	46.688	0.545	168608	0.99	50	93.4	
Cd	111	He	4.816	0.185	4463	1.21	5	96.3	
Cd	114	He	4.773	0.375	11150	0.86	5	95.5	
Sb	121	He	47.806	0.941	99367	0.84	50	95.6	
Sb	123	He	47.243	1.685	80241	0.95	50	94.5	
[Pb]	206	He	46.560	0.253	309112	0.52	50	93.1	
[Pb]	207	He	48.638	0.519	290125	1.27	50	97.3	
Pb	208	He	47.502	0.603	1286275	1.10	50	95.0	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	992101	2.41	922844	107.50	30	120	
Ge	72	He	83981	1.18	77871	107.85	30	120	
Ge	72	H2	998067	0.35	972780	102.60	30	120	
In	115	He	871769	1.23	817578	106.63	30	120	
Lu	175	He	2793132	0.76	2667432	104.71	30	120	

All Reference Sample Report

Sample Table

Sample Name	K1611061-001
Data File Name	017_ARF.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:03:20-07:00
Sample Type	AllRef
Dilution	1
Comment	5
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	6.506	1.36	26697	0.02	
Cr	52	He	30.932	0.54	86537	0.04	
Cr	53	He	30.892	1.05	10591	0.29	
Mn	55	He	452.677	0.64	518649	0.09	
Ni	60	He	21.304	0.28	30780	0.07	
Ni	62	He	21.698	3.49	5090	0.43	
Cu	63	He	10.212	0.53	45054	0.02	
Cu	65	He	10.275	1.54	22360	0.05	
Zn	66	He	87.580	0.58	48996	0.18	
As	75	He	7.507	3.42	2313	0.32	
Se	77	H2	4.277	1.55	1373	0.31	
Se	78	H2	0.711	8.30	428	0.17	
Mo	95	He	1.735	2.74	3544	0.05	
Mo	97	He	1.682	1.22	2271	0.07	
Mo	98	He	1.703	1.26	6096	0.03	
Cd	111	He	0.202	9.71	188	0.11	
Cd	114	He	0.307	1.19	716	0.04	
Sb	121	He	0.159	2.14	370	0.04	
Sb	123	He	0.174	15.18	329	0.05	
[Pb]	206	He	20.063	1.38	133640	0.02	
[Pb]	207	He	17.007	1.69	101763	0.02	
Pb	208	He	18.814	2.02	511058	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	967459	0.72	922844	104.83	30	120	
Ge	72	He	88516	0.16	77871	113.67	30	120	
Ge	72	H2	1058323	1.10	972780	108.79	30	120	
In	115	He	862564	0.08	817578	105.50	30	120	
Lu	175	He	2801581	1.32	2667432	105.03	30	120	

Sample Report

Sample Table

Sample Name	K1611061-001L
Data File Name	018SMPL.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:07:18-07:00
Sample Type	Sample
Dilution	1
Comment	25
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	1.326	1.33	5385	0.02	
Cr	52	He	5.914	3.15	17701	0.03	
Cr	53	He	5.716	3.42	2121	0.27	
Mn	55	He	86.825	1.60	102843	0.08	
Ni	60	He	4.157	2.53	6257	0.07	
Ni	62	He	4.165	7.37	1031	0.40	
Cu	63	He	1.957	2.60	9144	0.02	
Cu	65	He	1.981	3.59	4567	0.04	
Zn	66	He	17.362	4.27	10139	0.17	
As	75	He	1.490	3.72	484	0.31	
Se	77	H2	0.692	32.48	735	0.09	
Se	78	H2	0.126	23.84	90	0.14	
Mo	95	He	0.441	4.95	901	0.05	
Mo	97	He	0.449	20.36	602	0.07	
Mo	98	He	0.434	5.68	1551	0.03	
Cd	111	He	0.034	11.07	34	0.10	
Cd	114	He	0.062	7.96	151	0.04	
Sb	121	He	0.023	37.21	92	0.03	
Sb	123	He	0.027	29.91	81	0.03	
[Pb]	206	He	4.074	2.22	26947	0.02	
[Pb]	207	He	3.485	1.50	20696	0.02	
Pb	208	He	3.791	1.01	102235	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	954654	1.11	922844	103.45	30	120	
Ge	72	He	91499	1.94	77871	117.50	30	120	
Ge	72	H2	1103977	1.16	972780	113.49	30	120	
In	115	He	858018	0.46	817578	104.95	30	120	
Lu	175	He	2775297	0.97	2667432	104.04	30	120	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name	K1611061-001A
Data File Name	019_PDS.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:11:16-07:00
Sample Type	PDS
Dilution	1
Comment	5
QC Ref File Name	017_ARF.d
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

*DATA not reported

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	58.169	3.592	235091	0.62	50	103	
Cr	52	He	77.365	0.621	220521	0.27	50	93	
Cr	53	He	78.650	0.531	27432	0.58	50	96	
Mn	55	He	487.065	1.777	571415	1.35	50	69	Flag
Ni	60	He	68.763	1.034	101596	0.29	50	95	
Ni	62	He	68.336	2.455	16356	2.55	50	93	
Cu	63	He	55.656	1.329	250247	1.40	50	91	
Cu	65	He	57.218	0.674	126883	1.29	50	94	
Zn	66	He	131.973	0.969	75543	1.46	50	89	
As	75	He	55.622	0.356	17476	0.63	50	96	
Se	77	H2	52.822	0.963	10622	1.69	50	97	
Se	78	H2	49.463	2.042	29473	1.27	50	98	
Mo	95	He	51.418	1.392	105251	0.82	50	99	
Mo	97	He	51.047	1.308	69188	1.03	50	99	
Mo	98	He	50.976	0.564	182828	0.91	50	99	
Cd	111	He	48.351	0.993	44477	0.68	50	96	
Cd	114	He	49.298	1.051	114296	0.57	50	98	
Sb	121	He	49.609	0.977	102405	0.36	50	99	
Sb	123	He	49.434	2.138	83386	1.73	50	99	
[Pb]	206	He	67.416	0.944	449461	0.80	50	95	
[Pb]	207	He	64.674	0.475	387406	0.70	50	95	
Pb	208	He	66.223	0.678	1800801	0.83	50	95	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	954185	3.04	922844	103.40	30	120	
Ge	72	He	90642	0.80	77871	116.40	30	120	
Ge	72	H2	1079436	1.24	972780	110.96	30	120	
In	115	He	865767	0.76	817578	105.89	30	120	
Lu	175	He	2805225	1.14	2667432	105.17	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1611061-001S
Data File Name	020_Spk.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:15:14-07:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	017_ARF.d
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

* DATA not reported
** PDS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	25.088	1.671	103071	0.63	20	93	
Cr	52	He	86.382	0.547	243979	0.68	80	69	Flag
Cr	53	He	87.194	0.174	30133	0.91	80	70	Flag *
Mn	55	He	599.797	0.412	697514	0.48	200	74	Flag
Ni	60	He	197.858	0.709	289654	0.09	200	88	
Ni	62	He	194.050	1.022	45985	0.27	200	86	
Cu	63	He	98.095	0.627	436991	0.85	100	88	
Cu	65	He	99.452	0.952	218485	0.49	100	89	
Zn	66	He	254.332	0.977	144181	0.84	200	83	
As	75	He	187.768	0.959	58448	0.39	200	90	
Se	77	H2	189.172	0.873	36370	0.49	200	92	
Se	78	H2	185.894	0.157	110284	0.56	200	93	
Mo	95	He	184.952	0.292	372030	0.14	200	92	
Mo	97	He	185.219	0.980	246693	0.98	200	92	
Mo	98	He	184.754	1.227	651118	1.33	200	92	
Cd	111	He	19.009	1.009	17185	1.16	20	94	
Cd	114	He	19.230	0.280	43817	0.33	20	95	
Sb	121	He	90.026	0.548	182586	0.73	200	45	Flag
Sb	123	He	90.070	0.132	149278	0.05	200	45	Flag **
[Pb]	206	He	196.461	1.703	1315506	0.38	200	88	
[Pb]	207	He	200.781	1.442	1208051	0.98	200	92	
Pb	208	He	197.987	1.345	5407574	0.52	200	90	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	969266	1.14	922844	105.03	30	120	
Ge	72	He	89846	0.76	77871	115.38	30	120	
Ge	72	H2	1074943	0.40	972780	110.50	30	120	
In	115	He	850746	0.18	817578	104.06	30	120	
Lu	175	He	2818194	1.77	2667432	105.65	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1611061-001SD
Data File Name	021_Spk.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:19:13-07:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	017_ARF.d
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

* DATA not reported
** PDS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	27.223	4.043	105965	0.84	20	104	
Cr	52	He	84.968	0.873	238651	1.31	80	68	Flag
Cr	53	He	85.379	3.924	29340	3.88	80	68	Flag *
Mn	55	He	749.209	0.071	866362	0.92	200	148	Flag
Ni	60	He	199.886	0.306	290990	1.21	200	89	
Ni	62	He	197.773	1.152	46603	1.08	200	88	
Cu	63	He	99.422	0.625	440402	1.00	100	89	
Cu	65	He	101.010	1.061	220652	0.69	100	91	
Zn	66	He	259.148	1.035	146076	0.17	200	86	
As	75	He	190.270	0.148	58896	0.79	200	91	
Se	77	H2	192.706	2.032	36724	1.07	200	94	
Se	78	H2	188.196	1.398	110703	0.57	200	94	
Mo	95	He	185.849	0.508	378471	1.04	200	92	
Mo	97	He	185.629	0.477	250296	0.38	200	92	
Mo	98	He	187.084	1.692	667503	1.98	200	93	
Cd	111	He	19.002	0.444	17391	0.95	20	94	
Cd	114	He	19.172	0.344	44226	0.39	20	94	
Sb	121	He	94.731	1.144	194497	0.72	200	47	Flag
Sb	123	He	94.725	0.670	158931	0.62	200	47	Flag **
[Pb]	206	He	208.319	1.370	1359670	0.48	200	94	
[Pb]	207	He	211.819	1.094	1242279	1.16	200	97	
Pb	208	He	209.011	2.031	5564076	1.28	200	95	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	919252	4.17	922844	99.61	30	120	
Ge	72	He	89340	0.91	77871	114.73	30	120	
Ge	72	H2	1065927	0.96	972780	109.58	30	120	
In	115	He	861276	0.56	817578	105.34	30	120	
Lu	175	He	2746804	1.36	2667432	102.98	30	120	

Prep Blank (PB) Report

Sample Table

Sample Name	KQ1610764-01
Data File Name	022_PB.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:23:11-07:00
Sample Type	PB
Dilution	1
Comment	5
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.011	26.2	64	18.0	0.04	
Cr	52	He	0.043	97.4	831	13.0	0.4	
Cr	53	He	-0.008	-1587.5	110	41.0	0.4	
Mn	55	He	0.218	7.3	286	6.4	0.1	Flag
Ni	60	He	0.097	11.0	197	7.8	0.2	
Ni	62	He	0.074	71.2	43	27.7	0.2	
Cu	63	He	0.057	20.3	510	9.9	0.2	
Cu	65	He	0.067	21.8	277	11.9	0.2	
Zn	66	He	0.299	18.5	288	11.7	1	
As	75	He	0.053	43.1	27	25.7	0.25	
Se	77	H2	-0.115	-129.8	560	4.9	2	
Se	78	H2	0.043	11.7	38	8.0	0.5	
Mo	95	He	0.068	14.1	148	14.7	0.1	
Mo	97	He	0.071	18.2	98	18.8	0.1	
Mo	98	He	0.061	13.8	234	14.3	0.1	
Cd	111	He	0.021	23.8	22	21.0	0.04	
Cd	114	He	0.094	3.7	229	4.5	0.04	Flag
Sb	121	He	0.022	48.7	92	24.5	0.1	
Sb	123	He	0.018	34.1	68	15.2	0.05	
[Pb]	206	He	0.068	13.9	544	12.4	0.1	
[Pb]	207	He	0.062	23.6	419	22.3	0.1	
Pb	208	He	0.064	13.3	2022	12.8	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	958144	1.26	922844	103.83	30	120	
Ge	72	He	87567	1.15	77871	112.45	30	120	
Ge	72	H2	1067679	0.75	972780	109.76	30	120	
In	115	He	882455	1.19	817578	107.94	30	120	
Lu	175	He	2825656	1.53	2667432	105.93	30	120	

Sample Report

Sample Table

Sample Name	KQ1610764-02
Data File Name	023SMPL.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:27:11-07:00
Sample Type	Sample
Dilution	1
Comment	20
ISTD Ref FileName	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

1.15g / 100.0 mL

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag	
Be	9	No Gas	39.288	2.46	168836	0.02		
Cr	52	He	105.379	1.81	295290	0.04		
Cr	53	He	106.574	1.75	36534	0.29		
Mn	55	He	238.763	0.86	275654	0.09		
Ni	60	He	99.932	1.80	145255	0.07		– 117%
Ni	62	He	98.055	1.69	23080	0.42		
Cu	63	He	61.716	0.93	273015	0.02		
Cu	65	He	62.376	0.21	136088	0.05		– 118%
Zn	66	He	113.946	0.34	64195	0.18		– 104%
As	75	He	57.418	0.62	17751	0.32		– 101%
Se	77	H2	97.230	1.41	18877	0.52		
Se	78	H2	96.635	0.54	57029	0.17		– 109%
Mo	95	He	100.239	0.64	215031	0.05		
Mo	97	He	100.252	0.46	142401	0.07		
Mo	98	He	99.728	0.19	374832	0.03		– 106%
Cd	111	He	96.188	0.65	92722	0.10		– 114%
Cd	114	He	97.240	0.33	236259	0.04		
Sb	121	He	48.583	0.34	105104	0.05		
Sb	123	He	48.234	0.90	85267	0.06		
[Pb]	206	He	71.238	0.88	486972	0.01		
[Pb]	207	He	67.235	1.11	412927	0.02		
Pb	208	He	69.358	1.30	1933678	0.00		– 93%

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1014229	2.48	922844	109.90	30	120	
Ge	72	He	89189	0.36	77871	114.53	30	120	
Ge	72	H2	1069196	0.32	972780	109.91	30	120	
In	115	He	907287	0.82	817578	110.97	30	120	
Lu	175	He	2876290	1.27	2667432	107.83	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	024_CCV.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:31:09-07:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	26.015	1.452	102156	0.52	25	104	
Cr	52	He	23.833	2.742	67436	0.95	25	95	
Cr	53	He	23.932	3.189	8303	1.38	25	96	
Mn	55	He	24.281	1.819	28108	1.24	25	97	
Ni	60	He	24.413	0.717	35590	2.31	25	98	
Ni	62	He	24.201	3.816	5728	5.30	25	97	
Cu	63	He	23.919	1.507	106127	0.77	25	96	
Cu	65	He	24.406	1.092	53406	0.81	25	98	
Zn	66	He	24.193	3.062	13749	3.31	25	97	
As	75	He	24.257	3.007	7515	1.70	25	97	
Se	77	H2	24.848	1.948	5256	0.71	25	99	
Se	78	H2	24.453	2.255	14438	1.99	25	98	
Mo	95	He	24.559	1.751	50427	1.36	25	98	
Mo	97	He	24.393	1.622	33162	1.59	25	98	
Mo	98	He	24.755	0.503	89058	0.67	25	99	
Cd	111	He	24.628	0.564	22724	0.18	25	99	
Cd	114	He	24.646	0.568	57319	0.94	25	99	
Sb	121	He	24.809	1.142	51393	1.56	25	99	
Sb	123	He	24.585	1.203	41617	1.33	25	98	
[Pb]	206	He	24.903	0.741	162497	1.46	25	100	
[Pb]	207	He	24.663	2.348	144539	0.36	25	99	
Pb	208	He	24.764	1.719	658912	0.48	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	926488	1.90	922844	100.39	30	120	
Ge	72	He	89329	1.74	77871	114.71	30	120	
Ge	72	H2	1069103	1.23	972780	109.90	30	120	
In	115	He	868363	0.43	817578	106.21	30	120	
Lu	175	He	2744849	2.21	2667432	102.90	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	025_CCB.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:35:08-07:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.012	29.7	66	19.0	0.04	
Cr	52	He	-0.018	-94.5	668	6.2	0.4	
Cr	53	He	-0.052	-182.3	96	33.9	0.4	
Mn	55	He	0.011	254.3	51	60.6	0.1	
Ni	60	He	-0.006	-137.5	51	22.9	0.2	
Ni	62	He	0.002	3397.5	27	45.1	0.2	
Cu	63	He	0.011	26.5	311	5.1	0.2	
Cu	65	He	0.004	346.0	143	20.7	0.2	
Zn	66	He	-0.046	-87.9	98	24.2	1	
As	75	He	0.006	306.9	13	40.0	0.25	
Se	77	H2	-0.080	-293.2	560	8.1	20	
Se	78	H2	0.012	135.2	20	48.3	0.5	
Mo	95	He	0.014	25.0	34	20.1	0.1	
Mo	97	He	0.014	44.4	19	44.4	0.1	
Mo	98	He	0.015	3.3	66	2.9	0.1	
Cd	111	He	0.011	28.6	13	23.5	0.04	
Cd	114	He	0.015	7.8	43	7.3	0.04	
Sb	121	He	0.012	57.5	68	20.0	0.2	
Sb	123	He	0.013	35.9	57	13.1	0.05	
[Pb]	206	He	0.013	10.8	166	6.2	0.1	
[Pb]	207	He	0.016	48.0	136	31.1	0.1	
Pb	208	He	0.016	13.5	678	7.4	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	942951	2.30	922844	102.18	30	120	
Ge	72	He	88084	1.26	77871	113.12	30	120	
Ge	72	H2	1054906	0.29	972780	108.44	30	120	
In	115	He	864799	0.78	817578	105.78	30	120	
Lu	175	He	2745999	2.34	2667432	102.95	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	026LCCV.d
Data Path Name	D:\Data\Experiments\092216A1.b
Acq Date Time	2016-09-22T11:39:07-07:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	003CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.047	12.055	198	10.34	0.04	116	
Cr	52	He	0.425	6.682	1849	4.15	0.4	106	
Cr	53	He	0.349	14.323	226	6.66	0.4	87	
Mn	55	He	0.098	42.346	147	29.55	0.1	98	
Ni	60	He	0.461	4.391	704	5.21	0.4	115	
Ni	62	He	0.372	24.059	110	16.87	0.4	93	
Cu	63	He	0.199	9.747	1104	6.50	0.2	99	
Cu	65	He	0.239	7.569	636	7.57	0.2	120	
Zn	66	He	0.971	15.413	647	11.23	1	97	
As	75	He	1.045	10.570	323	11.30	1	104	
Se	77	H2	1.883	7.422	926	3.23	2	94	
Se	78	H2	1.988	0.815	1172	0.99	2	99	
Mo	95	He	0.123	15.127	256	13.95	0.1	123	
Mo	97	He	0.101	32.238	136	33.48	0.1	101	
Mo	98	He	0.108	17.190	393	16.10	0.1	108	
Cd	111	He	0.035	12.923	35	12.63	0.04	88	
Cd	114	He	0.051	6.558	124	5.47	0.04	128	
Sb	121	He	0.112	16.687	272	13.22	0.1	112	
Sb	123	He	0.097	12.390	197	9.04	0.1	97	
[Pb]	206	He	0.108	11.421	780	9.14	0.1	108	
[Pb]	207	He	0.116	4.657	719	3.29	0.1	116	
Pb	208	He	0.111	4.298	3187	2.81	0.1	111	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	915985	12.57	922844	99.26	30	120	
Ge	72	He	86129	1.70	77871	110.61	30	120	
Ge	72	H2	1056743	0.65	972780	108.63	30	120	
In	115	He	856760	1.21	817578	104.79	30	120	
Lu	175	He	2722657	1.31	2667432	102.07	30	120	

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

October 18, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed is the final validation report for the fraction listed below. This SDG was received on September 29, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37180:

SDG #	**Fraction:**
K1611061	Metals

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #37180 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	(4) Metals (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	K1611061	09/29/16	10/13/16	0	1																														

Data Validation Report
Fort Bliss, Castner Range

SDGs: K1611061

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

October 18, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the July 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Please note that the client sample IDs have been truncated due to field length limitations. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilution, laboratory control sample (LCS), field duplicate samples, split samples, and internal standards.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, split samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the method were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the method blanks reviewed by ADR.

No contaminant concentrations were detected in the initial or continuing calibration blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for antimony and zinc. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R or serial dilution %R were within QC limits. The details are provided in Enclosures I and II.

IX. Duplicate Sample Analysis/Triplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) and triplicate (TRP) analyses specified for the samples in this SDG, and therefore duplicate and triplicate analyses were not performed for this SDG.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XII. Field Duplicates

No field duplicates were identified in this SDG.

XIII. Internal Standards

All internal standard percent recoveries were within QC limits.

XIV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Based upon the data validation, all results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
20-Jul-2016	FTBL-SS-B20-12-24	K1611061-001	N	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B20-12-24MS	KQ1611503-03	MS	EPA 3050B	6020A	III
20-Jul-2016	FTBL-SS-B20-12-24MSD	KQ1611503-04	MSD	EPA 3050B	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1611061

Laboratory: ALS_K

EDD Filename: K1611061_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

No Data Review Qualifiers Applied.

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

K1611061

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1611061 **Laboratory: ALS_K**

EDD Filename: K1611061_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-SS-B20-12-24-072016MS (Dry) FTBL-SS-B20-12-24-072016MSD (Dry) (FTBL-SS-B20-12-24-072016)	ANTIMONY ZINC	45 80	47 -	72.00-124.00 82.00-119.00	- -	ANTIMONY ZINC	No Qual, Sb, Post Spike = 99% Zn, Serial Dilution OK

LDC #: 37180A4a
SDG #: K1611061
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 10/5/16
Page: 1 of 1
Reviewer: A
2nd Reviewer: A

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D (Sb %R out, no qual PS in) (Zn %R out, no qual, SD in)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B20-12-24-072016	K1611061-001	Soil	07/20/16
2	FTBL-SS-B20-12-24-072016MS	K1611061-001MS	Soil	07/20/16
3	FTBL-SS-B20-12-24-072016MSD	K1611061-001MSD	Soil	07/20/16
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

LDC #: 37180A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: AL
2nd reviewer: E

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1		Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
(2(23		Al, (Sb), As, Ba, Be, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, (Zn), Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U, ____

Comments: Mercury by CVAA if performed

ALS Environmental
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February 01, 2017

Analytical Report for Service Request No: K1700524

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

RE: Closed Castner Firing Range / 06261038.0001.00400

Dear (b) (6)

Enclosed are the results of the sample(s) submitted to our laboratory January 18, 2017
For your reference, these analyses have been assigned our service request number **K1700524.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is (b) . You may also contact me via email at (b) (6) .

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

(b) (6)
Senior Project
Manager

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Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
Chain of Custody
Total Solids
Metals
Raw Data
    Total Solids
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
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ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1700524
Project:	Closed Castner Firing Range/ 06261038.0001.00400	**Date Received:**	01/18/17
Sample Matrix:	Soil		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Five soil samples were received for analysis at ALS Environmental on 01/18/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by___ (b) (6) _____

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Chain of Custody

R1700524

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068
Columbia Analytical Services, Inc.
Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.:

Project Manager:	(b) (6)	**Bill to:**	PO Number: 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
P.O. Number:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present		
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice
Cooler Custody Seals:	Yes	No	N/A	Total Containers:
Sample Custody Seals:	Yes	No	N/A	

REQUESTED ANALYSIS

TAT

Standard
Same Day *** [redacted]
Next Day ***
5 Day
EDD

*** Please call fo availability

Due Date:

Comments

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Lead
FTBL-SS- B069-0-6-011617	S	1/16/17	1603		1	X
FTBL-SS- B068-0-6-011617	S	1/16/17	1607		1	X
FTBL-SS- B067-0-6-011617	S	1/16/17	1611		1	X
FTBL-SS- B070-0-6-011617	S	1/16/17	1615		1	X
~~FTBL-SS-~~ FD-011617-2	S	1/16/17	—		1	X
FTBL-SS-	S				1	
FTBL-SS-	S				1	
FTBL-SS-	S				1	
FTBL-SS-	S				1	
FTBL-SS-	S				1	
FTBL-SS-	S				1	

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6)		1/17/17 1700	(b) (6)		1/18/17 1050

PC GS

Cooler Receipt and Preservation Form

Client Arcadis Service Request K17 00524

Received: 1/18/17 Opened: 1/18/17 By: CG Unloaded: 1/18/17 By: CG

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 - Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number NA	Filed
-0.6	-0.6	0.1	0.1	0.0	370		8026 5614 5193	

4. Packing material: *Inserts* *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temper… …ble below. NA (Y) N
   If applicable, tissue sampl… …rtially Thawed Thawed
7. Were all sample labels complete (i.e analysis, prese… NA (Y) N
8. Did all sample labels and tags agree with custody p… …in the table on page 2. NA (Y) N
9. Were appropriate bottles/containers and volumes re… NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) …licate in the table below NA Y N
11. Were VOA vials received without headspace? *Indi… …table below.* NA Y N
12. Was C12/Res negative? NA Y N

Need to ask if this (b) (6) TS air drie… (b) (6) SMO CART

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

_____

_____

_____

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17
Sample Matrix:	Soil	**Date Received:**	01/18/17
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	Air Dried

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
FTBL-SS-B069-0-6-011617	K1700524-001	**89.8**	-	-	1	01/20/17 16:25	
FTBL-SS-B068-0-6-011617	K1700524-002	**87.6**	-	-	1	01/20/17 16:25	
FTBL-SS-B067-0-6-011617	K1700524-003	**89.6**	-	-	1	01/20/17 16:25	
FTBL-SS-B070-0-6-011617	K1700524-004	**90.1**	-	-	1	01/20/17 16:25	
FD-011617-2	K1700524-005	**90.2**	-	-	1	01/20/17 16:25	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17
Sample Matrix:	Soil	**Date Received:**	01/18/17
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	Air Dried

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
FTBL-SS-B068-0-6-011617	K1700524-002DUP	-	87.6	87.6	87.6	<1	20	01/20/17
Batch QC	K1700528-007DUP	-	91.0	90.2	90.6	<1	20	01/20/17
Batch QC	K1700531-005DUP	-	88.5	87.8	88.2	<1	20	01/20/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1700560-002DUP	-	71.0	71.7	71.4	<1	20	01/20/17
Batch QC	K1700577-002DUP	-	84.9	88.4	86.7	4	20	01/20/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 16:03
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B069-0-6-011617	**Basis:**	Dry
Lab Code:	K1700524-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**68.3**	mg/Kg	0.42	0.04	0.02	5	01/25/17 11:52	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 16:07
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B068-0-6-011617	**Basis:**	Dry
Lab Code:	K1700524-002		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**34.1**	mg/Kg	0.43	0.04	0.02	5	01/25/17 12:02	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 16:11
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B067-0-6-011617	**Basis:**	Dry
Lab Code:	K1700524-003		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**74.8**	mg/Kg	0.43	0.04	0.02	5	01/25/17 12:05	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 16:15
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B070-0-6-011617	**Basis:**	Dry
Lab Code:	K1700524-004		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**59.7**	mg/Kg	0.46	0.05	0.02	5	01/25/17 12:07	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FD-011617-2	**Basis:**	Dry
Lab Code:	K1700524-005		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**62.7**	mg/Kg	0.45	0.05	0.02	5	01/25/17 12:13	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	KQ1700722-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	ND U	mg/Kg	0.5	0.05	0.02	5	01/25/17 11:47	01/24/17	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700524
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17
Sample Matrix:	Soil	**Date Received:**	01/18/17
		Date Analyzed:	01/25/17
		Date Extracted:	01/24/17

Duplicate Matrix Spike Summary
Total Metals

Sample Name:	FTBL-SS-B069-0-6-011617	**Units:**	mg/Kg
Lab Code:	K1700524-001	**Basis:**	Dry
Analysis Method:	6020A		
Prep Method:	EPA 3050B		

		Matrix Spike			Duplicate Matrix Spike					
		KQ1700722-03			KQ1700722-04					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Lead	68.4	147	79.8	98	166	85.3	114	84-118	12	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 1/30/2017 12:48:55 PM Superset Reference:

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range/06261038.0001.00400
Sample Matrix: Soil

Service Request: K1700524
Date Analyzed: 01/25/17

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis: Dry

Lab Control Sample
KQ1700722-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Lead	6020A	101	100	101	84-118

Prep Summary Report

Client: ARCADIS U.S., Inc. **Service Request:**K1700524
Project: Closed Castner Firing Range/06261038.0001.00400
Sample Matrix: Soil

Metals

Prep Method: EPA 3050B **Extraction Lot:**280220
Analytical Method: 6020A

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
FTBL-SS-B069-0-6-011617	K1700524-001	1/16/17	1/18/17	1.321 g	100 mL	
FTBL-SS-B068-0-6-011617	K1700524-002	1/16/17	1/18/17	1.331 g	100 mL	
FTBL-SS-B067-0-6-011617	K1700524-003	1/16/17	1/18/17	1.284 g	100 mL	
FTBL-SS-B070-0-6-011617	K1700524-004	1/16/17	1/18/17	1.205 g	100 mL	
FD-011617-2	K1700524-005	1/16/17	1/18/17	1.226 g	100 mL	
Method Blank	KQ1700722-01MB	NA	NA	1.00 g	100 mL	
Lab Control Sample	KQ1700722-02LCS	NA	NA	1 g	100 mL	
Matrix Spike	KQ1700722-03MS	1/16/17	1/18/17	1.395 g	100 mL	
Duplicate Matrix Spike	KQ1700722-04DMS	1/16/17	1/18/17	1.305 g	100 mL	

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Lead	6020A	532307	25.0	25.3	101	25.0	25.5	102	25.0	25.6	103

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Lead	6020A	532307				25.0	24.8	99	25.0	25.6	102

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Lead	6020A	532307				25.0	25.4	102	25.0	24.8	99

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION BLANK

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank	
			Result	C	Result	C	Result	C	Result	C
Lead	6020A	532307	0.04	U	0.04	U	0.04	U	0.04	U

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION BLANK

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank	
			Result	C	Result	C	Result	C	Result	C
Lead	6020A	532307			0.04	U	0.04	U	0.04	U

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICVS							
Lead	6020A	532307	0.1	0.1	116	80-120	01/25/17 11:39
LLCCVS							
Lead	6020A	532307	1.2	1.0	117	70-130	01/25/17 13:03
LLCCVS							
Lead	6020A	532307	1.1	1.0	109	70-130	01/25/17 13:52

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA **Concentration Units:** ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Lead	6020A	532307	0.2	-	-	-	01/25/17 11:43

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB **Concentration Units:** ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Lead	6020A	532307	0.1	-	-	-	01/25/17 11:45

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K1700524-001A								
Lead	6020A	532307	162	209	50.0	94	80-120	01/25/17 11:56

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Initial Sample Result	Serial Dillution Result	% Diff	% Diff. Limit	Analysis Date
K1700524-001SDL							
Lead	6020A	532307	162	164	1	10	01/25/17 11:54

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

Detection Limits

Matrix: Soil

Analyte	Mass	Units	LOQ	LOD	MDL	Method
Lead	208	ug/L	1	0.1	0.04	6020A

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-05

Analyte	Concentration (ug/L)	Method
Lead 208	3000	6020A

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

Analysis Run Log

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Dilution Factor	Date/Time	Pb
ZZZZZZ	1	01/25/17 11:23	
ZZZZZZ	1	01/25/17 11:26	
ICV	1	01/25/17 11:28	X
CCV	1	01/25/17 11:30	X
ICB	1	01/25/17 11:32	X
CCB	1	01/25/17 11:34	X
ZZZZZZ	1	01/25/17 11:36	
LLICVS	1	01/25/17 11:39	X
ZZZZZZ	1	01/25/17 11:41	
ICSA	1	01/25/17 11:43	X
ICSAB	1	01/25/17 11:45	X
KQ1700722-01MB	5	01/25/17 11:47	X
KQ1700722-02LCS	20	01/25/17 11:50	X
K1700524-001	5	01/25/17 11:52	X
K1700524-001SDL	25	01/25/17 11:54	X
K1700524-001PS	5	01/25/17 11:56	X
K1700524-001MS	5	01/25/17 11:58	X
K1700524-001DMS	5	01/25/17 12:00	X
K1700524-002	5	01/25/17 12:02	X
K1700524-003	5	01/25/17 12:05	X
K1700524-004	5	01/25/17 12:07	X
CCV	1	01/25/17 12:09	X
CCB	1	01/25/17 12:11	X
K1700524-005	5	01/25/17 12:13	X
ZZZZZZ	5	01/25/17 12:15	
ZZZZZZ	5	01/25/17 12:18	
ZZZZZZ	5	01/25/17 12:20	
ZZZZZZ	5	01/25/17 12:22	
ZZZZZZ	5	01/25/17 12:24	
ZZZZZZ	5	01/25/17 12:26	
ZZZZZZ	5	01/25/17 12:28	
ZZZZZZ	5	01/25/17 12:31	
ZZZZZZ	5	01/25/17 12:33	
CCV	1	01/25/17 12:35	X
CCB	1	01/25/17 12:37	X
ZZZZZZ	5	01/25/17 12:39	
ZZZZZZ	5	01/25/17 12:41	

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

Analysis Run Log

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Dilution Factor	Date/Time	Pb
ZZZZZZ	5	01/25/17 12:43	
ZZZZZZ	100	01/25/17 12:46	
CCV	1	01/25/17 12:48	X
CCB	1	01/25/17 12:52	X
ZZZZZZ	1	01/25/17 12:54	
ZZZZZZ	1	01/25/17 12:56	
ZZZZZZ	1	01/25/17 13:01	
LLCCVS 1.0 ppb	1	01/25/17 13:03	X
ZZZZZZ	1	01/25/17 13:05	
ZZZZZZ	1	01/25/17 13:08	
ZZZZZZ	500	01/25/17 13:11	
ZZZZZZ	5	01/25/17 13:13	
ZZZZZZ	20	01/25/17 13:15	
ZZZZZZ	5	01/25/17 13:17	
ZZZZZZ	25	01/25/17 13:20	
ZZZZZZ	5	01/25/17 13:22	
ZZZZZZ	5	01/25/17 13:24	
ZZZZZZ	5	01/25/17 13:26	
ZZZZZZ	5	01/25/17 13:28	
ZZZZZZ	5	01/25/17 13:30	
CCV	1	01/25/17 13:32	X
CCB	1	01/25/17 13:35	X
ZZZZZZ	5	01/25/17 13:37	
ZZZZZZ	5	01/25/17 13:39	
ZZZZZZ	5	01/25/17 13:41	
CCV	1	01/25/17 13:43	X
CCB	1	01/25/17 13:45	X
ZZZZZZ	1	01/25/17 13:48	
ZZZZZZ	1	01/25/17 13:50	
LLCCVS 1.0 ppb	1	01/25/17 13:52	X

Client: ARCADIS U.S., Inc. **Service Request:** K1700524

Project: Closed Castner Firing Range/06261038.0001.00400

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Date/Time	Ge72He	Lu175He
ZZZZZZ	01/25/17 11:23		
ZZZZZZ	01/25/17 11:26		
ICV	01/25/17 11:28	99	102
CCV	01/25/17 11:30	99	99
ICB	01/25/17 11:32	98	98
CCB	01/25/17 11:34	97	100
ZZZZZZ	01/25/17 11:36		
LLICVS	01/25/17 11:39	99	102
ZZZZZZ	01/25/17 11:41		
ICSA	01/25/17 11:43	86	91
ICSAB	01/25/17 11:45	84	94
KQ1700722-01MB	01/25/17 11:47	93	96
KQ1700722-02LCS	01/25/17 11:50	97	99
K1700524-001	01/25/17 11:52	99	100
K1700524-001SDL	01/25/17 11:54	100	102
K1700524-001PS	01/25/17 11:56	100	102
K1700524-001MS	01/25/17 11:58	98	100
K1700524-001DMS	01/25/17 12:00	98	99
K1700524-002	01/25/17 12:02	96	98
K1700524-003	01/25/17 12:05	99	100
K1700524-004	01/25/17 12:07	100	103
CCV	01/25/17 12:09	100	101
CCB	01/25/17 12:11	99	102
K1700524-005	01/25/17 12:13	101	102
ZZZZZZ	01/25/17 12:15		
ZZZZZZ	01/25/17 12:18		
ZZZZZZ	01/25/17 12:20		
ZZZZZZ	01/25/17 12:22		
ZZZZZZ	01/25/17 12:24		
ZZZZZZ	01/25/17 12:26		
ZZZZZZ	01/25/17 12:28		
ZZZZZZ	01/25/17 12:31		
ZZZZZZ	01/25/17 12:33		
CCV	01/25/17 12:35	105	106
CCB	01/25/17 12:37	102	105
ZZZZZZ	01/25/17 12:39		
ZZZZZZ	01/25/17 12:41		

Client: ARCADIS U.S., Inc. **Service Request:** K1700524
Project: Closed Castner Firing Range/06261038.0001.00400

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Date/Time	Ge72He	Lu175He
ZZZZZZ	01/25/17 12:43		
ZZZZZZ	01/25/17 12:46		
CCV	01/25/17 12:48	99	102
CCB	01/25/17 12:52	99	103
ZZZZZZ	01/25/17 12:54		
ZZZZZZ	01/25/17 12:56		
ZZZZZZ	01/25/17 13:01		
LLCCVS 1.0 ppb	01/25/17 13:03	97	100
ZZZZZZ	01/25/17 13:05		
ZZZZZZ	01/25/17 13:08		
ZZZZZZ	01/25/17 13:11		
ZZZZZZ	01/25/17 13:13		
ZZZZZZ	01/25/17 13:15		
ZZZZZZ	01/25/17 13:17		
ZZZZZZ	01/25/17 13:20		
ZZZZZZ	01/25/17 13:22		
ZZZZZZ	01/25/17 13:24		
ZZZZZZ	01/25/17 13:26		
ZZZZZZ	01/25/17 13:28		
ZZZZZZ	01/25/17 13:30		
CCV	01/25/17 13:32	105	106
CCB	01/25/17 13:35	103	107
ZZZZZZ	01/25/17 13:37		
ZZZZZZ	01/25/17 13:39		
ZZZZZZ	01/25/17 13:41		
CCV	01/25/17 13:43	108	110
CCB	01/25/17 13:45	107	107
ZZZZZZ	01/25/17 13:48		
ZZZZZZ	01/25/17 13:50		
LLCCVS 1.0 ppb	01/25/17 13:52	103	103

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Total Solids

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

Benchsheet

Service Request #: K1700579, K1700577, KQ1700613, K1700554, K1700560, K1700576, K1700515, K1700524, K1700528, K1700530, K1700531

Run #: 531809

Test: TS

Balance ID: K-BALANCE-50

Method: 160.3 Modified

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1700579-005	1.282	5.166	3.542	2.26	43.7	
	K1700577-001	1.277	11.913	12.047	10.8	90.4	
	K1700577-002	1.292	11.131	10.740	9.45	84.9	
	K1700577-002DUP	1.295	12.928	12.726	11.4	88.4	4
	K1700577-003	1.287	10.105	10.097	8.81	87.2	
	K1700577-004	1.270	10.512	10.604	9.33	88.8	
	K1700577-005	1.288	10.164	7.105	5.82	57.2	
	K1700577-006	1.271	11.002	10.181	8.91	81.0	
	K1700554-001	1.281	10.768	10.951	9.67	89.8	
	K1700554-002	1.298	10.605	11.008	9.71	91.6	
	K1700560-001	1.281	11.448	10.039	8.76	76.5	
	K1700560-002	1.287	10.820	8.971	7.68	71.0	
	K1700560-002DUP	1.273	10.775	9.003	7.73	71.7	<1
	K1700560-003	1.292	11.985	11.218	9.93	82.8	
	K1700560-004	1.274	11.013	9.982	8.71	79.1	
	K1700576-001	1.288	10.407	10.283	9.00	86.4	
	K1700576-002	1.292	11.000	11.363	10.1	91.6	
	K1700576-003	1.294	10.163	10.165	8.87	87.3	
	K1700515-001	1.295	10.299	6.798	5.50	53.4	
	K1700515-002	1.290	10.351	8.001	6.71	64.8	
	K1700515-007	1.286	10.945	7.218	5.93	54.2	
	K1700524-001	1.291	10.255	10.502	9.21	89.8	
	K1700524-002	1.287	10.614	10.582	9.30	87.6	
	K1700524-002DUP	1.293	11.374	11.260	9.97	87.6	<1
	K1700524-003	1.277	11.079	11.199	9.92	89.6	
	K1700524-004	1.284	11.162	11.338	10.1	90.1	
	K1700524-005	1.283	12.406	12.477	11.2	90.2	
	K1700528-001	1.285	14.830	14.387	13.1	88.3	
	K1700528-002	1.286	10.257	10.593	9.31	90.7	
	K1700528-003	1.286	13.440	13.227	11.9	88.8	
	K1700528-004	1.289	11.987	12.437	11.1	93.0	
	K1700528-005	1.294	10.109	10.515	9.22	91.2	
	K1700528-006	1.273	10.168	10.051	8.78	86.3	
	K1700528-007	1.293	10.742	11.070	9.78	91.0	
	K1700528-007DUP	1.294	10.689	10.939	9.65	90.2	<1
	K1700528-008	1.292	11.852	11.815	10.5	88.8	
	K1700528-009	1.297	10.105	10.603	9.31	92.1	

Comments: DJM Weight set serial No. 42868 out ap Reviewed by SC 1/24/17

Benchsheet

Service Request #: K1700579, K1700577, KQ1700613, K1700554, K1700560, K1700576, K1700515, K1700524, K1700528, K1700530, K1700531

Run #: 531809

Test: TS

Balance ID: K-BALANCE-50

Method: 160.3 Modified

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1700530-001	1.291	12.446	12.247	11.0	88.0	
	K1700530-002	1.286	11.206	11.282	10.00	89.2	
	K1700530-003	1.285	10.777	10.208	8.92	82.8	
	K1700531-001	1.280	15.733	14.550	13.3	84.3	
	K1700531-002	1.282	10.944	10.779	9.50	86.8	
	K1700531-003	1.288	10.299	9.981	8.69	84.4	
	K1700531-004	1.288	10.179	9.399	8.11	79.7	
	K1700531-005	1.288	11.366	11.342	10.1	88.5	
	K1700531-005DUP	1.287	10.934	10.886	9.60	87.8	<1
	K1700531-006	1.295	15.465	14.456	13.2	85.1	

	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
Oven1	k-oven-07	105	105	1/20/2017	16:25	1/23/2017	08:16	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	K-BALANCE-50	0.999, 99.998	1.000, 99.999	1/20/2017	09:17	1/20/2017	16:24
Calibration2	K-BALANCE-49	1.000, 100.000	1.000, 99.999	1/23/2017	09:30	1/23/2017	09:55

Comments: DJM Weight set serial No. 42868 out ap Reviewed by SC 1/24/17

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 280220
Team: Metals
Analyst: (b) (6)

Prep Workflow: MetDigSICP
Prep Method: EPA 3050B
Rush/NPDES: N/A

Status: Prepped
Current Step: Digestion

Prep Date: 01/24/2017 09:35
Due Date: 02/04/2017
Hold Date: 07/15/2017

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1700722-01	Method Blank		1.00 g		100 mL			10% HNO3, 10% HCl
KQ1700722-02	Lab Control Sample				100 mL	2 mL 1 mL 1 mL 1 mL	177744 178641 178642 178652	10% HNO3, 10% HCl
K1700524-001	FTBL-SS-B069-0-6-011617	.01	1.321 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-001: KQ1700722-03	Matrix Spike	.01	1.395 g	As Received	100 mL	2 mL 1 mL 1 mL 1 mL	177744 178641 178642 178652	10% HNO3, 10% HCl
K1700524-001: KQ1700722-04	Duplicate Matrix Spike	.01	1.305 g	As Received	100 mL	2 mL 1 mL 1 mL 1 mL	177744 178641 178642 178652	10% HNO3, 10% HCl
K1700524-002	FTBL-SS-B068-0-6-011617	.01	1.331 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-003	FTBL-SS-B067-0-6-011617	.01	1.284 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-004	FTBL-SS-B070-0-6-011617	.01	1.205 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-005	FD-011617-2	.01	1.226 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-001	FTBL-SS-B066-0-6-011617	.01	1.411 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-002	FTBL-SS-B065-0-6-011617	.01	1.246 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-003	FTBL-SS-B064-0-6-011617	.01	1.367 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-004	FTBL-SS-B061-0-6-011617	.01	1.118 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-005	FTBL-SS-B062-0-6-011617	.01	1.190 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-006	FTBL-SS-B063-0-6-011617	.01	1.132 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-007	FTBL-SS-B072-0-6-011617	.01	1.210 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-008	FTBL-SS-B071-0-6-011617	.01	1.203 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-009	FD-011617-1	.01	1.213 g	As Received	100 mL			10% HNO3, 10% HCl
K1700530-001	FTBL-SS-B073-0-6-011717	.03	1.383 g	As Received	100 mL			10% HNO3, 10% HCl
K1700530-002	FTBL-SS-B075-0-6-011717	.03	1.224 g	As Received	100 mL			10% HNO3, 10% HCl
K1700530-003	FTBL-SS-B074-0-6-011717	.03	1.202 g	As Received	100 mL			10% HNO3, 10% HCl

21 Total Samples consisting of 17 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated

with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
K-MET SS1	Spike	177744	4/8/2017
K-MET SS3	Spike	178641	3/18/2017

Name	Type	ID	Expires
K-MET SS4	Spike	178642	8/15/2017
K-MET SS5	Spike	178652	6/4/2017

Preparation Materials

Step	Name	ID
All	Teflon Chips	69101
All	K-MET H2O2	175797
All	K-MET HNO3	178047

Step	Name	ID
All	K-MET HCL	178073
All	K-MET 100ml Centrifuge Tube	178771

Preparation Hardware / Equipment

Step	Name	Property	Value	
Digestion	K-Balance-02	Date Checked	1/24/17	
Digestion	K-BlockDigester-07	Corrected Temperature	95	deg C
Digestion	K-BlockDigester-07	Correction Factor	0	deg C

Step	Name	Property	Value	
Digestion	K-BlockDigester-07	Observed Temperature	95	deg C
Digestion	K-BlockDigester-07	Thermometer ID 6402142		NONE
Digestion	K-BlockDigester-07	Thermometer Location	8	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Weigh	24-JAN-17 09:35	24-JAN-17 11:30	(b) (6)		N	
Digestion	24-JAN-17 09:35	24-JAN-17 11:30			N	

Comments

1R: 15 mins, 2R: 30 mins, 3R: 15 mins. Balance-50 was also used and checked 1/20/17.

Review

Reviewed by: _____ Date: 1/26/18

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
	V	100*	1000ml	50	
	Zn	100*	1000ml	50	
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	25	500ml	50	
	Mo	50	500ml	100	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	
K-MET GFLCSW	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.
** Denotes 10,000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

Service Request #	K1700524		
Calibration	012517BMS05		
QC in calibration	012517BMS05		
QC Service Request #	K1700524		
STARLIMS run #	532307		
CAL STD	MS21-41-B	ICSA STD	MS21-38-B
ICV STD	MS21-35-D	ICSAB STD	MS21-38-C
LLICV STD	MS21-35-E	INT STD	MS21-34-B

6020A DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within 80-120% DoD limit?	X		
12. Spikes within 80-120% DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?	X		
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?			X
21. Cd Correction Applied?			X
22. Was run prematurely stopped, If so why?		X	

Comments: LRS= 1000 ppb.

Use mrl = 1.0ppb = 0.5 mg/kg.

Primary Review by _____ Date 11/25/17

Secondary Review by _____ Date 11/26/17

R:\icp\misc\data review forms\icpms review form

Data Review Form

Service Request #:	**K1700524**
Instrument ID#:	**K-ICP-MS-05**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-05 (Agilent)\012517B.csv**
RUNNO:	**532307**

There are no issues to report.

Primary Approver: _____ 1/24/17

Secondary Approver: 1/26/17

532307

	Sample						
		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
1			001CALB.	1/25/2017 11:23:55 AM	CalBlk	Blank	
2			002CALS.	1/25/2017 11:26:05 AM	CalStd	25ppb	
3			003_ICV.d	1/25/2017 11:28:14 AM	ICV	ICV	
4			004_CCV.	1/25/2017 11:30:23 AM	CCV	CCV	
5			005_ICB.d	1/25/2017 11:32:32 AM	ICB	ICB	
6			006_CCB.	1/25/2017 11:34:41 AM	CCB	CCB	
7			007LICV.d	1/25/2017 11:36:50 AM	LLICV	LLICVS	
8			008LICV.d	1/25/2017 11:39:10 AM	LLICV	LLICVS	
9			009SMPL.	1/25/2017 11:41:20 AM	Sample	LRSTD	
10			010ICSA.d	1/25/2017 11:43:30 AM	ICSA	ICSA	
11			011ICSB.d	1/25/2017 11:45:38 AM	ICSB	ICSAB	
12			012_PB.d	1/25/2017 11:47:48 AM	PB	KQ1700722-01	5
13			013_LCS.d	1/25/2017 11:50:01 AM	LCS	KQ1700722-02	20
14			014_ARF.d	1/25/2017 11:52:11 AM	AllRef	K1700524-001	5
15			015SMPL.	1/25/2017 11:54:20 AM	Sample	K1700524-001L	25
16			016_PDS.d	1/25/2017 11:56:28 AM	PDS	K1700524-001A	5
17			017_Spk.d	1/25/2017 11:58:37 AM	Spike	K1700524-001S	5
18			018_Spk.d	1/25/2017 12:00:47 PM	Spike	K1700524-001S	5
19			019SMPL.	1/25/2017 12:02:56 PM	Sample	K1700524-002	5
20			020SMPL.	1/25/2017 12:05:06 PM	Sample	K1700524-003	5
21			021SMPL.	1/25/2017 12:07:16 PM	Sample	K1700524-004	5
22			022_CCV.	1/25/2017 12:09:26 PM	CCV	CCV	
23			023_CCB.	1/25/2017 12:11:35 PM	CCB	CCB	
24			024SMPL.	1/25/2017 12:13:44 PM	Sample	K1700524-005	5
25			025SMPL.	1/25/2017 12:15:53 PM	Sample	K1700528-001	5
26			026SMPL.	1/25/2017 12:18:02 PM	Sample	K1700528-002	5
27			027SMPL.	1/25/2017 12:20:11 PM	Sample	K1700528-003	5
28			028SMPL.	1/25/2017 12:22:21 PM	Sample	K1700528-004	5
29			029SMPL.	1/25/2017 12:24:32 PM	Sample	K1700528-005	5
30			030SMPL.	1/25/2017 12:26:41 PM	Sample	K1700528-006	5
31			031SMPL.	1/25/2017 12:28:50 PM	Sample	K1700528-007	5
32			032SMPL.	1/25/2017 12:31:01 PM	Sample	K1700528-008	5
33			033SMPL.	1/25/2017 12:33:10 PM	Sample	K1700528-009	5
34			034_CCV.	1/25/2017 12:35:19 PM	CCV	CCV	
35			035_CCB.	1/25/2017 12:37:29 PM	CCB	CCB	

Sample

		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
36			036SMPL.	1/25/2017 12:39:38 PM	Sample	K1700530-001	5
37	✓		037SMPL.	1/25/2017 12:41:48 PM	Sample	K1700530-002	5
38			038SMPL.	1/25/2017 12:43:57 PM	Sample	K1700530-003	5
39			039SMPL.	1/25/2017 12:46:07 PM	Sample	K1700528-007	100
40			040_CCV.	1/25/2017 12:48:16 PM	CCV	CCV	
41			041_CCB.	1/25/2017 12:52:06 PM	CCB	CCB	
42	✓		042LCCV.	1/25/2017 12:54:16 PM	LLCCV	LLCCVS	
43	✓		043LCCV.	1/25/2017 12:56:25 PM	LLCCV	LLCCVS	
44			044LCCV.	1/25/2017 1:01:01 PM	LLCCV	LLCCVS	
45			045_QC1.d	1/25/2017 1:03:10 PM	QC1	LLCCVS 1.0 ppb	
46			046_QC1.d	1/25/2017 1:05:20 PM	QC1	LLCCVS 1.0 ppb	
47			047_QC1.d	1/25/2017 1:08:20 PM	QC1	LLCCVS 1.0 ppb	
48			048SMPL.	1/25/2017 1:11:27 PM	Sample	K1700530-002	500
49			049_PB.d	1/25/2017 1:13:36 PM	PB	KQ1700728-01	5
50			050_LCS.d	1/25/2017 1:15:45 PM	LCS	KQ1700728-02	20
51			051_ARF.d	1/25/2017 1:17:54 PM	AllRef	K1700531-001	5
52			052SMPL.	1/25/2017 1:20:04 PM	Sample	K1700531-001L	25
53			053_PDS.d	1/25/2017 1:22:14 PM	PDS	K1700531-001A	5
54	✓		054_Spk.d	1/25/2017 1:24:22 PM	Spike	K1700531-001S	5
55	✓		055_Spk.d	1/25/2017 1:26:31 PM	Spike	K1700531-001S	5
56			056SMPL.	1/25/2017 1:28:41 PM	Sample	K1700531-002	5
57			057SMPL.	1/25/2017 1:30:49 PM	Sample	K1700531-003	5
58			058_CCV.	1/25/2017 1:32:58 PM	CCV	CCV	
59			059_CCB.	1/25/2017 1:35:08 PM	CCB	CCB	
60			060SMPL.	1/25/2017 1:37:20 PM	Sample	K1700531-004	5
61			061SMPL.	1/25/2017 1:39:28 PM	Sample	K1700531-005	5
62			062SMPL.	1/25/2017 1:41:37 PM	Sample	K1700531-006	5
63			063_CCV.	1/25/2017 1:43:47 PM	CCV	CCV	
64			064_CCB.	1/25/2017 1:45:57 PM	CCB	CCB	
65			065LCCV.	1/25/2017 1:48:06 PM	LLCCV	LLCCVS	
66			066LCCV.	1/25/2017 1:50:16 PM	LLCCV	LLCCVS	
67			067SMPL.	1/25/2017 1:52:26 PM	Sample	LLCCVS 1.0 ppb	

Analyte

	Name	Mass	ISTD	Tune Mode
1	Zn	66	72	He

Analyte				
Name		Mass	ISTD	Tune Mode
2	[Pb]	206	175	He
3	[Pb]	207	175	He
4	Pb	208	175	He
5	Ge	72		He
6	Lu	175		He

US EPA Tune Check Sample Report

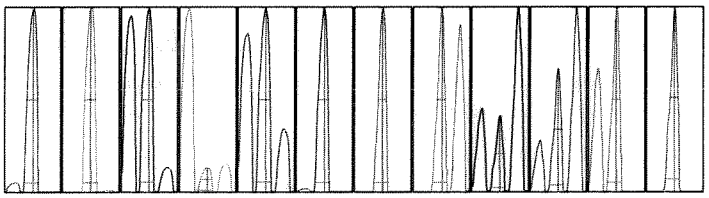
Batch Folder D:\Data\Experiments\012517A.b
Report Comment ALS Tune
Instrument Name G3281A JP13482848

[No Gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	101136	0.44	5.00	
9	20505	0.68	5.00	
24	116656	0.61	5.00	
25	15600	0.49	5.00	
26	17862	1.87	5.00	
59	147033	0.64	5.00	
115	238668	0.90	5.00	
206	72755	0.88	5.00	
207	66275	1.43	5.00	
208	160147	1.17	5.00	
209	236775	0.76	5.00	
238	352471	1.19	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	101518	101670	100982	100631	100878
9	20519	20472	20724	20469	20342
24	116049	116644	116600	117840	116148
25	15701	15521	15548	15662	15569
26	17810	18240	17460	18161	17637
59	147949	147221	146594	145646	147757
115	240755	240794	238674	237124	235993
206	73334	73295	72996	71920	72231
207	67837	66474	65902	65620	65543
208	162828	160751	160240	159048	157865
209	239611	237500	235888	235357	235517
238	357510	354609	353569	349917	346752

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	17603	7.05	6.9 - 7.1		0.771	0.900	
9	3592	9.00	8.9 - 9.1		0.780	0.900	
24	20243	24.00	23.9 - 24.1		0.780	0.900	
25	2692	25.00	24.9 - 25.1		0.779	0.900	
26	3118	26.00	25.9 - 26.1		0.777	0.900	
59	27711	59.00	58.9 - 59.1		0.765	0.900	
115	49959	115.00	114.9 - 115.1		0.727	0.900	
206	15862	206.05	205.9 - 206.1		0.781	0.900	
207	14380	207.00	206.9 - 207.1		0.743	0.900	
208	34877	208.00	207.9 - 208.1		0.752	0.900	
209	51924	209.00	208.9 - 209.1		0.754	0.900	
238	74863	238.00	237.9 - 238.1		0.773	0.900	

X% = 5 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 279 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1600	W	Carrier Gas	0.57	L/min			
RF Matching	1.76	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	5.2	V			
Extract 2	-95.0	V	Cell Entrance	-30	V			
Omega Bias	-55	V	Cell Exit	-50	V			
Deflect	10.2	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	180	V			
Energy Discrimination	5.0	V						

Calibration Blank Report

Sample Table

Sample Name	Blank
Data File Name	001CALB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:23:55-08:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Zn	66	He	21	188.28
[Pb]	206	He	22	38.94
[Pb]	207	He	11	412.30
Pb	208	He	86	26.68

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Ge	72	He	46942	0.89
Lu	175	He	1786880	3.20

Calibration Standard Report

Sample Table

Sample Name	25ppb
Data File Name	002CALS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:26:05-08:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Zn	66	He	5709	0.02
[Pb]	206	He	100971	0.00
[Pb]	207	He	93090	0.00
Pb	208	He	424656	0.00

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46095	1.67	46942	98.20	30	120	
Lu	175	He	1788873	1.76	1786880	100.11	30	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	003_ICV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:28:14-08:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	24.844	5.273	5719	4.42	25	99	
[Pb]	206	He	25.025	1.835	103092	0.85	25	100	
[Pb]	207	He	25.942	1.547	98533	1.25	25	104	
Pb	208	He	25.348	1.715	439183	0.72	25	101	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46466	0.89	46942	98.99	30	120	
Lu	175	He	1824542	1.24	1786880	102.11	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	004_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:30:23-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	24.198	4.339	5553	4.61	25	97	
[Pb]	206	He	25.296	1.605	100800	0.29	25	101	
[Pb]	207	He	25.415	2.216	93364	0.85	25	102	
Pb	208	He	25.474	1.763	426913	0.37	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46304	0.84	46942	98.64	30	120	
Lu	175	He	1764868	1.38	1786880	98.77	30	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	005_ICB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:32:32-08:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.098	45.7	43	26.6	1	
[Pb]	206	He	0.003	103.1	32	33.3	0.1	
[Pb]	207	He	0.004	76.9	27	45.1	0.1	
Pb	208	He	0.005	14.2	162	6.6	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46213	2.84	46942	98.45	30	120	
Lu	175	He	1758957	0.55	1786880	98.44	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	006_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:34:41-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.037	137.6	29	40.5	1	
[Pb]	206	He	-0.001	-158.2	17	52.9	0.1	
[Pb]	207	He	0.001	426.2	13	66.1	0.1	
Pb	208	He	0.000	-478.1	80	38.2	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45732	1.38	46942	97.42	30	120	
Lu	175	He	1795042	1.44	1786880	100.46	30	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICVS
Data File Name	007LICV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:36:50-08:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

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QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.027	8.245	257	7.23	1	103	
[Pb]	206	He	0.127	10.969	541	10.71	0.1	127	
[Pb]	207	He	0.116	23.634	447	22.77	0.1	116	
Pb	208	He	0.121	4.226	2152	3.55	0.1	121	LLICV Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46511	0.93	46942	99.08	30	120	
Lu	175	He	1805087	0.53	1786880	101.02	30	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICVS
Data File Name	008LICV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:39:10-08:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.043	27.876	260	25.93	1	104	
[Pb]	206	He	0.113	9.713	488	9.18	0.1	113	
[Pb]	207	He	0.125	14.264	484	15.27	0.1	125	
Pb	208	He	0.116	5.366	2102	6.24	0.1	116	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46417	0.28	46942	98.88	30	120	
Lu	175	He	1822100	1.29	1786880	101.97	30	120	

Sample Report

Sample Table

Sample Name	LRSTD
Data File Name	009SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:41:20-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	1016.644	1.15	226928	0.45	
[Pb]	206	He	1088.484	1.79	4340067	0.03	
[Pb]	207	He	1057.566	0.26	3888033	0.03	
Pb	208	He	1057.391	1.56	17731805	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45209	1.13	46942	96.31	30	120	
Lu	175	He	1766131	0.76	1786880	98.84	30	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	010ICSA.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:43:30-08:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	QC Flag
Zn	66	He	0.512	22.5	120	21.0	
[Pb]	206	He	0.205	6.4	772	6.2	
[Pb]	207	He	0.195	1.7	670	1.3	
Pb	208	He	0.195	4.3	3095	3.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	40199	1.99	46942	85.64	30	120	
Lu	175	He	1628079	1.18	1786880	91.11	30	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	011ICSB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:45:38-08:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	21.188	5.116	4166	4.94	25	84.8	
[Pb]	206	He	0.153	8.117	599	8.45	-1	-15.3	
[Pb]	207	He	0.137	13.777	489	12.98	-1	-13.7	
Pb	208	He	0.139	4.734	2301	4.63	-1	-13.9	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	39656	0.33	46942	84.48	30	120	
Lu	175	He	1677694	0.80	1786880	93.89	30	120	

Prep Blank (PB) Report

Sample Table

Sample Name	KQ1700722-01
Data File Name	012_PB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:47:48-08:00
Sample Type	PB
Dilution	1
Comment	5
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.296	25.6	83	18.3	1	
[Pb]	206	He	0.017	16.1	88	11.0	0.1	
[Pb]	207	He	0.012	48.7	54	37.4	0.1	
Pb	208	He	0.015	16.2	322	11.4	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	43665	1.38	46942	93.02	30	120	
Lu	175	He	1719100	1.76	1786880	96.21	30	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	KQ1700722-02
Data File Name	013_LCS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:50:01-08:00
Sample Type	LCS
Dilution	1
Comment	20
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	55.049	3.016	12409	2.82	50	110.1	
[Pb]	206	He	49.756	0.857	198076	0.63	50	99.5	
[Pb]	207	He	51.377	1.549	188560	0.70	50	102.8	
Pb	208	He	50.506	1.417	845590	0.46	50	101.0	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45582	0.59	46942	97.10	30	120	
Lu	175	He	1763190	1.19	1786880	98.67	30	120	

All Reference Sample Report

Sample Table

Sample Name	K1700524-001
Data File Name	014_ARF.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:52:11-08:00
Sample Type	AllRef
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	100.158	1.52	22980	0.44	
[Pb]	206	He	166.419	0.75	670924	0.02	
[Pb]	207	He	158.057	1.29	587493	0.03	
Pb	208	He	162.124	1.04	2748903	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46428	0.48	46942	98.91	30	120	
Lu	175	He	1785737	1.22	1786880	99.94	30	120	

Sample Report

Sample Table

Sample Name	K1700524-001L
Data File Name	015SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:54:20-08:00
Sample Type	Sample
Dilution	1
Comment	25
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	20.455	3.96	4768	0.43	
[Pb]	206	He	33.487	2.84	138271	0.02	
[Pb]	207	He	32.273	2.03	122872	0.03	
Pb	208	He	32.761	2.01	568990	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47002	0.79	46942	100.13	30	120	
Lu	175	He	1829420	2.50	1786880	102.38	30	120	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name	K1700524-001A
Data File Name	016_PDS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:56:28-08:00
Sample Type	PDS
Dilution	1
Comment	5
QC Ref File Name	014_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	145.866	1.182	33736	1.37	50	91	
[Pb]	206	He	211.673	1.405	872412	0.18	50	91	
[Pb]	207	He	203.658	1.589	773902	0.42	50	91	
Pb	208	He	209.005	1.468	3622952	0.35	50	94	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46814	0.37	46942	99.73	30	120	
Lu	175	He	1825757	1.57	1786880	102.18	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700524-001S
Data File Name	017_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:58:37-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	014_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	285.949	1.080	64690	1.20	200	93	
[Pb]	206	He	379.440	0.792	1527647	1.73	200	107	
[Pb]	207	He	367.913	1.227	1365546	0.27	200	105	
Pb	208	He	367.668	0.944	6225050	0.37	200	103	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45806	0.74	46942	97.58	30	120	
Lu	175	He	1783148	0.96	1786880	99.79	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700524-001SD
Data File Name	018_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:00:47-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	014_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	276.491	1.078	63032	1.21	200	88	
[Pb]	206	He	403.264	3.717	1606689	3.66	200	118	
[Pb]	207	He	384.499	0.967	1412444	0.47	200	113	
Pb	208	He	388.733	1.654	6513750	1.05	200	113	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46157	0.13	46942	98.33	30	120	
Lu	175	He	1764840	1.35	1786880	98.77	30	120	

Sample Report

Sample Table

Sample Name	K1700524-002
Data File Name	019SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:02:56-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	123.507	2.31	27540	0.45	
[Pb]	206	He	81.486	1.18	321687	0.03	
[Pb]	207	He	78.058	0.55	284128	0.03	
Pb	208	He	79.629	1.10	1322162	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45146	2.50	46942	96.17	30	120	
Lu	175	He	1748504	0.78	1786880	97.85	30	120	

Sample Report

Sample Table

Sample Name	K1700524-003
Data File Name	020SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:05:06-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	122.697	1.49	28242	0.43	
[Pb]	206	He	176.244	2.66	712411	0.02	
[Pb]	207	He	166.720	2.06	621409	0.03	
Pb	208	He	172.069	1.16	2925879	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46582	0.65	46942	99.23	30	120	
Lu	175	He	1790961	1.94	1786880	100.23	30	120	

Sample Report

Sample Table

Sample Name	K1700524-004
Data File Name	021SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:07:16-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	114.932	1.11	26656	0.43	
[Pb]	206	He	133.230	0.96	551753	0.02	
[Pb]	207	He	127.337	0.98	486231	0.03	
Pb	208	He	129.719	1.29	2259387	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46939	0.39	46942	99.99	30	120	
Lu	175	He	1834350	1.01	1786880	102.66	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	022_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:09:26-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.596	5.623	5934	6.24	25	102	
[Pb]	206	He	25.731	2.536	104746	1.45	25	103	
[Pb]	207	He	25.658	2.152	96299	1.01	25	103	
Pb	208	He	25.630	2.160	438828	0.92	25	103	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46780	0.70	46942	99.66	30	120	
Lu	175	He	1803071	1.26	1786880	100.91	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	023_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:11:35-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.073	58.2	38	27.0	1	
[Pb]	206	He	0.011	38.3	69	24.4	0.1	
[Pb]	207	He	0.009	17.5	44	11.5	0.1	
Pb	208	He	0.009	26.6	241	20.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46522	1.17	46942	99.11	30	120	
Lu	175	He	1820513	2.92	1786880	101.88	30	120	

Sample Report

Sample Table

Sample Name	K1700524-005
Data File Name	024SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:13:44-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	130.903	0.58	30517	0.43	
[Pb]	206	He	142.486	1.26	586520	0.02	
[Pb]	207	He	135.571	2.02	514469	0.03	
Pb	208	He	138.712	1.66	2401313	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47186	1.79	46942	100.52	30	120	
Lu	175	He	1823544	2.42	1786880	102.05	30	120	

Sample Report

Sample Table

Sample Name	K1700528-001
Data File Name	025SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:15:53-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	71.033	2.33	16521	0.43	
[Pb]	206	He	48.214	1.46	196333	0.02	
[Pb]	207	He	45.029	2.13	169047	0.03	
Pb	208	He	46.358	1.35	793958	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47047	0.18	46942	100.22	30	120	
Lu	175	He	1803715	1.46	1786880	100.94	30	120	

Sample Report

Sample Table

Sample Name	K1700528-002
Data File Name	026SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:18:02-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	80.240	2.66	19007	0.42	
[Pb]	206	He	238.289	2.02	968430	0.02	
[Pb]	207	He	229.281	1.36	859199	0.03	
Pb	208	He	233.781	1.15	3996351	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47919	0.38	46942	102.08	30	120	
Lu	175	He	1800431	1.77	1786880	100.76	30	120	

Sample Report

Sample Table

Sample Name	K1700528-003
Data File Name	027SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:20:11-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	73.395	1.12	16755	0.44	
[Pb]	206	He	416.568	0.90	1692114	0.02	
[Pb]	207	He	382.540	0.65	1432688	0.03	
Pb	208	He	393.208	0.91	6717494	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46179	0.09	46942	98.37	30	120	
Lu	175	He	1799131	0.49	1786880	100.69	30	120	

Sample Report

Sample Table

Sample Name	K1700528-004
Data File Name	028SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:22:21-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	55.437	1.05	13311	0.42	
[Pb]	206	He	43.488	1.81	181403	0.02	
[Pb]	207	He	41.020	1.88	157758	0.03	
Pb	208	He	41.883	1.83	734800	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48550	0.68	46942	103.43	30	120	
Lu	175	He	1847564	0.82	1786880	103.40	30	120	

Sample Report

Sample Table

Sample Name	K1700528-005
Data File Name	029SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:24:32-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	58.579	1.20	13830	0.42	
[Pb]	206	He	53.091	0.53	219256	0.02	
[Pb]	207	He	50.189	1.45	191102	0.03	
Pb	208	He	51.545	1.15	895312	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47744	0.33	46942	101.71	30	120	
Lu	175	He	1829019	0.19	1786880	102.36	30	120	

Sample Report

Sample Table

Sample Name	K1700528-006
Data File Name	030SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:26:41-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	88.347	1.68	21301	0.41	
[Pb]	206	He	541.312	2.14	2282138	0.02	
[Pb]	207	He	511.029	2.22	1986700	0.03	
Pb	208	He	512.670	1.20	9090678	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48786	0.69	46942	103.93	30	120	
Lu	175	He	1867493	0.97	1786880	104.51	30	120	

Sample Report

Sample Table

Sample Name	K1700528-007
Data File Name	031SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:28:50-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

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QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	124.979	0.39	29818	0.42	
[Pb]	206	He	1212.935	2.77	5027497	0.02	>LDR
[Pb]	207	He	1146.117	1.38	4381271	0.03	>LDR
~~Pb~~	~~208~~	He	1161.793	2.60	20253194	0.01	>LDR

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QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48289	1.87	46942	102.87	30	120	
Lu	175	He	1836641	2.39	1786880	102.78	30	120	

Sample Report

Sample Table

Sample Name	K1700528-008
Data File Name	032SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:31:01-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	120.366	2.12	28533	0.42	
[Pb]	206	He	122.661	0.91	516623	0.02	
[Pb]	207	He	117.873	0.56	457724	0.03	
Pb	208	He	119.504	0.58	2116898	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47979	0.89	46942	102.21	30	120	
Lu	175	He	1865436	0.67	1786880	104.40	30	120	

Sample Report

Sample Table

Sample Name	K1700528-009
Data File Name	033SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:33:10-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	71.675	3.14	16631	0.43	
[Pb]	206	He	114.600	0.37	470709	0.02	
[Pb]	207	He	109.162	0.34	413394	0.03	
Pb	208	He	111.703	0.41	1929683	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46943	1.95	46942	100.00	30	120	
Lu	175	He	1819165	0.81	1786880	101.81	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	034_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:35:19-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.600	1.671	6230	2.28	25	102	
[Pb]	206	He	25.210	1.097	107406	0.61	25	101	
[Pb]	207	He	24.741	2.202	97170	1.02	25	99	
Pb	208	He	24.809	1.616	444513	0.13	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49111	0.62	46942	104.62	30	120	
Lu	175	He	1886918	1.71	1786880	105.60	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	035_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:37:29-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.051	145.6	33	52.0	1	
[Pb]	206	He	0.015	31.2	89	22.6	0.1	
[Pb]	207	He	0.019	11.0	84	9.9	0.1	
Pb	208	He	0.016	13.1	376	9.8	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47712	0.50	46942	101.64	30	120	
Lu	175	He	1877643	0.42	1786880	105.08	30	120	

Sample Report

Sample Table

Sample Name	K1700530-001
Data File Name	036SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:39:38-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	132.119	1.45	30893	0.43	
[Pb]	206	He	216.337	1.66	880285	0.02	
[Pb]	207	He	206.221	2.41	773619	0.03	
Pb	208	He	210.184	1.35	3597260	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47330	1.58	46942	100.83	30	120	
Lu	175	He	1802628	1.97	1786880	100.88	30	120	

Sample Report

Sample Table

Sample Name	K1700530-002
Data File Name	037SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:41:48-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	84.342	1.81	17899	0.47	
[Pb]	206	He	7204.827	0.83	28827293	0.02	>LDR
[Pb]	207	He	6373.541	1.00	23511837	0.03	>LDR
~~Pb~~	~~208~~	~~He~~	~~6631.892~~	~~0.55~~	~~111602213~~	~~0.01~~	~~>LDR~~

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QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	42942	1.08	46942	91.48	30	120	
Lu	175	He	1772279	1.87	1786880	99.18	30	120	

Sample Report

Sample Table

Sample Name	K1700530-003
Data File Name	038SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:43:57-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	119.335	1.49	24749	0.48	
[Pb]	206	He	536.461	2.77	2104816	0.03	
[Pb]	207	He	497.119	0.59	1798929	0.03	
Pb	208	He	502.707	1.24	8297403	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	41973	1.13	46942	89.41	30	120	
Lu	175	He	1738535	2.22	1786880	97.29	30	120	

Sample Report

Sample Table

Sample Name	K1700528-007
Data File Name	039SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:46:07-08:00
Sample Type	Sample
Dilution	1
Comment	100
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	5.656	4.13	1330	0.43	
[Pb]	206	He	54.448	1.96	225754	0.02	
[Pb]	207	He	52.565	2.79	200913	0.03	
Pb	208	He	53.226	2.37	928124	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46890	0.95	46942	99.89	30	120	
Lu	175	He	1836936	2.69	1786880	102.80	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	040_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:48:16-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.398	2.261	5829	1.91	25	102	
[Pb]	206	He	26.054	3.099	106898	0.84	25	104	
[Pb]	207	He	25.504	2.752	96477	0.28	25	102	
Pb	208	He	25.609	2.847	441916	0.27	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46318	0.78	46942	98.67	30	120	
Lu	175	He	1817938	2.79	1786880	101.74	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	041_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:52:06-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.088	50.0	41	24.8	1	
[Pb]	206	He	0.027	14.4	136	13.5	0.1	
[Pb]	207	He	0.032	16.4	136	16.4	0.1	
Pb	208	He	0.028	6.6	573	7.3	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46453	0.51	46942	98.96	30	120	
Lu	175	He	1836423	1.68	1786880	102.77	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	042LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:54:16-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.023	20.998	251	16.91	1	102	
[Pb]	206	He	0.130	14.611	546	15.51	0.1	130	
[Pb]	207	He	0.141	9.538	534	10.84	0.1	141	
Pb	208	He	0.141	3.794	2481	4.83	0.1	141	LLCCV Failed

We 1.0 ppb
3/12/17

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45792	2.58	46942	97.55	30	120	
Lu	175	He	1785277	1.69	1786880	99.91	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	043LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:56:25-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.090	14.003	266	13.19	1	109	
[Pb]	206	He	0.128	11.529	549	10.89	0.1	128	
[Pb]	207	He	0.137	3.071	531	3.68	0.1	137	
Pb	208	He	0.136	8.018	2443	7.57	0.1	136	LLCCV Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45548	0.27	46942	97.03	30	120	
Lu	175	He	1821100	1.00	1786880	101.92	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	044LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:01:01-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	0.841	1.934	209	1.84	1	84	
[Pb]	206	He	0.122	6.566	526	5.39	0.1	122	
[Pb]	207	He	0.100	7.207	392	5.97	0.1	100	
Pb	208	He	0.112	4.311	2021	3.34	0.1	112	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45412	0.10	46942	96.74	30	120	
Lu	175	He	1822486	1.02	1786880	101.99	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	045_QC1.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:03:10-08:00
Sample Type	QC1
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

WRONG QC TABLE

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.386	10.931	333	9.54	2	69	QC1 Main CR1 Failed
[Pb]	206	He	1.165	1.980	4745	1.13	0.2	583	QC1 Main CR1 Failed
[Pb]	207	He	1.165	2.641	4367	3.12	0.2	583	QC1 Main CR1 Failed
Pb	208	He	1.166	0.550	19976	1.27	0.2	583	QC1 Main CR1 Failed

11790

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45747	1.35	46942	97.45	30	120	
Lu	175	He	1795705	0.99	1786880	100.49	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	046_QC1.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:05:20-08:00
Sample Type	QC1
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

1/25/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.594	18.766	381	18.21	2	80	
[Pb]	206	He	1.194	2.412	4870	1.71	0.2	597	QC1 Main CR1 Failed
[Pb]	207	He	1.174	4.436	4407	4.82	0.2	587	QC1 Main CR1 Failed
Pb	208	He	1.172	1.589	20105	2.13	0.2	586	QC1 Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45773	0.52	46942	97.51	30	120	
Lu	175	He	1798958	0.97	1786880	100.68	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	047_QC1.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:08:20-08:00
Sample Type	QC1
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

1/25/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.300	25.679	316	25.36	1	130	
[Pb]	206	He	1.158	2.739	4741	1.30	1	116	
[Pb]	207	He	1.222	1.677	4603	0.11	1	122	
Pb	208	He	1.192	2.341	20511	1.31	1	119	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45848	2.24	46942	97.67	30	120	
Lu	175	He	1805233	1.67	1786880	101.03	30	120	

Sample Report

Sample Table

Sample Name	K1700530-002
Data File Name	048SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:11:27-08:00
Sample Type	Sample
Dilution	1
Comment	500
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	0.891	3.25	226	0.40	
[Pb]	206	He	56.163	2.06	232148	0.02	
[Pb]	207	He	51.175	1.45	195036	0.03	
Pb	208	He	52.972	1.44	920944	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46519	0.23	46942	99.10	30	120	
Lu	175	He	1831006	1.56	1786880	102.47	30	120	

Prep Blank (PB) Report

Sample Table

Sample Name	KQ1700728-01
Data File Name	049_PB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:13:36-08:00
Sample Type	PB
Dilution	1
Comment	5
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.353	15.0	103	12.9	1	
[Pb]	206	He	0.019	31.4	102	24.9	0.1	
[Pb]	207	He	0.028	4.1	118	3.3	0.1	
Pb	208	He	0.022	9.6	476	8.4	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47146	1.21	46942	100.43	30	120	
Lu	175	He	1838324	0.50	1786880	102.88	30	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	KQ1700728-02
Data File Name	050_LCS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:15:45-08:00
Sample Type	LCS
Dilution	1
Comment	20
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	56.277	0.337	13257	1.31	50	112.6	
[Pb]	206	He	48.664	0.738	206268	0.52	50	97.3	
[Pb]	207	He	49.772	1.182	194498	0.76	50	99.5	
Pb	208	He	49.049	0.927	874370	0.47	50	98.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47635	1.16	46942	101.48	30	120	
Lu	175	He	1877289	1.06	1786880	105.06	30	120	

All Reference Sample Report

Sample Table

Sample Name	K1700531-001
Data File Name	051_ARF.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:17:54-08:00
Sample Type	AllRef
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	230.077	2.10	52674	0.44	
[Pb]	206	He	63.936	0.45	262331	0.02	
[Pb]	207	He	60.911	0.28	230424	0.03	
Pb	208	He	62.256	0.58	1074315	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46366	2.54	46942	98.77	30	120	
Lu	175	He	1817228	0.60	1786880	101.70	30	120	

Sample Report

Sample Table

Sample Name	K1700531-001L
Data File Name	052SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:20:04-08:00
Sample Type	Sample
Dilution	1
Comment	25
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	47.906	2.57	11246	0.43	
[Pb]	206	He	13.762	3.11	57074	0.02	
[Pb]	207	He	13.196	2.20	50458	0.03	
Pb	208	He	13.424	3.04	234148	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47465	1.31	46942	101.11	30	120	
Lu	175	He	1837086	2.49	1786880	102.81	30	120	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name	K1700531-001A
Data File Name	053_PDS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:22:14-08:00
Sample Type	PDS
Dilution	1
Comment	5
QC Ref File Name	051_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	272.708	3.000	63703	1.14	50	85	
[Pb]	206	He	114.467	1.432	468933	0.38	50	101	
[Pb]	207	He	110.876	1.265	418796	0.31	50	100	
Pb	208	He	112.557	1.272	1939390	0.67	50	101	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47315	2.20	46942	100.79	30	120	
Lu	175	He	1814707	1.57	1786880	101.56	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700531-001S
Data File Name	054_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:24:22-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	051_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

X PDS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	343.451	1.993	80849	0.48	200	57	Flag
[Pb]	206	He	236.550	1.578	980059	1.65	200	86	
[Pb]	207	He	238.819	1.865	912222	1.26	200	89	
Pb	208	He	238.954	2.482	4163021	0.66	200	88	

Y

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47677	2.05	46942	101.57	30	120	
Lu	175	He	1835658	3.14	1786880	102.73	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700531-001SD
Data File Name	055_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:26:31-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	051_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

PDS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	346.888	1.003	79724	1.64	200	58	Flag
[Pb]	206	He	233.012	0.676	948737	0.41	200	85	
[Pb]	207	He	233.960	0.551	878314	0.72	200	87	
Pb	208	He	234.046	0.472	4008004	0.70	200	86	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46534	0.73	46942	99.13	30	120	
Lu	175	He	1803433	0.57	1786880	100.93	30	120	

Sample Report

Sample Table

Sample Name	K1700531-002
Data File Name	056SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:28:41-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	173.758	1.74	41128	0.42	
[Pb]	206	He	47.366	0.21	197250	0.02	
[Pb]	207	He	44.954	0.89	172588	0.03	
Pb	208	He	46.006	0.99	805720	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47921	1.16	46942	102.09	30	120	
Lu	175	He	1844308	1.13	1786880	103.21	30	120	

Sample Report

Sample Table

Sample Name	K1700531-003
Data File Name	057SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:30:49-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	199.878	1.63	48450	0.41	
[Pb]	206	He	99.726	1.57	420172	0.02	
[Pb]	207	He	94.462	1.71	366936	0.03	
Pb	208	He	97.334	1.64	1724782	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49078	1.10	46942	104.55	30	120	
Lu	175	He	1866429	2.01	1786880	104.45	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	058_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:32:58-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.734	2.739	6308	3.96	25	103	
[Pb]	206	He	25.451	0.725	108798	0.39	25	102	
[Pb]	207	He	25.637	2.229	101025	1.23	25	103	
Pb	208	He	25.433	1.191	457244	0.31	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49461	1.78	46942	105.37	30	120	
Lu	175	He	1893108	0.99	1786880	105.94	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	059_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:35:08-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.081	22.5	41	9.4	1	
[Pb]	206	He	0.018	13.8	101	10.1	0.1	
[Pb]	207	He	0.015	5.6	72	5.3	0.1	
Pb	208	He	0.017	13.3	406	8.3	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48450	1.89	46942	103.21	30	120	
Lu	175	He	1911030	2.26	1786880	106.95	30	120	

Sample Report

Sample Table

Sample Name	K1700531-004
Data File Name	060SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:37:20-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	245.621	1.61	58499	0.42	
[Pb]	206	He	91.106	1.75	387763	0.02	
[Pb]	207	He	86.873	1.41	340913	0.03	
Pb	208	He	88.881	1.18	1591136	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48224	1.31	46942	102.73	30	120	
Lu	175	He	1885411	1.56	1786880	105.51	30	120	

Sample Report

Sample Table

Sample Name	K1700531-005
Data File Name	061SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:39:28-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	129.785	0.94	32376	0.40	
[Pb]	206	He	91.133	3.25	391897	0.02	
[Pb]	207	He	86.104	1.10	341479	0.03	
Pb	208	He	88.700	2.33	1604427	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	50490	0.42	46942	107.56	30	120	
Lu	175	He	1905365	1.87	1786880	106.63	30	120	

Sample Report

Sample Table

Sample Name	K1700531-006
Data File Name	062SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:41:37-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	178.267	2.44	42212	0.42	
[Pb]	206	He	45.055	2.62	189329	0.02	
[Pb]	207	He	43.383	3.10	168070	0.03	
Pb	208	He	44.080	2.75	779043	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47940	0.88	46942	102.13	30	120	
Lu	175	He	1861496	1.44	1786880	104.18	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	063_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:43:47-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.463	1.750	6416	0.60	25	102	
[Pb]	206	He	25.061	0.424	110812	1.39	25	100	
[Pb]	207	He	24.706	1.153	100704	0.79	25	99	
Pb	208	He	24.801	1.009	461178	0.81	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	50862	2.07	46942	108.35	30	120	
Lu	175	He	1958175	1.82	1786880	109.59	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	064_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:45:57-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.130	22.8	54	12.7	1	
[Pb]	206	He	0.008	42.2	59	26.8	0.1	
[Pb]	207	He	0.017	7.3	81	8.6	0.1	
Pb	208	He	0.015	15.1	362	12.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	50027	0.83	46942	106.57	30	120	
Lu	175	He	1903289	2.45	1786880	106.51	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	065LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:48:06-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.167	11.140	306	10.14	1	117	
[Pb]	206	He	0.107	17.197	479	14.10	0.1	107	
[Pb]	207	He	0.098	13.717	400	13.02	0.1	98	
~~Pb~~	~~208~~	~~He~~	~~0.106~~	~~9.840~~	~~1992~~	~~8.09~~	~~0.1~~	~~106~~	

2/1/17

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49194	0.22	46942	104.80	30	120	
Lu	175	He	1894052	2.45	1786880	106.00	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	066LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:50:16-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

1/26/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.186	9.275	304	7.77	1	119	
[Pb]	206	He	0.116	0.799	522	2.24	0.1	116	
[Pb]	207	He	0.098	7.354	402	8.78	0.1	98	
[Pb]	208	He	0.103	1.886	1965	1.97	0.1	103	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48309	0.85	46942	102.91	30	120	
Lu	175	He	1908518	1.63	1786880	106.81	30	120	

Sample Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	067SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:52:26-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	3.205	4.38	790	0.41	
[Pb]	206	He	1.124	3.94	4702	0.02	
[Pb]	207	He	1.102	5.99	4239	0.03	
Pb	208	He	1.094	4.36	19233	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48558	0.93	46942	103.44	30	120	
Lu	175	He	1844160	1.98	1786880	103.21	30	120	

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: Mr. Garett Ferguson

February 14, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear Mr. Ferguson,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on February 2, 2017. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #38037:

SDG #	**Fraction:**
K1700524, K1700528 K1700530, K1700531	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

[redacted]

Pei Geng
Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #38037 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	Pb (6020A)		Zn (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	K1700524	02/02/17	02/16/17	0	5	-	-																														
B	K1700528	02/02/17	02/16/17	0	9	-	-																														
C	K1700530	02/02/17	02/16/17	0	3	-	-																														
D	K1700531	02/02/17	02/16/17	-	-	0	6																														
Total	T/PG			0	17	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23

Shaded cells indicate Level IV validation (all other cells are ADR validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\38037ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDG: K1700524, K1700528, K1700530, and K1700531

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

February 10, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and Level IV data validation results for samples collected during the January 2017 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by Environmental Protection Agency (EPA) SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilutions, laboratory control sample (LCS), field duplicates, split duplicate samples, and internal standards. Approximately 13 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprises a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software.

VII. Field Blanks

No field blanks were identified in these SDGs.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of zinc in one MS/MSD pair. No data were qualified for zinc MS/MSD %R outside QC limits when the serial dilution was within QC limits.

IX. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The analysis criteria

were met.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XII. Field Duplicates/Split Samples

Three field duplicate pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of one duplicate pair for lead. The associated sample results were qualified as detected estimated (J). The field duplicate result comparisons are provided in Enclosure I.

Samples FTBL-SS-B066-0-6-011617 and FTBL-SS-B066-0-6-011617-QA (from SDG FA40440) were identified as split duplicate samples. No metals were detected in any of the split samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B066-0-6-011617 (SDG: K1700528)	FTBL-SS-B066-0-6-011617-QA (SDG: FA40440)		
Lead	18.6	48.8	90	J (all detects)

XIII. Internal Standards

All internal standard areas and percent recoveries were within QC limits.

XIV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to field duplicate RPD and split duplicate sample RPD, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Jan-2017	FD-011617-2	K1700524-005	FD	EPA 3050B	6020A	III
16-Jan-2017	FD-011617-1	K1700528-009	FD	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B066-0-6-011617	K1700528-001	FD	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B065-0-6-011617	K1700528-002	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B064-0-6-011617	K1700528-003	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B061-0-6-011617	K1700528-004	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B062-0-6-011617	K1700528-005	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B063-0-6-011617	K1700528-006	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B072-0-6-011617	K1700528-007	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B071-0-6-011617	K1700528-008	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B069-0-6-011617	K1700524-001	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B069-0-6-011617MS	KQ1700722-04	MS	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B068-0-6-011617	K1700524-002	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B067-0-6-011617	K1700524-003	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B070-0-6-011617	K1700524-004	N	EPA 3050B	6020A	III
17-Jan-2017	FD-011717-1	K1700531-006	FD	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SS-B073-0-6-011717	K1700530-001	N	EPA 3050B	6020A	IV
17-Jan-2017	FTBL-SS-B075-0-6-011717	K1700530-002	N	EPA 3050B	6020A	IV
17-Jan-2017	FTBL-SS-B074-0-6-011717	K1700530-003	N	EPA 3050B	6020A	IV
17-Jan-2017	FTBL-SED-072-0-6-011717	K1700531-002	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-073-0-6-011717	K1700531-001	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-073-0-6-011717MS	KQ1700728-04	MS	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-070-0-6-011717	K1700531-003	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-071-0-6-011717	K1700531-004	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-069-0-6-011717	K1700531-005	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1700524, K1700528, K1700530,

Laboratory: ALS_K

EDD Filename: K1700524_SEDD2A_rev, K1700528_SEDD2A_rev, K1700530_SEDD2A_rev, K1700531_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1700528

Method Category: **METALS**

Method: **6020A** ***Matrix:*** **Soil**

Sample ID: **FD-011617-1** ***Collected:*** **1/16/2017 12:00:00 AM** ***Analysis Type:*** **Initial** ***Dilution:*** **5**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
LEAD	50.0	=	0.04	LOD	0.45	LOQ	mg/Kg	J	Fd

Sample ID: **FTBL-SS-B066-0-6-011617** ***Collected:*** **1/16/2017 2:24:00 PM** ***Analysis Type:*** **Initial** ***Dilution:*** **5**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
LEAD	18.6	=	0.04	LOD	0.40	LOQ	mg/Kg	J	Fd

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1700524, K1700528, K1700530,

Laboratory: ALS_K

EDD Filename: K1700524_SEDD2A_rev, K1700528_SEDD2A_rev, K1700530_SEDD2A_rev, K1700531_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

Reason Code	*Description*
Fd	Field Duplicate Precision
Ms	Matrix Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

K1700524

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700524 **Laboratory: ALS_K**

EDD Filename: K1700524_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B070-0-6-011617 (Dry)	FD-011617-2 (Dry)			
LEAD	59.7	62.7	5	50.00	No Qualifiers Applied

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 38037A4a
SDG #: K1700524
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 8/30/17
Page: 1 of 1
Reviewer: CA
2nd Reviewer: KK

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data		

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B069-0-6-011617	K1700524-001	Soil	01/16/17
2	FTBL-SS-B068-0-6-011617	K1700524-002	Soil	01/16/17
3	FTBL-SS-B067-0-6-011617	K1700524-003	Soil	01/16/17
4	FTBL-SS-B070-0-6-011617	K1700524-004	Soil	01/16/17
5	FD-011617-2	K1700524-005	Soil	01/16/17
6	FTBL-SS-B069-0-6-011617MS	K1700524-001MS	Soil	01/16/17
7	FTBL-SS-B069-0-6-011617MSD	K1700524-001MSD	Soil	01/16/17
8				
9				
10				
11				
12				

Notes:

Quality Control
Outlier Reports

K1700528

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700528 **Laboratory: ALS_K**

EDD Filename: K1700528_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B066-0-6-011617 (Dry)	**FD-011617-1 (Dry)**			
LEAD	18.6	50.0	92	50.00	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 38037B4a
SDG #: K1700528
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 2/8/17
Page: 1 of 1
Reviewer: A
2nd Reviewer: KK

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D (from K1700524)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	SW	Split = 1, FTBL-SS-B066-0-6-011617-QA (from FA4044O)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B066-0-6-011617	K1700528-001	Soil	01/16/17
2	FTBL-SS-B065-0-6-011617	K1700528-002	Soil	01/16/17
3	FTBL-SS-B064-0-6-011617	K1700528-003	Soil	01/16/17
4	FTBL-SS-B061-0-6-011617	K1700528-004	Soil	01/16/17
5	FTBL-SS-B062-0-6-011617	K1700528-005	Soil	01/16/17
6	FTBL-SS-B063-0-6-011617	K1700528-006	Soil	01/16/17
7	FTBL-SS-B072-0-6-011617	K1700528-007	Soil	01/16/17
8	FTBL-SS-B071-0-6-011617	K1700528-008	Soil	01/16/17
9	FD-011617-1	K1700528-009	Soil	01/16/17
10				
11				
12				

Notes:

LDC#: 38037B4b

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: OV

2nd Reviewer: KK

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	
	1	FTBL-SS-B066-0-6-011617-QA		
Lead	18.6	48.8	90	Jdet/A

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\38037B4b.wpd

Quality Control Outlier Reports

K1700530

(No Outliers)

Quality Control
Outlier Reports

K1700531

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1700531 **Laboratory: ALS_K**

EDD Filename: K1700531_SEDD2A **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SED-073-0-6-011717MS (Dry) FTBL-SED-073-0-6-011717MSD (Dry) (FTBL-SED-073-0-6-011717)	ZINC	76	78	82.00-119.00	-	ZINC	No Qual Serial Dilution OK

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700531 **Laboratory: ALS_K**

EDD Filename: K1700531_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SED-072-0-6-011717	FD-011717-1 (Dry)			
ZINC	77.7	80.6	4	50.00	No Qualifiers Applied

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 38037D4a
SDG #: K1700531
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 2/8/17
Page: 1 of 3
Reviewer: AV
2nd Reviewer: KK

METHOD: ~~Lead~~ Zinc (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D: Zn %R out, SD %D in, no quals
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SED-073-0-6-011717	K1700531-001	Soil	01/17/17
2	FTBL-SED-072-0-6-011717	K1700531-002	Soil	01/17/17
3	FTBL-SED-070-0-6-011717	K1700531-003	Soil	01/17/17
4	FTBL-SED-071-0-6-011717	K1700531-004	Soil	01/17/17
5	FTBL-SED-069-0-6-011717	K1700531-005	Soil	01/17/17
6	FD-011717-1	K1700531-006	Soil	01/17/17
7	FTBL-SED-073-0-6-011717MS	K1700531-001MS	Soil	01/17/17
8	FTBL-SED-073-0-6-011717MSD	K1700531-001MSD	Soil	01/17/17
9				
10				
11				
12				

Notes:

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: February 8, 2017

Parameters: Lead

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1700530

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-SS-B073-0-6-011717	K1700530-001	Soil	01/17/17
FTBL-SS-B075-0-6-011717	K1700530-002	Soil	01/17/17
FTBL-SS-B074-0-6-011717	K1700530-003	Soil	01/17/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Lead - Data Qualification Summary - SDG K1700530

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Lead - Laboratory Blank Data Qualification Summary - SDG K1700530

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Lead - Field Blank Data Qualification Summary - SDG K1700530

No Sample Data Qualified in this SDG

LDC #: 38037C4a
SDG #: K1700530
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 2/8/17
Page: 1 of 1
Reviewer: CA
2nd Reviewer: KK

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	~~ICB/CCB only~~ CA
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D (from K1700524)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B073-0-6-011717	K1700530-001	Soil	01/17/17
2	FTBL-SS-B075-0-6-011717	K1700530-002	Soil	01/17/17
3	FTBL-SS-B074-0-6-011717	K1700530-003	Soil	01/17/17
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

)C #: 380371C4a

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: KR

Method: Metals (EPA SW 846 Method 6010/6020/7000)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were the low standard checks within 70-130%	✓			
Were all initial calibration correlation coefficients within limits as specified by the method?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?			✓	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓	✓		
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.		✓	✓	
Target analytes were detected in the field blanks.				

LDC #: 50037C4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: CR
2nd Reviewer: KK

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV (11:28)	ICP/MS (Initial calibration)	Pb	25.348	25.0	~~101~~	~~101~~	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV (12:35)	ICP/MS (Continuing calibration)	Pb	24.809	25.0	99	99	Y
	CVAA (Continuing calibration)						

Comments:

CALCLC.4C4

LDC #: 38037C4

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: AR
2nd Reviewer: KK

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{Found}{True} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
N	ICP interference check						
LCS	Laboratory control sample		101.012	100	101	101	Y
N	Matrix spike		(SSR-SR)				
N	Duplicate						
N	ICP serial dilution						

Comments: _____

LDC #: 38032C4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 02
2nd reviewer: KK

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Pb were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{10mL(5)(210.184\mu g/L)}{0.88(1.383g)(1000)} = 86.35 mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Pb	86.4	86.4	Y
	2		2430	2430	
	3		253	253	

Note:

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February 01, 2017

Analytical Report for Service Request No: K1700528

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

RE: Closed Castner Firing Range / 06261038.0001.00400

Dear (b) (6)

Enclosed are the results of the sample(s) submitted to our laboratory January 18, 2017
For your reference, these analyses have been assigned our service request number **K1700528.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at gregory.salata@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

(b) (6)
Senior Project
Manager

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Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
Chain of Custody
Total Solids
Metals
Raw Data
    Total Solids
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1700528
Project:	Closed Castner Firing Range/ 06261038.0001.00400	**Date Received:**	01/18/17
Sample Matrix:	Soil		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Nine soil samples were received for analysis at ALS Environmental on 01/18/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by__ (b) (6) _____

Chain of Custody

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Chain of Custody

K1700528

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068
Columbia Analytical Services, Inc.
Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.:

Project Manager:	(b) (6)	**Bill to:**	PO Number: 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
P.O. Number:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present		
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice
Cooler Custody Seals:	Yes	No	N/A	Total Containers:
Sample Custody Seals:	Yes	No	N/A	

REQUESTED ANALYSIS

TAT

Standard
Same Day *** [redacted]
Next Day ***
5 Day
EDD

*** Please call fo availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Lead	Comments
FTBL-SS- B066-0-6-011617	S	1/16/17	1424		1	X	
FTBL-SS- B065-0-6-011617	S	1/16/17	1428		1	X	
FTBL-SS- B064-0-6-011617	S	1/16/17	1432		1	X	
FTBL-SS- B061-0-6-011617	S	1/16/17	1436		1	X	
FTBL-SS- B062-0-6-011617	S	1/16/17	1440		1	X	
FTBL-SS- B063-0-6-011617	S	1/16/17	1444		1	X	
FTBL-SS- B072-0-6-011617	S	1/16/17	1551		1	X	
FTBL-SS- B071-0-6-011617	S	1/16/17	1555		1	X	
[redacted] FD-011617-1	S	1/16/17			1	X	
[redacted]	S				1		
[redacted]	S				1		

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6)		1/17/17 1700	(b) (6)		1/18/17 1050

PC_____

Cooler Receipt and Preservation Form

Client Arcadis Service Request K17 00528

Received: 1/18/17 Opened: 1/18/17 By: CG Unloaded: 1/18/17 By: CG

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 - Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number NA	Filed
-0.6	-0.6	0.1	0.1	0.0	370		8026 5614 5193	

4. Packing material: *Inserts* *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:_____

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17
Sample Matrix:	Soil	**Date Received:**	01/18/17
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	Air Dried

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
FTBL-SS-B066-0-6-011617	K1700528-001	**88.3**	-	-	1	01/20/17 16:25	
FTBL-SS-B065-0-6-011617	K1700528-002	**90.7**	-	-	1	01/20/17 16:25	
FTBL-SS-B064-0-6-011617	K1700528-003	**88.8**	-	-	1	01/20/17 16:25	
FTBL-SS-B061-0-6-011617	K1700528-004	**93.0**	-	-	1	01/20/17 16:25	
FTBL-SS-B062-0-6-011617	K1700528-005	**91.2**	-	-	1	01/20/17 16:25	
FTBL-SS-B063-0-6-011617	K1700528-006	**86.3**	-	-	1	01/20/17 16:25	
FTBL-SS-B072-0-6-011617	K1700528-007	**91.0**	-	-	1	01/20/17 16:25	
FTBL-SS-B071-0-6-011617	K1700528-008	**88.8**	-	-	1	01/20/17 16:25	
FD-011617-1	K1700528-009	**92.1**	-	-	1	01/20/17 16:25	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17
Sample Matrix:	Soil	**Date Received:**	01/18/17
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	Air Dried

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1700524-002DUP	-	87.6	87.6	87.6	<1	20	01/20/17
FTBL-SS-B072-0-6-011617	K1700528-007DUP	-	91.0	90.2	90.6	<1	20	01/20/17
Batch QC	K1700531-005DUP	-	88.5	87.8	88.2	<1	20	01/20/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1700560-002DUP	-	71.0	71.7	71.4	<1	20	01/20/17
Batch QC	K1700577-002DUP	-	84.9	88.4	86.7	4	20	01/20/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 14:24
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B066-0-6-011617	**Basis:**	Dry
Lab Code:	K1700528-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**18.6**	mg/Kg	0.40	0.04	0.02	5	01/25/17 12:15	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 14:28
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B065-0-6-011617	**Basis:**	Dry
Lab Code:	K1700528-002		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**103**	mg/Kg	0.44	0.04	0.02	5	01/25/17 12:18	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 14:32
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B064-0-6-011617	**Basis:**	Dry
Lab Code:	K1700528-003		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**162**	mg/Kg	0.41	0.04	0.02	5	01/25/17 12:20	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 14:36
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B061-0-6-011617	**Basis:**	Dry
Lab Code:	K1700528-004		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**20.1**	mg/Kg	0.48	0.05	0.02	5	01/25/17 12:22	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 14:40
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B062-0-6-011617	**Basis:**	Dry
Lab Code:	K1700528-005		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**23.7**	mg/Kg	0.46	0.05	0.02	5	01/25/17 12:24	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 14:44
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B063-0-6-011617	**Basis:**	Dry
Lab Code:	K1700528-006		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**262**	mg/Kg	0.51	0.05	0.02	5	01/25/17 12:26	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 15:51
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B072-0-6-011617	**Basis:**	Dry
Lab Code:	K1700528-007		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**483**	mg/Kg	9.1	0.9	0.4	100	01/25/17 12:46	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17 15:55
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B071-0-6-011617	**Basis:**	Dry
Lab Code:	K1700528-008		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**55.9**	mg/Kg	0.47	0.05	0.02	5	01/25/17 12:31	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/16/17
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FD-011617-1	**Basis:**	Dry
Lab Code:	K1700528-009		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**50.0**	mg/Kg	0.45	0.04	0.02	5	01/25/17 12:33	01/24/17	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	KQ1700722-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	ND U	mg/Kg	0.5	0.05	0.02	5	01/25/17 11:47	01/24/17	

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700528
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	N/A
Sample Matrix:	Soil	**Date Received:**	N/A
		Date Analyzed:	01/25/17
		Date Extracted:	01/24/17

Duplicate Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/Kg
Lab Code:	K1700524-001	**Basis:**	Dry
Analysis Method:	6020A		
Prep Method:	EPA 3050B		

		Matrix Spike			Duplicate Matrix Spike					
		KQ1700722-03			KQ1700722-04					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Lead	68.4	147	79.8	98	166	85.3	114	84-118	12	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 1/30/2017 2:13:34 PM Superset Reference:

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range/06261038.0001.00400
Sample Matrix: Soil

Service Request: K1700528
Date Analyzed: 01/25/17

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis: Dry

Lab Control Sample
KQ1700722-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Lead	6020A	101	100	101	84-118

Prep Summary Report

Client: ARCADIS U.S., Inc. **Service Request:**K1700528
Project: Closed Castner Firing Range/06261038.0001.00400
Sample Matrix: Soil

Metals

Prep Method: EPA 3050B **Extraction Lot:**280220
Analytical Method: 6020A

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
FTBL-SS-B066-0-6-011617	K1700528-001	1/16/17	1/18/17	1.411 g	100 mL	
FTBL-SS-B065-0-6-011617	K1700528-002	1/16/17	1/18/17	1.246 g	100 mL	
FTBL-SS-B064-0-6-011617	K1700528-003	1/16/17	1/18/17	1.367 g	100 mL	
FTBL-SS-B061-0-6-011617	K1700528-004	1/16/17	1/18/17	1.118 g	100 mL	
FTBL-SS-B062-0-6-011617	K1700528-005	1/16/17	1/18/17	1.190 g	100 mL	
FTBL-SS-B063-0-6-011617	K1700528-006	1/16/17	1/18/17	1.132 g	100 mL	
FTBL-SS-B072-0-6-011617	K1700528-007	1/16/17	1/18/17	1.210 g	100 mL	
FTBL-SS-B071-0-6-011617	K1700528-008	1/16/17	1/18/17	1.203 g	100 mL	
FD-011617-1	K1700528-009	1/16/17	1/18/17	1.213 g	100 mL	
Method Blank	KQ1700722-01MB	NA	NA	1.00 g	100 mL	
Lab Control Sample	KQ1700722-02LCS	NA	NA	1 g	100 mL	
Batch QC	KQ1700722-03MS	NA	NA	1.395 g	100 mL	
Batch QC	KQ1700722-04DMS	NA	NA	1.305 g	100 mL	

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Lead	6020A	532307	25.0	25.3	101	25.0	25.5	102	25.0	25.6	103

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Lead	6020A	532307				25.0	24.8	99	25.0	25.6	102

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Lead	6020A	532307				25.0	25.4	102	25.0	24.8	99

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION BLANK

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank	
			Result	C	Result	C	Result	C	Result	C
Lead	6020A	532307	0.04	U	0.04	U	0.04	U	0.04	U

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION BLANK

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank	
			Result	C	Result	C	Result	C	Result	C
Lead	6020A	532307			0.04	U	0.04	U	0.04	U

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICVS							
Lead	6020A	532307	0.1	0.1	116	80-120	01/25/17 11:39
LLCCVS							
Lead	6020A	532307	1.2	1.0	117	70-130	01/25/17 13:03
LLCCVS							
Lead	6020A	532307	1.1	1.0	109	70-130	01/25/17 13:52

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA **Concentration Units:** ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Lead	6020A	532307	0.2	-	-	-	01/25/17 11:43

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB **Concentration Units:** ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Lead	6020A	532307	0.1	-	-	-	01/25/17 11:45

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K1700524-001A								
Lead	6020A	532307	162	209	50.0	94	80-120	01/25/17 11:56

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Initial Sample Result	Serial Dillution Result	% Diff	% Diff. Limit	Analysis Date
K1700524-001SDL							
Lead	6020A	532307	162	164	1	10	01/25/17 11:54

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

Detection Limits

Matrix: Soil

Analyte	Mass	Units	LOQ	LOD	MDL	Method
Lead	208	ug/L	1	0.1	0.04	6020A

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-05

Analyte	Concentration (ug/L)	Method
Lead 208	3000	6020A

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

Analysis Run Log

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Dilution Factor	Date/Time	Pb
ZZZZZZ	1	01/25/17 11:23	
ZZZZZZ	1	01/25/17 11:26	
ICV	1	01/25/17 11:28	X
CCV	1	01/25/17 11:30	X
ICB	1	01/25/17 11:32	X
CCB	1	01/25/17 11:34	X
ZZZZZZ	1	01/25/17 11:36	
LLICVS	1	01/25/17 11:39	X
ZZZZZZ	1	01/25/17 11:41	
ICSA	1	01/25/17 11:43	X
ICSAB	1	01/25/17 11:45	X
KQ1700722-01MB	5	01/25/17 11:47	X
KQ1700722-02LCS	20	01/25/17 11:50	X
ZZZZZZ	5	01/25/17 11:52	
K1700524-001SDL	25	01/25/17 11:54	X
K1700524-001PS	5	01/25/17 11:56	X
K1700524-001MS	5	01/25/17 11:58	X
K1700524-001DMS	5	01/25/17 12:00	X
ZZZZZZ	5	01/25/17 12:02	
ZZZZZZ	5	01/25/17 12:05	
ZZZZZZ	5	01/25/17 12:07	
CCV	1	01/25/17 12:09	X
CCB	1	01/25/17 12:11	X
ZZZZZZ	5	01/25/17 12:13	
K1700528-001	5	01/25/17 12:15	X
K1700528-002	5	01/25/17 12:18	X
K1700528-003	5	01/25/17 12:20	X
K1700528-004	5	01/25/17 12:22	X
K1700528-005	5	01/25/17 12:24	X
K1700528-006	5	01/25/17 12:26	X
ZZZZZZ	5	01/25/17 12:28	
K1700528-008	5	01/25/17 12:31	X
K1700528-009	5	01/25/17 12:33	X
CCV	1	01/25/17 12:35	X
CCB	1	01/25/17 12:37	X
ZZZZZZ	5	01/25/17 12:39	
ZZZZZZ	5	01/25/17 12:41	

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

Analysis Run Log

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Dilution Factor	Date/Time	Pb
ZZZZZZ	5	01/25/17 12:43	
K1700528-007	100	01/25/17 12:46	X
CCV	1	01/25/17 12:48	X
CCB	1	01/25/17 12:52	X
ZZZZZZ	1	01/25/17 12:54	
ZZZZZZ	1	01/25/17 12:56	
ZZZZZZ	1	01/25/17 13:01	
LLCCVS 1.0 ppb	1	01/25/17 13:03	X
ZZZZZZ	1	01/25/17 13:05	
ZZZZZZ	1	01/25/17 13:08	
ZZZZZZ	500	01/25/17 13:11	
ZZZZZZ	5	01/25/17 13:13	
ZZZZZZ	20	01/25/17 13:15	
ZZZZZZ	5	01/25/17 13:17	
ZZZZZZ	25	01/25/17 13:20	
ZZZZZZ	5	01/25/17 13:22	
ZZZZZZ	5	01/25/17 13:24	
ZZZZZZ	5	01/25/17 13:26	
ZZZZZZ	5	01/25/17 13:28	
ZZZZZZ	5	01/25/17 13:30	
CCV	1	01/25/17 13:32	X
CCB	1	01/25/17 13:35	X
ZZZZZZ	5	01/25/17 13:37	
ZZZZZZ	5	01/25/17 13:39	
ZZZZZZ	5	01/25/17 13:41	
CCV	1	01/25/17 13:43	X
CCB	1	01/25/17 13:45	X
ZZZZZZ	1	01/25/17 13:48	
ZZZZZZ	1	01/25/17 13:50	
LLCCVS 1.0 ppb	1	01/25/17 13:52	X

Client: ARCADIS U.S., Inc. **Service Request:** K1700528

Project: Closed Castner Firing Range/06261038.0001.00400

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Date/Time	Ge72He	Lu175He
ZZZZZZ	01/25/17 11:23		
ZZZZZZ	01/25/17 11:26		
ICV	01/25/17 11:28	99	102
CCV	01/25/17 11:30	99	99
ICB	01/25/17 11:32	98	98
CCB	01/25/17 11:34	97	100
ZZZZZZ	01/25/17 11:36		
LLICVS	01/25/17 11:39	99	102
ZZZZZZ	01/25/17 11:41		
ICSA	01/25/17 11:43	86	91
ICSAB	01/25/17 11:45	84	94
KQ1700722-01MB	01/25/17 11:47	93	96
KQ1700722-02LCS	01/25/17 11:50	97	99
ZZZZZZ	01/25/17 11:52		
K1700524-001SDL	01/25/17 11:54	100	102
K1700524-001PS	01/25/17 11:56	100	102
K1700524-001MS	01/25/17 11:58	98	100
K1700524-001DMS	01/25/17 12:00	98	99
ZZZZZZ	01/25/17 12:02		
ZZZZZZ	01/25/17 12:05		
ZZZZZZ	01/25/17 12:07		
CCV	01/25/17 12:09	100	101
CCB	01/25/17 12:11	99	102
ZZZZZZ	01/25/17 12:13		
K1700528-001	01/25/17 12:15	100	101
K1700528-002	01/25/17 12:18	102	101
K1700528-003	01/25/17 12:20	98	101
K1700528-004	01/25/17 12:22	103	103
K1700528-005	01/25/17 12:24	102	102
K1700528-006	01/25/17 12:26	104	105
ZZZZZZ	01/25/17 12:28		
K1700528-008	01/25/17 12:31	102	104
K1700528-009	01/25/17 12:33	100	102
CCV	01/25/17 12:35	105	106
CCB	01/25/17 12:37	102	105
ZZZZZZ	01/25/17 12:39		
ZZZZZZ	01/25/17 12:41		

Client: ARCADIS U.S., Inc. **Service Request:** K1700528
Project: Closed Castner Firing Range/06261038.0001.00400

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Date/Time	Ge72He	Lu175He
ZZZZZZ	01/25/17 12:43		
K1700528-007	01/25/17 12:46	100	103
CCV	01/25/17 12:48	99	102
CCB	01/25/17 12:52	99	103
ZZZZZZ	01/25/17 12:54		
ZZZZZZ	01/25/17 12:56		
ZZZZZZ	01/25/17 13:01		
LLCCVS 1.0 ppb	01/25/17 13:03	97	100
ZZZZZZ	01/25/17 13:05		
ZZZZZZ	01/25/17 13:08		
ZZZZZZ	01/25/17 13:11		
ZZZZZZ	01/25/17 13:13		
ZZZZZZ	01/25/17 13:15		
ZZZZZZ	01/25/17 13:17		
ZZZZZZ	01/25/17 13:20		
ZZZZZZ	01/25/17 13:22		
ZZZZZZ	01/25/17 13:24		
ZZZZZZ	01/25/17 13:26		
ZZZZZZ	01/25/17 13:28		
ZZZZZZ	01/25/17 13:30		
CCV	01/25/17 13:32	105	106
CCB	01/25/17 13:35	103	107
ZZZZZZ	01/25/17 13:37		
ZZZZZZ	01/25/17 13:39		
ZZZZZZ	01/25/17 13:41		
CCV	01/25/17 13:43	108	110
CCB	01/25/17 13:45	107	107
ZZZZZZ	01/25/17 13:48		
ZZZZZZ	01/25/17 13:50		
LLCCVS 1.0 ppb	01/25/17 13:52	103	103

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Benchsheet

Service Request #: K1700579, K1700577, KQ1700613, K1700554, K1700560, K1700576, K1700515, K1700524, K1700528, K1700530, K1700531

Run #: 531809

Test: TS

Balance ID: K-BALANCE-50

Method: 160.3 Modified

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1700579-005	1.282	5.166	3.542	2.26	43.7	
	K1700577-001	1.277	11.913	12.047	10.8	90.4	
	K1700577-002	1.292	11.131	10.740	9.45	84.9	
	K1700577-002DUP	1.295	12.928	12.726	11.4	88.4	4
	K1700577-003	1.287	10.105	10.097	8.81	87.2	
	K1700577-004	1.270	10.512	10.604	9.33	88.8	
	K1700577-005	1.288	10.164	7.105	5.82	57.2	
	K1700577-006	1.271	11.002	10.181	8.91	81.0	
	K1700554-001	1.281	10.768	10.951	9.67	89.8	
	K1700554-002	1.298	10.605	11.008	9.71	91.6	
	K1700560-001	1.281	11.448	10.039	8.76	76.5	
	K1700560-002	1.287	10.820	8.971	7.68	71.0	
	K1700560-002DUP	1.273	10.775	9.003	7.73	71.7	<1
	K1700560-003	1.292	11.985	11.218	9.93	82.8	
	K1700560-004	1.274	11.013	9.982	8.71	79.1	
	K1700576-001	1.288	10.407	10.283	9.00	86.4	
	K1700576-002	1.292	11.000	11.363	10.1	91.6	
	K1700576-003	1.294	10.163	10.165	8.87	87.3	
	K1700515-001	1.295	10.299	6.798	5.50	53.4	
	K1700515-002	1.290	10.351	8.001	6.71	64.8	
	K1700515-007	1.286	10.945	7.218	5.93	54.2	
	K1700524-001	1.291	10.255	10.502	9.21	89.8	
	K1700524-002	1.287	10.614	10.582	9.30	87.6	
	K1700524-002DUP	1.293	11.374	11.260	9.97	87.6	<1
	K1700524-003	1.277	11.079	11.199	9.92	89.6	
	K1700524-004	1.284	11.162	11.338	10.1	90.1	
	K1700524-005	1.283	12.406	12.477	11.2	90.2	
	K1700528-001	1.285	14.830	14.387	13.1	88.3	
	K1700528-002	1.286	10.257	10.593	9.31	90.7	
	K1700528-003	1.286	13.440	13.227	11.9	88.8	
	K1700528-004	1.289	11.987	12.437	11.1	93.0	
	K1700528-005	1.294	10.109	10.515	9.22	91.2	
	K1700528-006	1.273	10.168	10.051	8.78	86.3	
	K1700528-007	1.293	10.742	11.070	9.78	91.0	
	K1700528-007DUP	1.294	10.689	10.939	9.65	90.2	<1
	K1700528-008	1.292	11.852	11.815	10.5	88.8	
	K1700528-009	1.297	10.105	10.603	9.31	92.1	

Comments: DJM Weight set serial No. 42868 out ap Reviewed by SC 1/24/17

Benchsheet

Service Request #:	**K1700579, K1700577, KQ1700613, K1700554, K1700560, K1700576, K1700515, K1700524, K1700528, K1700530, K1700531**	**Run #:**	**531809**
Test:	**TS**	**Balance ID:**	**K-BALANCE-50**
Method:	**160.3 Modified**		

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1700530-001	1.291	12.446	12.247	11.0	88.0	
	K1700530-002	1.286	11.206	11.282	10.00	89.2	
	K1700530-003	1.285	10.777	10.208	8.92	82.8	
	K1700531-001	1.280	15.733	14.550	13.3	84.3	
	K1700531-002	1.282	10.944	10.779	9.50	86.8	
	K1700531-003	1.288	10.299	9.981	8.69	84.4	
	K1700531-004	1.288	10.179	9.399	8.11	79.7	
	K1700531-005	1.288	11.366	11.342	10.1	88.5	
	K1700531-005DUP	1.287	10.934	10.886	9.60	87.8	<1
	K1700531-006	1.295	15.465	14.456	13.2	85.1	

	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
Oven1	**k-oven-07**	**105**	**105**	**1/20/2017**	**16:25**	**1/23/2017**	**08:16**	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	**K-BALANCE-50**	**0.999, 99.998**	**1.000, 99.999**	**1/20/2017**	**09:17**	**1/20/2017**	**16:24**
Calibration2	**K-BALANCE-49**	**1.000, 100.000**	**1.000, 99.999**	**1/23/2017**	**09:30**	**1/23/2017**	**09:55**

Comments: DJM Weight set serial No. 42868 out ap Reviewed by SC 1/24/17

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 280220
Team: Metals
Analyst: (b) (6)

Prep Workflow: MetDigSICP
Prep Method: EPA 3050B
Rush/NPDES: N/A

Status: Prepped
Current Step: Digestion

Prep Date: 01/24/2017 09:35
Due Date: 02/04/2017
Hold Date: 07/15/2017

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1700722-01	Method Blank		1.00 g		100 mL			10% HNO3, 10% HCl
KQ1700722-02	Lab Control Sample				100 mL	2 mL 1 mL 1 mL 1 mL	177744 178641 178642 178652	10% HNO3, 10% HCl
K1700524-001	FTBL-SS-B069-0-6-011617	.01	1.321 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-001: KQ1700722-03	Matrix Spike	.01	1.395 g	As Received	100 mL	2 mL 1 mL 1 mL 1 mL	177744 178641 178642 178652	10% HNO3, 10% HCl
K1700524-001: KQ1700722-04	Duplicate Matrix Spike	.01	1.305 g	As Received	100 mL	2 mL 1 mL 1 mL 1 mL	177744 178641 178642 178652	10% HNO3, 10% HCl
K1700524-002	FTBL-SS-B068-0-6-011617	.01	1.331 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-003	FTBL-SS-B067-0-6-011617	.01	1.284 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-004	FTBL-SS-B070-0-6-011617	.01	1.205 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-005	FD-011617-2	.01	1.226 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-001	FTBL-SS-B066-0-6-011617	.01	1.411 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-002	FTBL-SS-B065-0-6-011617	.01	1.246 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-003	FTBL-SS-B064-0-6-011617	.01	1.367 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-004	FTBL-SS-B061-0-6-011617	.01	1.118 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-005	FTBL-SS-B062-0-6-011617	.01	1.190 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-006	FTBL-SS-B063-0-6-011617	.01	1.132 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-007	FTBL-SS-B072-0-6-011617	.01	1.210 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-008	FTBL-SS-B071-0-6-011617	.01	1.203 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-009	FD-011617-1	.01	1.213 g	As Received	100 mL			10% HNO3, 10% HCl
K1700530-001	FTBL-SS-B073-0-6-011717	.03	1.383 g	As Received	100 mL			10% HNO3, 10% HCl
K1700530-002	FTBL-SS-B075-0-6-011717	.03	1.224 g	As Received	100 mL			10% HNO3, 10% HCl
K1700530-003	FTBL-SS-B074-0-6-011717	.03	1.202 g	As Received	100 mL			10% HNO3, 10% HCl

21 Total Samples consisting of 17 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated

with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET SS1	Spike	177744	4/8/2017	K-MET SS4	Spike	178642	8/15/2017
K-MET SS3	Spike	178641	3/18/2017	K-MET SS5	Spike	178652	6/4/2017

Preparation Materials

Step	Name	ID	Step	Name	ID
All	Teflon Chips	69101	All	K-MET HCL	178073
All	K-MET H2O2	175797	All	K-MET 100ml Centrifuge Tube	178771
All	K-MET HNO3	178047			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-Balance-02	Date Checked	1/24/17		Digestion	K-BlockDigester-07	Observed Temperature	95	deg C
Digestion	K-BlockDigester-07	Corrected Temperature	95	deg C	Digestion	K-BlockDigester-07	Thermometer ID 6402142		NONE
Digestion	K-BlockDigester-07	Correction Factor	0	deg C	Digestion	K-BlockDigester-07	Thermometer Location	8	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Weigh	24-JAN-17 09:35	24-JAN-17 11:30	(b) (6)		N	
Digestion	24-JAN-17 09:35	24-JAN-17 11:30			N	

Comments

1R: 15 mins, 2R: 30 mins, 3R: 15 mins. Balance-50 was also used and checked 1/20/17.

Review

Reviewed by: _____ Date: 1/26/17

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
	V	100*	1000ml	50	
	Zn	100*	1000ml	50	
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	25	500ml	50	
	Mo	50	500ml	100	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	
K-MET GFLCSW	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.
** Denotes 10,000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

Service Request #	K1700528		
Calibration	012517BMS05		
QC in calibration	012517BMS05		
QC Service Request #	K1700524		
STARLIMS run #	532307		
CAL STD	MS21-41-B	ICSA STD	MS21-38-B
ICV STD	MS21-35-D	ICSAB STD	MS21-38-C
LLICV STD	MS21-35-E	INT STD	MS21-34-B

6020A DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within 80-120% DoD limit?	X		
12. Spikes within 80-120% DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?	X		
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?			X
21. Cd Correction Applied?			X
22. Was run prematurely stopped, If so why?		X	

Comments: LRS= 1000 ppb.

Use mdl: 1.0 ppb = 0.5 mg/kg

Primary Review by [signature] Date 11/25/17

Secondary Review by [signature] Date 11/26/17

R:\icp\misc\data review forms\icpms review form

Data Review Form

Service Request #:	**K1700528**
Instrument ID#:	**K-ICP-MS-05**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-05 (Agilent)\012517B.csv**
RUNNO:	**532307**

There are no issues to report.

Primary Approver: 1/26/17

Secondary Approver: 1/26/17

53 2307

	Sample						
		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
1			001CALB.	1/25/2017 11:23:55 AM	CalBlk	Blank	
2			002CALS.	1/25/2017 11:26:05 AM	CalStd	25ppb	
3			003_ICV.d	1/25/2017 11:28:14 AM	ICV	ICV	
4			004_CCV.	1/25/2017 11:30:23 AM	CCV	CCV	
5			005_ICB.d	1/25/2017 11:32:32 AM	ICB	ICB	
6			006_CCB.	1/25/2017 11:34:41 AM	CCB	CCB	
7	✓		007LICV.d	1/25/2017 11:36:50 AM	LLICV	LLICVS	
8			008LICV.d	1/25/2017 11:39:10 AM	LLICV	LLICVS	
9	✓		009SMPL.	1/25/2017 11:41:20 AM	Sample	LRSTD	
10			010ICSA.d	1/25/2017 11:43:30 AM	ICSA	ICSA	
11			011ICSB.d	1/25/2017 11:45:38 AM	ICSB	ICSAB	
12			012_PB.d	1/25/2017 11:47:48 AM	PB	KQ1700722-01	5
13			013_LCS.d	1/25/2017 11:50:01 AM	LCS	KQ1700722-02	20
14			014_ARF.d	1/25/2017 11:52:11 AM	AllRef	K1700524-001	5
15			015SMPL.	1/25/2017 11:54:20 AM	Sample	K1700524-001L	25
16			016_PDS.d	1/25/2017 11:56:28 AM	PDS	K1700524-001A	5
17			017_Spk.d	1/25/2017 11:58:37 AM	Spike	K1700524-001S	5
18			018_Spk.d	1/25/2017 12:00:47 PM	Spike	K1700524-001S	5
19			019SMPL.	1/25/2017 12:02:56 PM	Sample	K1700524-002	5
20			020SMPL.	1/25/2017 12:05:06 PM	Sample	K1700524-003	5
21			021SMPL.	1/25/2017 12:07:16 PM	Sample	K1700524-004	5
22			022_CCV.	1/25/2017 12:09:26 PM	CCV	CCV	
23			023_CCB.	1/25/2017 12:11:35 PM	CCB	CCB	
24			024SMPL.	1/25/2017 12:13:44 PM	Sample	K1700524-005	5
25			025SMPL.	1/25/2017 12:15:53 PM	Sample	K1700528-001	5
26			026SMPL.	1/25/2017 12:18:02 PM	Sample	K1700528-002	5
27			027SMPL.	1/25/2017 12:20:11 PM	Sample	K1700528-003	5
28			028SMPL.	1/25/2017 12:22:21 PM	Sample	K1700528-004	5
29			029SMPL.	1/25/2017 12:24:32 PM	Sample	K1700528-005	5
30			030SMPL.	1/25/2017 12:26:41 PM	Sample	K1700528-006	5
31	✓		031SMPL.	1/25/2017 12:28:50 PM	Sample	K1700528-007	5
32			032SMPL.	1/25/2017 12:31:01 PM	Sample	K1700528-008	5
33			033SMPL.	1/25/2017 12:33:10 PM	Sample	K1700528-009	5
34			034_CCV.	1/25/2017 12:35:19 PM	CCV	CCV	
35			035_CCB.	1/25/2017 12:37:29 PM	CCB	CCB	

	Sample						
		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
36			036SMPL.	1/25/2017 12:39:38 PM	Sample	K1700530-001	5
37			037SMPL.	1/25/2017 12:41:48 PM	Sample	K1700530-002	5
38			038SMPL.	1/25/2017 12:43:57 PM	Sample	K1700530-003	5
39			039SMPL.	1/25/2017 12:46:07 PM	Sample	K1700528-007	100
40			040_CCV.	1/25/2017 12:48:16 PM	CCV	CCV	
41			041_CCB.	1/25/2017 12:52:06 PM	CCB	CCB	
42			042LCCV.	1/25/2017 12:54:16 PM	LLCCV	LLCCVS	
43			043LCCV.	1/25/2017 12:56:25 PM	LLCCV	LLCCVS	
44			044LCCV.	1/25/2017 1:01:01 PM	LLCCV	LLCCVS	
45			045_QC1.d	1/25/2017 1:03:10 PM	QC1	LLCCVS 1.0 ppb	
46			046_QC1.d	1/25/2017 1:05:20 PM	QC1	LLCCVS 1.0 ppb	
47			047_QC1.d	1/25/2017 1:08:20 PM	QC1	LLCCVS 1.0 ppb	
48			048SMPL.	1/25/2017 1:11:27 PM	Sample	K1700530-002	500
49			049_PB.d	1/25/2017 1:13:36 PM	PB	KQ1700728-01	5
50			050_LCS.d	1/25/2017 1:15:45 PM	LCS	KQ1700728-02	20
51			051_ARF.d	1/25/2017 1:17:54 PM	AllRef	K1700531-001	5
52			052SMPL.	1/25/2017 1:20:04 PM	Sample	K1700531-001L	25
53			053_PDS.d	1/25/2017 1:22:14 PM	PDS	K1700531-001A	5
54			054_Spk.d	1/25/2017 1:24:22 PM	Spike	K1700531-001S	5
55			055_Spk.d	1/25/2017 1:26:31 PM	Spike	K1700531-001S	5
56			056SMPL.	1/25/2017 1:28:41 PM	Sample	K1700531-002	5
57			057SMPL.	1/25/2017 1:30:49 PM	Sample	K1700531-003	5
58			058_CCV.	1/25/2017 1:32:58 PM	CCV	CCV	
59			059_CCB.	1/25/2017 1:35:08 PM	CCB	CCB	
60			060SMPL.	1/25/2017 1:37:20 PM	Sample	K1700531-004	5
61			061SMPL.	1/25/2017 1:39:28 PM	Sample	K1700531-005	5
62			062SMPL.	1/25/2017 1:41:37 PM	Sample	K1700531-006	5
63			063_CCV.	1/25/2017 1:43:47 PM	CCV	CCV	
64			064_CCB.	1/25/2017 1:45:57 PM	CCB	CCB	
65			065LCCV.	1/25/2017 1:48:06 PM	LLCCV	LLCCVS	
66			066LCCV.	1/25/2017 1:50:16 PM	LLCCV	LLCCVS	
67			067SMPL.	1/25/2017 1:52:26 PM	Sample	LLCCVS 1.0 ppb	

Analyte				
	Name	Mass	ISTD	Tune Mode
1	Zn	66	72	He

Analyte				
	Name	Mass	ISTD	Tune Mode
2	[Pb]	206	175	He
3	[Pb]	207	175	He
4	Pb	208	175	He
5	Ge	72		He
6	Lu	175		He

US EPA Tune Check Sample Report

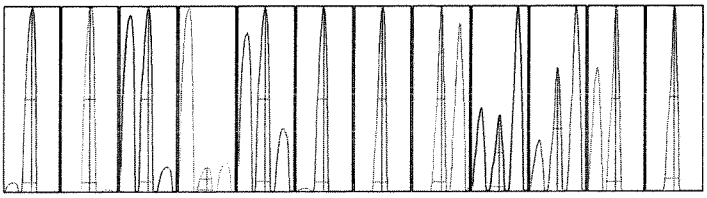
Batch Folder D:\Data\Experiments\012517A.b
Report Comment ALS Tune
Instrument Name G3281A JP13482848

[No Gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	101136	0.44	5.00	
9	20505	0.68	5.00	
24	116656	0.61	5.00	
25	15600	0.49	5.00	
26	17862	1.87	5.00	
59	147033	0.64	5.00	
115	238668	0.90	5.00	
206	72755	0.88	5.00	
207	66275	1.43	5.00	
208	160147	1.17	5.00	
209	236775	0.76	5.00	
238	352471	1.19	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	101518	101670	100982	100631	100878
9	20519	20472	20724	20469	20342
24	116049	116644	116600	117840	116148
25	15701	15521	15548	15662	15569
26	17810	18240	17460	18161	17637
59	147949	147221	146594	145646	147757
115	240755	240794	238674	237124	235993
206	73334	73295	72996	71920	72231
207	67837	66474	65902	65620	65543
208	162828	160751	160240	159048	157865
209	239611	237500	235888	235357	235517
238	357510	354609	353569	349917	346752

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	17603	7.05	6.9 - 7.1		0.771	0.900	
9	3592	9.00	8.9 - 9.1		0.780	0.900	
24	20243	24.00	23.9 - 24.1		0.780	0.900	
25	2692	25.00	24.9 - 25.1		0.779	0.900	
26	3118	26.00	25.9 - 26.1		0.777	0.900	
59	27711	59.00	58.9 - 59.1		0.765	0.900	
115	49959	115.00	114.9 - 115.1		0.727	0.900	
206	15862	206.05	205.9 - 206.1		0.781	0.900	
207	14380	207.00	206.9 - 207.1		0.743	0.900	
208	34877	208.00	207.9 - 208.1		0.752	0.900	
209	51924	209.00	208.9 - 209.1		0.754	0.900	
238	74863	238.00	237.9 - 238.1		0.773	0.900	

X% = 5 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 279 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1600	W	Carrier Gas	0.57	L/min			
RF Matching	1.76	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	5.2	V			
Extract 2	-95.0	V	Cell Entrance	-30	V			
Omega Bias	-55	V	Cell Exit	-50	V			
Deflect	10.2	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	180	V			
Energy Discrimination	5.0	V						

Calibration Blank Report

Sample Table

Sample Name	Blank
Data File Name	001CALB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:23:55-08:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Zn	66	He	21	188.28
[Pb]	206	He	22	38.94
[Pb]	207	He	11	412.30
Pb	208	He	86	26.68

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Ge	72	He	46942	0.89
Lu	175	He	1786880	3.20

Calibration Standard Report

Sample Table

Sample Name	25ppb
Data File Name	002CALS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:26:05-08:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Zn	66	He	5709	0.02
[Pb]	206	He	100971	0.00
[Pb]	207	He	93090	0.00
Pb	208	He	424656	0.00

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46095	1.67	46942	98.20	30	120	
Lu	175	He	1788873	1.76	1786880	100.11	30	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	003_ICV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:28:14-08:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	24.844	5.273	5719	4.42	25	99	
[Pb]	206	He	25.025	1.835	103092	0.85	25	100	
[Pb]	207	He	25.942	1.547	98533	1.25	25	104	
Pb	208	He	25.348	1.715	439183	0.72	25	101	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46466	0.89	46942	98.99	30	120	
Lu	175	He	1824542	1.24	1786880	102.11	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	004_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:30:23-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	24.198	4.339	5553	4.61	25	97	
[Pb]	206	He	25.296	1.605	100800	0.29	25	101	
[Pb]	207	He	25.415	2.216	93364	0.85	25	102	
Pb	208	He	25.474	1.763	426913	0.37	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46304	0.84	46942	98.64	30	120	
Lu	175	He	1764868	1.38	1786880	98.77	30	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	005_ICB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:32:32-08:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.098	45.7	43	26.6	1	
[Pb]	206	He	0.003	103.1	32	33.3	0.1	
[Pb]	207	He	0.004	76.9	27	45.1	0.1	
Pb	208	He	0.005	14.2	162	6.6	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46213	2.84	46942	98.45	30	120	
Lu	175	He	1758957	0.55	1786880	98.44	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	006_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:34:41-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.037	137.6	29	40.5	1	
[Pb]	206	He	-0.001	-158.2	17	52.9	0.1	
[Pb]	207	He	0.001	426.2	13	66.1	0.1	
Pb	208	He	0.000	-478.1	80	38.2	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45732	1.38	46942	97.42	30	120	
Lu	175	He	1795042	1.44	1786880	100.46	30	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICVS
Data File Name	007LICV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:36:50-08:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

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QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.027	8.245	257	7.23	1	103	
[Pb]	206	He	0.127	10.969	541	10.71	0.1	127	
[Pb]	207	He	0.116	23.634	447	22.77	0.1	116	
Pb	208	He	0.121	4.226	2152	3.55	0.1	121	LLICV Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46511	0.93	46942	99.08	30	120	
Lu	175	He	1805087	0.53	1786880	101.02	30	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICVS
Data File Name	008LICV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:39:10-08:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.043	27.876	260	25.93	1	104	
[Pb]	206	He	0.113	9.713	488	9.18	0.1	113	
[Pb]	207	He	0.125	14.264	484	15.27	0.1	125	
Pb	208	He	0.116	5.366	2102	6.24	0.1	116	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46417	0.28	46942	98.88	30	120	
Lu	175	He	1822100	1.29	1786880	101.97	30	120	

Sample Report

Sample Table

Sample Name	LRSTD
Data File Name	009SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:41:20-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	1016.644	1.15	226928	0.45	
[Pb]	206	He	1088.484	1.79	4340067	0.03	
[Pb]	207	He	1057.566	0.26	3888033	0.03	
Pb	208	He	1057.391	1.56	17731805	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45209	1.13	46942	96.31	30	120	
Lu	175	He	1766131	0.76	1786880	98.84	30	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	010ICSA.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:43:30-08:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	QC Flag
Zn	66	He	0.512	22.5	120	21.0	
[Pb]	206	He	0.205	6.4	772	6.2	
[Pb]	207	He	0.195	1.7	670	1.3	
Pb	208	He	0.195	4.3	3095	3.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	40199	1.99	46942	85.64	30	120	
Lu	175	He	1628079	1.18	1786880	91.11	30	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	011ICSB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:45:38-08:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	21.188	5.116	4166	4.94	25	84.8	
[Pb]	206	He	0.153	8.117	599	8.45	-1	-15.3	
[Pb]	207	He	0.137	13.777	489	12.98	-1	-13.7	
Pb	208	He	0.139	4.734	2301	4.63	-1	-13.9	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	39656	0.33	46942	84.48	30	120	
Lu	175	He	1677694	0.80	1786880	93.89	30	120	

Prep Blank (PB) Report

Sample Table

Sample Name	KQ1700722-01
Data File Name	012_PB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:47:48-08:00
Sample Type	PB
Dilution	1
Comment	5
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.296	25.6	83	18.3	1	
[Pb]	206	He	0.017	16.1	88	11.0	0.1	
[Pb]	207	He	0.012	48.7	54	37.4	0.1	
Pb	208	He	0.015	16.2	322	11.4	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	43665	1.38	46942	93.02	30	120	
Lu	175	He	1719100	1.76	1786880	96.21	30	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	KQ1700722-02
Data File Name	013_LCS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:50:01-08:00
Sample Type	LCS
Dilution	1
Comment	20
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	55.049	3.016	12409	2.82	50	110.1	
[Pb]	206	He	49.756	0.857	198076	0.63	50	99.5	
[Pb]	207	He	51.377	1.549	188560	0.70	50	102.8	
Pb	208	He	50.506	1.417	845590	0.46	50	101.0	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45582	0.59	46942	97.10	30	120	
Lu	175	He	1763190	1.19	1786880	98.67	30	120	

All Reference Sample Report

Sample Table

Sample Name	K1700524-001
Data File Name	014_ARF.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:52:11-08:00
Sample Type	AllRef
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	100.158	1.52	22980	0.44	
[Pb]	206	He	166.419	0.75	670924	0.02	
[Pb]	207	He	158.057	1.29	587493	0.03	
Pb	208	He	162.124	1.04	2748903	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46428	0.48	46942	98.91	30	120	
Lu	175	He	1785737	1.22	1786880	99.94	30	120	

Sample Report

Sample Table

Sample Name	K1700524-001L
Data File Name	015SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:54:20-08:00
Sample Type	Sample
Dilution	1
Comment	25
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	20.455	3.96	4768	0.43	
[Pb]	206	He	33.487	2.84	138271	0.02	
[Pb]	207	He	32.273	2.03	122872	0.03	
Pb	208	He	32.761	2.01	568990	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47002	0.79	46942	100.13	30	120	
Lu	175	He	1829420	2.50	1786880	102.38	30	120	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name	K1700524-001A
Data File Name	016_PDS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:56:28-08:00
Sample Type	PDS
Dilution	1
Comment	5
QC Ref File Name	014_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	145.866	1.182	33736	1.37	50	91	
[Pb]	206	He	211.673	1.405	872412	0.18	50	91	
[Pb]	207	He	203.658	1.589	773902	0.42	50	91	
Pb	208	He	209.005	1.468	3622952	0.35	50	94	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46814	0.37	46942	99.73	30	120	
Lu	175	He	1825757	1.57	1786880	102.18	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700524-001S
Data File Name	017_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:58:37-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	014_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	285.949	1.080	64690	1.20	200	93	
[Pb]	206	He	379.440	0.792	1527647	1.73	200	107	
[Pb]	207	He	367.913	1.227	1365546	0.27	200	105	
Pb	208	He	367.668	0.944	6225050	0.37	200	103	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45806	0.74	46942	97.58	30	120	
Lu	175	He	1783148	0.96	1786880	99.79	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700524-001SD
Data File Name	018_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:00:47-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	014_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	276.491	1.078	63032	1.21	200	88	
[Pb]	206	He	403.264	3.717	1606689	3.66	200	118	
[Pb]	207	He	384.499	0.967	1412444	0.47	200	113	
Pb	208	He	388.733	1.654	6513750	1.05	200	113	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46157	0.13	46942	98.33	30	120	
Lu	175	He	1764840	1.35	1786880	98.77	30	120	

Sample Report

Sample Table

Sample Name	K1700524-002
Data File Name	019SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:02:56-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	123.507	2.31	27540	0.45	
[Pb]	206	He	81.486	1.18	321687	0.03	
[Pb]	207	He	78.058	0.55	284128	0.03	
Pb	208	He	79.629	1.10	1322162	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45146	2.50	46942	96.17	30	120	
Lu	175	He	1748504	0.78	1786880	97.85	30	120	

Sample Report

Sample Table

Sample Name	K1700524-003
Data File Name	020SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:05:06-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	122.697	1.49	28242	0.43	
[Pb]	206	He	176.244	2.66	712411	0.02	
[Pb]	207	He	166.720	2.06	621409	0.03	
Pb	208	He	172.069	1.16	2925879	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46582	0.65	46942	99.23	30	120	
Lu	175	He	1790961	1.94	1786880	100.23	30	120	

Sample Report

Sample Table

Sample Name	K1700524-004
Data File Name	021SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:07:16-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	114.932	1.11	26656	0.43	
[Pb]	206	He	133.230	0.96	551753	0.02	
[Pb]	207	He	127.337	0.98	486231	0.03	
Pb	208	He	129.719	1.29	2259387	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46939	0.39	46942	99.99	30	120	
Lu	175	He	1834350	1.01	1786880	102.66	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	022_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:09:26-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.596	5.623	5934	6.24	25	102	
[Pb]	206	He	25.731	2.536	104746	1.45	25	103	
[Pb]	207	He	25.658	2.152	96299	1.01	25	103	
Pb	208	He	25.630	2.160	438828	0.92	25	103	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46780	0.70	46942	99.66	30	120	
Lu	175	He	1803071	1.26	1786880	100.91	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	023_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:11:35-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.073	58.2	38	27.0	1	
[Pb]	206	He	0.011	38.3	69	24.4	0.1	
[Pb]	207	He	0.009	17.5	44	11.5	0.1	
Pb	208	He	0.009	26.6	241	20.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46522	1.17	46942	99.11	30	120	
Lu	175	He	1820513	2.92	1786880	101.88	30	120	

Sample Report

Sample Table

Sample Name	K1700524-005
Data File Name	024SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:13:44-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	130.903	0.58	30517	0.43	
[Pb]	206	He	142.486	1.26	586520	0.02	
[Pb]	207	He	135.571	2.02	514469	0.03	
Pb	208	He	138.712	1.66	2401313	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47186	1.79	46942	100.52	30	120	
Lu	175	He	1823544	2.42	1786880	102.05	30	120	

Sample Report

Sample Table

Sample Name	K1700528-001
Data File Name	025SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:15:53-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	71.033	2.33	16521	0.43	
[Pb]	206	He	48.214	1.46	196333	0.02	
[Pb]	207	He	45.029	2.13	169047	0.03	
Pb	208	He	46.358	1.35	793958	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47047	0.18	46942	100.22	30	120	
Lu	175	He	1803715	1.46	1786880	100.94	30	120	

Sample Report

Sample Table

Sample Name	K1700528-002
Data File Name	026SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:18:02-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	80.240	2.66	19007	0.42	
[Pb]	206	He	238.289	2.02	968430	0.02	
[Pb]	207	He	229.281	1.36	859199	0.03	
Pb	208	He	233.781	1.15	3996351	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47919	0.38	46942	102.08	30	120	
Lu	175	He	1800431	1.77	1786880	100.76	30	120	

Sample Report

Sample Table

Sample Name	K1700528-003
Data File Name	027SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:20:11-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	73.395	1.12	16755	0.44	
[Pb]	206	He	416.568	0.90	1692114	0.02	
[Pb]	207	He	382.540	0.65	1432688	0.03	
Pb	208	He	393.208	0.91	6717494	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46179	0.09	46942	98.37	30	120	
Lu	175	He	1799131	0.49	1786880	100.69	30	120	

Sample Report

Sample Table

Sample Name	K1700528-004
Data File Name	028SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:22:21-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	55.437	1.05	13311	0.42	
[Pb]	206	He	43.488	1.81	181403	0.02	
[Pb]	207	He	41.020	1.88	157758	0.03	
Pb	208	He	41.883	1.83	734800	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48550	0.68	46942	103.43	30	120	
Lu	175	He	1847564	0.82	1786880	103.40	30	120	

Sample Report

Sample Table

Sample Name	K1700528-005
Data File Name	029SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:24:32-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	58.579	1.20	13830	0.42	
[Pb]	206	He	53.091	0.53	219256	0.02	
[Pb]	207	He	50.189	1.45	191102	0.03	
Pb	208	He	51.545	1.15	895312	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47744	0.33	46942	101.71	30	120	
Lu	175	He	1829019	0.19	1786880	102.36	30	120	

Sample Report

Sample Table

Sample Name	K1700528-006
Data File Name	030SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:26:41-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	88.347	1.68	21301	0.41	
[Pb]	206	He	541.312	2.14	2282138	0.02	
[Pb]	207	He	511.029	2.22	1986700	0.03	
Pb	208	He	512.670	1.20	9090678	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48786	0.69	46942	103.93	30	120	
Lu	175	He	1867493	0.97	1786880	104.51	30	120	

Sample Report

Sample Table

Sample Name	K1700528-007
Data File Name	031SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:28:50-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

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QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	124.979	0.39	29818	0.42	
[Pb]	206	He	1212.935	2.77	5027497	0.02	>LDR
[Pb]	207	He	1146.117	1.38	4381271	0.03	>LDR
~~Pb~~	~~208~~	He	1161.793	2.60	20253194	0.01	>LDR

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QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48289	1.87	46942	102.87	30	120	
Lu	175	He	1836641	2.39	1786880	102.78	30	120	

Sample Report

Sample Table

Sample Name	K1700528-008
Data File Name	032SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:31:01-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	120.366	2.12	28533	0.42	
[Pb]	206	He	122.661	0.91	516623	0.02	
[Pb]	207	He	117.873	0.56	457724	0.03	
Pb	208	He	119.504	0.58	2116898	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47979	0.89	46942	102.21	30	120	
Lu	175	He	1865436	0.67	1786880	104.40	30	120	

Sample Report

Sample Table

Sample Name	K1700528-009
Data File Name	033SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:33:10-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	71.675	3.14	16631	0.43	
[Pb]	206	He	114.600	0.37	470709	0.02	
[Pb]	207	He	109.162	0.34	413394	0.03	
Pb	208	He	111.703	0.41	1929683	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46943	1.95	46942	100.00	30	120	
Lu	175	He	1819165	0.81	1786880	101.81	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	034_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:35:19-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.600	1.671	6230	2.28	25	102	
[Pb]	206	He	25.210	1.097	107406	0.61	25	101	
[Pb]	207	He	24.741	2.202	97170	1.02	25	99	
Pb	208	He	24.809	1.616	444513	0.13	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49111	0.62	46942	104.62	30	120	
Lu	175	He	1886918	1.71	1786880	105.60	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	035_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:37:29-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.051	145.6	33	52.0	1	
[Pb]	206	He	0.015	31.2	89	22.6	0.1	
[Pb]	207	He	0.019	11.0	84	9.9	0.1	
Pb	208	He	0.016	13.1	376	9.8	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47712	0.50	46942	101.64	30	120	
Lu	175	He	1877643	0.42	1786880	105.08	30	120	

Sample Report

Sample Table

Sample Name	K1700530-001
Data File Name	036SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:39:38-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	132.119	1.45	30893	0.43	
[Pb]	206	He	216.337	1.66	880285	0.02	
[Pb]	207	He	206.221	2.41	773619	0.03	
Pb	208	He	210.184	1.35	3597260	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47330	1.58	46942	100.83	30	120	
Lu	175	He	1802628	1.97	1786880	100.88	30	120	

Sample Report

Sample Table

Sample Name	K1700530-002
Data File Name	037SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:41:48-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	84.342	1.81	17899	0.47	
[Pb]	206	He	7204.827	0.83	28827293	0.02	>LDR
[Pb]	207	He	6373.541	1.00	23511837	0.03	>LDR
~~Pb~~	~~208~~	~~He~~	~~6631.892~~	~~0.55~~	~~111602213~~	~~0.01~~	~~>LDR~~

11/25/17

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	42942	1.08	46942	91.48	30	120	
Lu	175	He	1772279	1.87	1786880	99.18	30	120	

Sample Report

Sample Table

Sample Name	K1700530-003
Data File Name	038SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:43:57-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	119.335	1.49	24749	0.48	
[Pb]	206	He	536.461	2.77	2104816	0.03	
[Pb]	207	He	497.119	0.59	1798929	0.03	
Pb	208	He	502.707	1.24	8297403	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	41973	1.13	46942	89.41	30	120	
Lu	175	He	1738535	2.22	1786880	97.29	30	120	

Sample Report

Sample Table

Sample Name	K1700528-007
Data File Name	039SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:46:07-08:00
Sample Type	Sample
Dilution	1
Comment	100
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	5.656	4.13	1330	0.43	
[Pb]	206	He	54.448	1.96	225754	0.02	
[Pb]	207	He	52.565	2.79	200913	0.03	
Pb	208	He	53.226	2.37	928124	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46890	0.95	46942	99.89	30	120	
Lu	175	He	1836936	2.69	1786880	102.80	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	040_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:48:16-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.398	2.261	5829	1.91	25	102	
[Pb]	206	He	26.054	3.099	106898	0.84	25	104	
[Pb]	207	He	25.504	2.752	96477	0.28	25	102	
Pb	208	He	25.609	2.847	441916	0.27	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46318	0.78	46942	98.67	30	120	
Lu	175	He	1817938	2.79	1786880	101.74	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	041_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:52:06-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.088	50.0	41	24.8	1	
[Pb]	206	He	0.027	14.4	136	13.5	0.1	
[Pb]	207	He	0.032	16.4	136	16.4	0.1	
Pb	208	He	0.028	6.6	573	7.3	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46453	0.51	46942	98.96	30	120	
Lu	175	He	1836423	1.68	1786880	102.77	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	042LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:54:16-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.023	20.998	251	16.91	1	102	
[Pb]	206	He	0.130	14.611	546	15.51	0.1	130	
[Pb]	207	He	0.141	9.538	534	10.84	0.1	141	
Pb	208	He	0.141	3.794	2481	4.83	0.1	141	LLCCV Failed

We 1.0 ppb
3/1/2017

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45792	2.58	46942	97.55	30	120	
Lu	175	He	1785277	1.69	1786880	99.91	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	043LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:56:25-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

1/25/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.090	14.003	266	13.19	1	109	
[Pb]	206	He	0.128	11.529	549	10.89	0.1	128	
[Pb]	207	He	0.137	3.071	531	3.68	0.1	137	
Pb	208	He	0.136	8.018	2443	7.57	0.1	136	LLCCV Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45548	0.27	46942	97.03	30	120	
Lu	175	He	1821100	1.00	1786880	101.92	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	044LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:01:01-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

1/25/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	0.841	1.934	209	1.84	1	84	
[Pb]	206	He	0.122	6.566	526	5.39	0.1	122	
[Pb]	207	He	0.100	7.207	392	5.97	0.1	100	
Pb	208	He	0.112	4.311	2021	3.34	0.1	112	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45412	0.10	46942	96.74	30	120	
Lu	175	He	1822486	1.02	1786880	101.99	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	045_QC1.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:03:10-08:00
Sample Type	QC1
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

Wrong QC Table

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.386	10.931	333	9.54	2	69	QC1 Main CR1 Failed
[Pb]	206	He	1.165	1.980	4745	1.13	0.2	583	QC1 Main CR1 Failed
[Pb]	207	He	1.165	2.641	4367	3.12	0.2	583	QC1 Main CR1 Failed
Pb	208	He	1.166	0.550	19976	1.27	0.2	583	QC1 Main CR1 Failed

11750

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45747	1.35	46942	97.45	30	120	
Lu	175	He	1795705	0.99	1786880	100.49	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	046_QC1.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:05:20-08:00
Sample Type	QC1
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

1/25/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.594	18.766	381	18.21	2	80	
[Pb]	206	He	1.194	2.412	4870	1.71	0.2	597	QC1 Main CR1 Failed
[Pb]	207	He	1.174	4.436	4407	4.82	0.2	587	QC1 Main CR1 Failed
Pb	208	He	1.172	1.589	20105	2.13	0.2	586	QC1 Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45773	0.52	46942	97.51	30	120	
Lu	175	He	1798958	0.97	1786880	100.68	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	047_QC1.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:08:20-08:00
Sample Type	QC1
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

1/25/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.300	25.679	316	25.36	1	130	
[Pb]	206	He	1.158	2.739	4741	1.30	1	116	
[Pb]	207	He	1.222	1.677	4603	0.11	1	122	
Pb	208	He	1.192	2.341	20511	1.31	1	119	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45848	2.24	46942	97.67	30	120	
Lu	175	He	1805233	1.67	1786880	101.03	30	120	

Sample Report

Sample Table

Sample Name	K1700530-002
Data File Name	048SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:11:27-08:00
Sample Type	Sample
Dilution	1
Comment	500
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	0.891	3.25	226	0.40	
[Pb]	206	He	56.163	2.06	232148	0.02	
[Pb]	207	He	51.175	1.45	195036	0.03	
Pb	208	He	52.972	1.44	920944	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46519	0.23	46942	99.10	30	120	
Lu	175	He	1831006	1.56	1786880	102.47	30	120	

Prep Blank (PB) Report

Sample Table

Sample Name	KQ1700728-01
Data File Name	049_PB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:13:36-08:00
Sample Type	PB
Dilution	1
Comment	5
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.353	15.0	103	12.9	1	
[Pb]	206	He	0.019	31.4	102	24.9	0.1	
[Pb]	207	He	0.028	4.1	118	3.3	0.1	
Pb	208	He	0.022	9.6	476	8.4	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47146	1.21	46942	100.43	30	120	
Lu	175	He	1838324	0.50	1786880	102.88	30	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	KQ1700728-02
Data File Name	050_LCS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:15:45-08:00
Sample Type	LCS
Dilution	1
Comment	20
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	56.277	0.337	13257	1.31	50	112.6	
[Pb]	206	He	48.664	0.738	206268	0.52	50	97.3	
[Pb]	207	He	49.772	1.182	194498	0.76	50	99.5	
Pb	208	He	49.049	0.927	874370	0.47	50	98.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47635	1.16	46942	101.48	30	120	
Lu	175	He	1877289	1.06	1786880	105.06	30	120	

All Reference Sample Report

Sample Table

Sample Name	K1700531-001
Data File Name	051_ARF.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:17:54-08:00
Sample Type	AllRef
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	230.077	2.10	52674	0.44	
[Pb]	206	He	63.936	0.45	262331	0.02	
[Pb]	207	He	60.911	0.28	230424	0.03	
Pb	208	He	62.256	0.58	1074315	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46366	2.54	46942	98.77	30	120	
Lu	175	He	1817228	0.60	1786880	101.70	30	120	

Sample Report

Sample Table

Sample Name	K1700531-001L
Data File Name	052SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:20:04-08:00
Sample Type	Sample
Dilution	1
Comment	25
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	47.906	2.57	11246	0.43	
[Pb]	206	He	13.762	3.11	57074	0.02	
[Pb]	207	He	13.196	2.20	50458	0.03	
Pb	208	He	13.424	3.04	234148	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47465	1.31	46942	101.11	30	120	
Lu	175	He	1837086	2.49	1786880	102.81	30	120	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name	K1700531-001A
Data File Name	053_PDS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:22:14-08:00
Sample Type	PDS
Dilution	1
Comment	5
QC Ref File Name	051_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	272.708	3.000	63703	1.14	50	85	
[Pb]	206	He	114.467	1.432	468933	0.38	50	101	
[Pb]	207	He	110.876	1.265	418796	0.31	50	100	
Pb	208	He	112.557	1.272	1939390	0.67	50	101	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47315	2.20	46942	100.79	30	120	
Lu	175	He	1814707	1.57	1786880	101.56	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700531-001S
Data File Name	054_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:24:22-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	051_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

X PDS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	343.451	1.993	80849	0.48	200	57	Flag
[Pb]	206	He	236.550	1.578	980059	1.65	200	86	
[Pb]	207	He	238.819	1.865	912222	1.26	200	89	
Pb	208	He	238.954	2.482	4163021	0.66	200	88	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47677	2.05	46942	101.57	30	120	
Lu	175	He	1835658	3.14	1786880	102.73	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700531-001SD
Data File Name	055_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:26:31-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	051_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

PDS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	346.888	1.003	79724	1.64	200	58	Flag
[Pb]	206	He	233.012	0.676	948737	0.41	200	85	
[Pb]	207	He	233.960	0.551	878314	0.72	200	87	
Pb	208	He	234.046	0.472	4008004	0.70	200	86	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46534	0.73	46942	99.13	30	120	
Lu	175	He	1803433	0.57	1786880	100.93	30	120	

Sample Report

Sample Table

Sample Name	K1700531-002
Data File Name	056SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:28:41-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	173.758	1.74	41128	0.42	
[Pb]	206	He	47.366	0.21	197250	0.02	
[Pb]	207	He	44.954	0.89	172588	0.03	
Pb	208	He	46.006	0.99	805720	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47921	1.16	46942	102.09	30	120	
Lu	175	He	1844308	1.13	1786880	103.21	30	120	

Sample Report

Sample Table

Sample Name	K1700531-003
Data File Name	057SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:30:49-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	199.878	1.63	48450	0.41	
[Pb]	206	He	99.726	1.57	420172	0.02	
[Pb]	207	He	94.462	1.71	366936	0.03	
Pb	208	He	97.334	1.64	1724782	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49078	1.10	46942	104.55	30	120	
Lu	175	He	1866429	2.01	1786880	104.45	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	058_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:32:58-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.734	2.739	6308	3.96	25	103	
[Pb]	206	He	25.451	0.725	108798	0.39	25	102	
[Pb]	207	He	25.637	2.229	101025	1.23	25	103	
Pb	208	He	25.433	1.191	457244	0.31	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49461	1.78	46942	105.37	30	120	
Lu	175	He	1893108	0.99	1786880	105.94	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	059_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:35:08-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.081	22.5	41	9.4	1	
[Pb]	206	He	0.018	13.8	101	10.1	0.1	
[Pb]	207	He	0.015	5.6	72	5.3	0.1	
Pb	208	He	0.017	13.3	406	8.3	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48450	1.89	46942	103.21	30	120	
Lu	175	He	1911030	2.26	1786880	106.95	30	120	

Sample Report

Sample Table

Sample Name	K1700531-004
Data File Name	060SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:37:20-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	245.621	1.61	58499	0.42	
[Pb]	206	He	91.106	1.75	387763	0.02	
[Pb]	207	He	86.873	1.41	340913	0.03	
Pb	208	He	88.881	1.18	1591136	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48224	1.31	46942	102.73	30	120	
Lu	175	He	1885411	1.56	1786880	105.51	30	120	

Sample Report

Sample Table

Sample Name	K1700531-005
Data File Name	061SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:39:28-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	129.785	0.94	32376	0.40	
[Pb]	206	He	91.133	3.25	391897	0.02	
[Pb]	207	He	86.104	1.10	341479	0.03	
Pb	208	He	88.700	2.33	1604427	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	50490	0.42	46942	107.56	30	120	
Lu	175	He	1905365	1.87	1786880	106.63	30	120	

Sample Report

Sample Table

Sample Name	K1700531-006
Data File Name	062SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:41:37-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	178.267	2.44	42212	0.42	
[Pb]	206	He	45.055	2.62	189329	0.02	
[Pb]	207	He	43.383	3.10	168070	0.03	
Pb	208	He	44.080	2.75	779043	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47940	0.88	46942	102.13	30	120	
Lu	175	He	1861496	1.44	1786880	104.18	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	063_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:43:47-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.463	1.750	6416	0.60	25	102	
[Pb]	206	He	25.061	0.424	110812	1.39	25	100	
[Pb]	207	He	24.706	1.153	100704	0.79	25	99	
Pb	208	He	24.801	1.009	461178	0.81	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	50862	2.07	46942	108.35	30	120	
Lu	175	He	1958175	1.82	1786880	109.59	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	064_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:45:57-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.130	22.8	54	12.7	1	
[Pb]	206	He	0.008	42.2	59	26.8	0.1	
[Pb]	207	He	0.017	7.3	81	8.6	0.1	
Pb	208	He	0.015	15.1	362	12.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	50027	0.83	46942	106.57	30	120	
Lu	175	He	1903289	2.45	1786880	106.51	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	065LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:48:06-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.167	11.140	306	10.14	1	117	
[Pb]	206	He	0.107	17.197	479	14.10	0.1	107	
[Pb]	207	He	0.098	13.717	400	13.02	0.1	98	
~~Rb~~	~~208~~	~~He~~	~~0.106~~	~~9.840~~	~~1992~~	~~8.09~~	~~0.1~~	~~106~~	

1/26/17

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49194	0.22	46942	104.80	30	120	
Lu	175	He	1894052	2.45	1786880	106.00	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	066LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:50:16-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

1/26/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.186	9.275	304	7.77	1	119	
[Pb]	206	He	0.116	0.799	522	2.24	0.1	116	
[Pb]	207	He	0.098	7.354	402	8.78	0.1	98	
Pb	208	He	0.103	1.886	1965	1.97	0.1	103	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48309	0.85	46942	102.91	30	120	
Lu	175	He	1908518	1.63	1786880	106.81	30	120	

Sample Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	067SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:52:26-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	3.205	4.38	790	0.41	
[Pb]	206	He	1.124	3.94	4702	0.02	
[Pb]	207	He	1.102	5.99	4239	0.03	
Pb	208	He	1.094	4.36	19233	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48558	0.93	46942	103.44	30	120	
Lu	175	He	1844160	1.98	1786880	103.21	30	120	

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

February 14, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on February 2, 2017. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #38037:

SDG #	Fraction:
K1700524, K1700528 K1700530, K1700531	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)
ist

EDD 90/10 ADR/IV

LDC #38037 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	Pb (6020A)		Zn (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	K1700524	02/02/17	02/16/17	0	5	-	-																														
B	K1700528	02/02/17	02/16/17	0	9	-	-																														
C	K1700530	02/02/17	02/16/17	0	3	-	-																														
D	K1700531	02/02/17	02/16/17	-	-	0	6																														
Total	T/PG			0	17	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23

Shaded cells indicate Level IV validation (all other cells are ADR validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\38037ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDG: K1700524, K1700528, K1700530, and K1700531

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

February 10, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and Level IV data validation results for samples collected during the January 2017 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by Environmental Protection Agency (EPA) SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilutions, laboratory control sample (LCS), field duplicates, split duplicate samples, and internal standards. Approximately 13 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprises a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software.

VII. Field Blanks

No field blanks were identified in these SDGs.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of zinc in one MS/MSD pair. No data were qualified for zinc MS/MSD %R outside QC limits when the serial dilution was within QC limits.

IX. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The analysis criteria

were met.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XII. Field Duplicates/Split Samples

Three field duplicate pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of one duplicate pair for lead. The associated sample results were qualified as detected estimated (J). The field duplicate result comparisons are provided in Enclosure I.

Samples FTBL-SS-B066-0-6-011617 and FTBL-SS-B066-0-6-011617-QA (from SDG FA40440) were identified as split duplicate samples. No metals were detected in any of the split samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B066-0-6-011617 (SDG: K1700528)	FTBL-SS-B066-0-6-011617-QA (SDG: FA40440)		
Lead	18.6	48.8	90	J (all detects)

XIII. Internal Standards

All internal standard areas and percent recoveries were within QC limits.

XIV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to field duplicate RPD and split duplicate sample RPD, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Jan-2017	FD-011617-2	K1700524-005	FD	EPA 3050B	6020A	III
16-Jan-2017	FD-011617-1	K1700528-009	FD	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B066-0-6-011617	K1700528-001	FD	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B065-0-6-011617	K1700528-002	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B064-0-6-011617	K1700528-003	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B061-0-6-011617	K1700528-004	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B062-0-6-011617	K1700528-005	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B063-0-6-011617	K1700528-006	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B072-0-6-011617	K1700528-007	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B071-0-6-011617	K1700528-008	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B069-0-6-011617	K1700524-001	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B069-0-6-011617MS	KQ1700722-04	MS	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B068-0-6-011617	K1700524-002	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B067-0-6-011617	K1700524-003	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B070-0-6-011617	K1700524-004	N	EPA 3050B	6020A	III
17-Jan-2017	FD-011717-1	K1700531-006	FD	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SS-B073-0-6-011717	K1700530-001	N	EPA 3050B	6020A	IV
17-Jan-2017	FTBL-SS-B075-0-6-011717	K1700530-002	N	EPA 3050B	6020A	IV
17-Jan-2017	FTBL-SS-B074-0-6-011717	K1700530-003	N	EPA 3050B	6020A	IV
17-Jan-2017	FTBL-SED-072-0-6-011717	K1700531-002	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-073-0-6-011717	K1700531-001	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-073-0-6-011717MS	KQ1700728-04	MS	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-070-0-6-011717	K1700531-003	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-071-0-6-011717	K1700531-004	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-069-0-6-011717	K1700531-005	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review *N = Normal Sample* *TB = Trip Blank* *MS = Matrix Spike*
IV = EPA Level 4 Data Validation *FD = Field Duplicate* *FB = Field Blank* *MSD = Matrix Spike Duplicate*

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1700524, K1700528, K1700530,

Laboratory: ALS_K

EDD Filename: K1700524_SEDD2A_rev, K1700528_SEDD2A_rev, K1700530_SEDD2A_rev, K1700531_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1700528

Method Category: METALS

Method: 6020A ***Matrix:*** Soil

Sample ID: FD-011617-1 ***Collected:*** 1/16/2017 12:00:00 AM ***Analysis Type:*** Initial ***Dilution:*** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	50.0	=	0.04	LOD	0.45	LOQ	mg/Kg	J	Fd

Sample ID: FTBL-SS-B066-0-6-011617 ***Collected:*** 1/16/2017 2:24:00 PM ***Analysis Type:*** Initial ***Dilution:*** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	18.6	=	0.04	LOD	0.40	LOQ	mg/Kg	J	Fd

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1700524, K1700528, K1700530,

Laboratory: ALS_K

EDD Filename: K1700524_SEDD2A_rev, K1700528_SEDD2A_rev, K1700530_SEDD2A_rev, K1700531_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

Reason Code	*Description*
Fd	Field Duplicate Precision
Ms	Matrix Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

K1700524

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700524 **Laboratory: ALS_K**

EDD Filename: K1700524_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B070-0-6-011617 (Dry)	**FD-011617-2 (Dry)**			
LEAD	59.7	62.7	5	50.00	No Qualifiers Applied

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 38037A4a
SDG #: K1700524
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 8/30/17
Page: 1 of 1
Reviewer: CA
2nd Reviewer: KK

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data		

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank
SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B069-0-6-011617	K1700524-001	Soil	01/16/17
2	FTBL-SS-B068-0-6-011617	K1700524-002	Soil	01/16/17
3	FTBL-SS-B067-0-6-011617	K1700524-003	Soil	01/16/17
4	FTBL-SS-B070-0-6-011617	K1700524-004	Soil	01/16/17
5	FD-011617-2	K1700524-005	Soil	01/16/17
6	FTBL-SS-B069-0-6-011617MS	K1700524-001MS	Soil	01/16/17
7	FTBL-SS-B069-0-6-011617MSD	K1700524-001MSD	Soil	01/16/17
8				
9				
10				
11				
12				

Notes:

Quality Control
Outlier Reports

K1700528

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700528 **Laboratory: ALS_K**

EDD Filename: K1700528_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B066-0-6-011617 (Dry)	**FD-011617-1 (Dry)**			
LEAD	18.6	50.0	92	50.00	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 38037B4a
SDG #: K1700528
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 2/8/17
Page: 1 of 1
Reviewer: A
2nd Reviewer: KK

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D (from K1700524)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	SW	Split = 1, FTBL-SS-B066-0-6-011617-QA (from FA4044O)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B066-0-6-011617	K1700528-001	Soil	01/16/17
2	FTBL-SS-B065-0-6-011617	K1700528-002	Soil	01/16/17
3	FTBL-SS-B064-0-6-011617	K1700528-003	Soil	01/16/17
4	FTBL-SS-B061-0-6-011617	K1700528-004	Soil	01/16/17
5	FTBL-SS-B062-0-6-011617	K1700528-005	Soil	01/16/17
6	FTBL-SS-B063-0-6-011617	K1700528-006	Soil	01/16/17
7	FTBL-SS-B072-0-6-011617	K1700528-007	Soil	01/16/17
8	FTBL-SS-B071-0-6-011617	K1700528-008	Soil	01/16/17
9	FD-011617-1	K1700528-009	Soil	01/16/17
10				
11				
12				

Notes:

LDC#: 38037B4b

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: OV

2nd Reviewer: KK

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	
	1	FTBL-SS-B066-0-6-011617-QA		
Lead	18.6	48.8	90	Jdet/A

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\38037B4b.wpd

Quality Control Outlier Reports

K1700530

(No Outliers)

Quality Control
Outlier Reports

K1700531

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1700531 **Laboratory: ALS_K**

EDD Filename: K1700531_SEDD2A **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SED-073-0-6-011717MS (Dry) FTBL-SED-073-0-6-011717MSD (Dry) (FTBL-SED-073-0-6-011717)	ZINC	76	78	82.00-119.00	-	ZINC	No Qual Serial Dilution OK

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700531 **Laboratory: ALS_K**

EDD Filename: K1700531_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SED-072-0-6-011717	FD-011717-1 (Dry)			
ZINC	77.7	80.6	4	50.00	No Qualifiers Applied

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 38037D4a
SDG #: K1700531
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 2/8/17
Page: 1 of 3
Reviewer: CW
2nd Reviewer: KK

METHOD: ~~Lead~~ Zinc (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D: Zn %R out, SD %D in, no quals
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SED-073-0-6-011717	K1700531-001	Soil	01/17/17
2	FTBL-SED-072-0-6-011717	K1700531-002	Soil	01/17/17
3	FTBL-SED-070-0-6-011717	K1700531-003	Soil	01/17/17
4	FTBL-SED-071-0-6-011717	K1700531-004	Soil	01/17/17
5	FTBL-SED-069-0-6-011717	K1700531-005	Soil	01/17/17
6	FD-011717-1	K1700531-006	Soil	01/17/17
7	FTBL-SED-073-0-6-011717MS	K1700531-001MS	Soil	01/17/17
8	FTBL-SED-073-0-6-011717MSD	K1700531-001MSD	Soil	01/17/17
9				
10				
11				
12				

Notes:

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: February 8, 2017

Parameters: Lead

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1700530

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-SS-B073-0-6-011717	K1700530-001	Soil	01/17/17
FTBL-SS-B075-0-6-011717	K1700530-002	Soil	01/17/17
FTBL-SS-B074-0-6-011717	K1700530-003	Soil	01/17/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Lead - Data Qualification Summary - SDG K1700530

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Lead - Laboratory Blank Data Qualification Summary - SDG K1700530

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Lead - Field Blank Data Qualification Summary - SDG K1700530

No Sample Data Qualified in this SDG

LDC #: 38037C4a
SDG #: K1700530
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 2/8/17
Page: 1 of 1
Reviewer: CA
2nd Reviewer: KK

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	~~ICB/CCB only~~ CA
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D (from K1700524)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B073-0-6-011717	K1700530-001	Soil	01/17/17
2	FTBL-SS-B075-0-6-011717	K1700530-002	Soil	01/17/17
3	FTBL-SS-B074-0-6-011717	K1700530-003	Soil	01/17/17
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

)C #: 380371C4a

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: BJR

Method: Metals (EPA SW 846 Method 6010/6020/7000)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were the low standard checks within 70-130%	✓			
Were all initial calibration correlation coefficients within limits as specified by the method?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?			✓	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓	✓		
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.		✓	✓	
Target analytes were detected in the field blanks.				

LDC #: 58037C4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: CR
2nd Reviewer: KK

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV (11:28)	ICP/MS (Initial calibration)	Pb	25.348	25.0	~~101~~	~~101~~	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV (12:35)	ICP/MS (Continuing calibration)	Pb	24.809	25.0	99	99	Y
	CVAA (Continuing calibration)						

Comments:

CALCLC.4C4

LDC #: 38037C4

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: AR
2nd Reviewer: KK

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
N	ICP interference check						
LCS	Laboratory control sample		101.012	100	101	101	Y
N	Matrix spike		(SSR-SR)				
N	Duplicate						
N	ICP serial dilution						

Comments: _____

LDC #: 38032C4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 02
2nd reviewer: KK

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Pb were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{10mL(5)(210.184\mu g/L)}{0.88(1.383g)(1000)} = 86.35 mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Pb	86.4	86.4	Y
	2		2430	2430	
	3		253	253	

Note:

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
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F : +1 360 636 1068
www.alsglobal.com

February 01, 2017

Analytical Report for Service Request No: K1700530

(b) (6)
ARCADIS U.S., Inc.
401 East Main Street
Suite 400
El Paso, TX 79901

RE: Closed Castner Firing Range / 06261038.0001.00400

Dear (b) (6)

Enclosed are the results of the sample(s) submitted to our laboratory January 18, 2017
For your reference, these analyses have been assigned our service request number **K1700530.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at gregory.salata@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

(b) (6)
Senior Project
Manager

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Table of Contents

Acronyms
Qualifiers
State Certifications, Accreditations, And Licenses
Case Narrative
Chain of Custody
Total Solids
Metals
Raw Data
    Total Solids
    Metals

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client:	ARCADIS U.S., Inc.	**Service Request No.:**	K1700530
Project:	Closed Castner Firing Range/ 06261038.0001.00400	**Date Received:**	01/18/17
Sample Matrix:	Soil		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Three soil samples were received for analysis at ALS Environmental on 01/18/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by__ (b) (6) _____

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Chain of Custody

K1700530

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068
Columbia Analytical Services, Inc.
Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.:

Project Manager:	(b) (6)	**Bill to:**	PO Number: 06261038.0001.00400
Client Name:	Arcadis	**Company:**	Arcadis
Address:	401 East Main Street, Suite 400	**Address:**	630 Plaza Drive
City, State ZIP:	El Paso, Texas 79901	**City, State ZIP:**	Highlands Ranch, Co 80129
Email:	(b) (6) **Phone:** 915-433-1761	**Email:**	accountspayable.administration@arcadis.com
Project Name:			
Project Number:			
P.O. Number:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present		
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice
Cooler Custody Seals:	Yes	No	N/A	Total Containers:
Sample Custody Seals:	Yes	No	N/A	

REQUESTED ANALYSIS

TAT

Standard
Same Day ***
Next Day ***
5 Day
EDD

*** Please call fo availability

Due Date:

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	Lead	Comments
FTBL-SS- B073-0-6-011717	S	1/17/17	1255		1	X	
FTBL-SS- B075-0-6-011717	S	1/17/17	1259		1	X	
FTBL-SS- B074-0-6-011717	S	1/17/17	1303		1	X	
FTBL-SS-	S				1		
FTBL-SS-	S				1		
FTBL-SS-	S				1		
FTBL-SS-	S				1		
FTBL-SS-	S				1		
FTBL-SS-	S				1		
FTBL-SS-	S				1		
FTBL-SS-	S				1		

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
(b) (6)		1-17-17 1700	(b) (6)		1/18/17 1050

PC GS

Cooler Receipt and Preservation Form

Client Arcadis Service Request K17 005 30

Received: 1/18/17 Opened: 1/18/17 By: CG Unloaded: 1/18/17 By: CG

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number NA	Filed
-0.6	-0.6	0.1	0.1	0.0	370		8026 5614 5193	

4. Packing material: *Inserts* *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Total Solids

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700530
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/17/17
Sample Matrix:	Soil	**Date Received:**	01/18/17
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	Air Dried

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
FTBL-SS-B073-0-6-011717	K1700530-001	**88.0**	-	-	1	01/20/17 16:25	
FTBL-SS-B075-0-6-011717	K1700530-002	**89.2**	-	-	1	01/20/17 16:25	
FTBL-SS-B074-0-6-011717	K1700530-003	**82.8**	-	-	1	01/20/17 16:25	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700530
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	Air Dried

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1700524-002DUP	-	87.6	87.6	87.6	<1	20	01/20/17
Batch QC	K1700528-007DUP	-	91.0	90.2	90.6	<1	20	01/20/17
Batch QC	K1700531-005DUP	-	88.5	87.8	88.2	<1	20	01/20/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700530
Project	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1700560-002DUP	-	71.0	71.7	71.4	<1	20	01/20/17
Batch QC	K1700577-002DUP	-	84.9	88.4	86.7	4	20	01/20/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700530
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/17/17 12:55
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B073-0-6-011717	**Basis:**	Dry
Lab Code:	K1700530-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**86.4**	mg/Kg	0.41	0.04	0.02	5	01/25/17 12:39	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700530
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/17/17 12:59
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B075-0-6-011717	**Basis:**	Dry
Lab Code:	K1700530-002		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**2430**	mg/Kg	46	5	2	500	01/25/17 13:11	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700530
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	01/17/17 13:03
Sample Matrix:	Soil	**Date Received:**	01/18/17 10:50
Sample Name:	FTBL-SS-B074-0-6-011717	**Basis:**	Dry
Lab Code:	K1700530-003		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	**253**	mg/Kg	0.50	0.05	0.02	5	01/25/17 12:43	01/24/17	

Analytical Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700530
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	KQ1700722-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lead	6020A	ND U	mg/Kg	0.5	0.05	0.02	5	01/25/17 11:47	01/24/17	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ARCADIS U.S., Inc.	**Service Request:**	K1700530
Project:	Closed Castner Firing Range/06261038.0001.00400	**Date Collected:**	N/A
Sample Matrix:	Soil	**Date Received:**	N/A
		Date Analyzed:	01/25/17
		Date Extracted:	01/24/17

Duplicate Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	mg/Kg
Lab Code:	K1700524-001	**Basis:**	Dry
Analysis Method:	6020A		
Prep Method:	EPA 3050B		

		Matrix Spike KQ1700722-03			**Duplicate Matrix Spike** KQ1700722-04					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Lead	68.4	147	79.8	98	166	85.3	114	84-118	12	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 1/30/2017 2:16:10 PM Superset Reference:

Client: ARCADIS U.S., Inc.
Project: Closed Castner Firing Range/06261038.0001.00400
Sample Matrix: Soil

Service Request: K1700530
Date Analyzed: 01/25/17

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis: Dry

Lab Control Sample
KQ1700722-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Lead	6020A	101	100	101	84-118

Prep Summary Report

Client: ARCADIS U.S., Inc. **Service Request:**K1700530
Project: Closed Castner Firing Range/06261038.0001.00400
Sample Matrix: Soil

Metals

Prep Method: EPA 3050B **Extraction Lot:**280220
Analytical Method: 6020A

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
FTBL-SS-B073-0-6-011717	K1700530-001	1/17/17	1/18/17	1.383 g	100 mL	
FTBL-SS-B075-0-6-011717	K1700530-002	1/17/17	1/18/17	1.224 g	100 mL	
FTBL-SS-B074-0-6-011717	K1700530-003	1/17/17	1/18/17	1.202 g	100 mL	
Method Blank	KQ1700722-01MB	NA	NA	1.00 g	100 mL	
Lab Control Sample	KQ1700722-02LCS	NA	NA	1 g	100 mL	
Batch QC	KQ1700722-03MS	NA	NA	1.395 g	100 mL	
Batch QC	KQ1700722-04DMS	NA	NA	1.305 g	100 mL	

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Lead	6020A	532307	25.0	25.3	101	25.0	25.5	102	25.0	25.6	103

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Lead	6020A	532307				25.0	24.8	99	25.0	25.6	102

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration			Continuing Calibration			Continuing Calibration		
			True	Found	%R (1)	True	Found	%R (1)	True	Found	%R (1)
Lead	6020A	532307				25.0	25.4	102	25.0	24.8	99

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION BLANK

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank	
			Result	C	Result	C	Result	C	Result	C
Lead	6020A	532307	0.04	U	0.04	U	0.04	U	0.04	U

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

INITIAL AND CONTINUING CALIBRATION BLANK

Concentration Units: ug/L

Analyte	Method	Analysis Batch	Initial Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank		Continuing Calibration Blank	
			Result	C	Result	C	Result	C	Result	C
Lead	6020A	532307			0.04	U	0.04	U	0.04	U

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICVS							
Lead	6020A	532307	0.1	0.1	116	80-120	01/25/17 11:39
LLCCVS							
Lead	6020A	532307	1.2	1.0	117	70-130	01/25/17 13:03
LLCCVS							
Lead	6020A	532307	1.1	1.0	109	70-130	01/25/17 13:52

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA **Concentration Units:** ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Lead	6020A	532307	0.2	-	-	-	01/25/17 11:43

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB **Concentration Units:** ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Lead	6020A	532307	0.1	-	-	-	01/25/17 11:45

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K1700524-001A								
Lead	6020A	532307	162	209	50.0	94	80-120	01/25/17 11:56

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Initial Sample Result	Serial Dillution Result	% Diff	% Diff. Limit	Analysis Date
K1700524-001SDL							
Lead	6020A	532307	162	164	1	10	01/25/17 11:54

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

Detection Limits

Matrix: Soil

Analyte	Mass	Units	LOQ	LOD	MDL	Method
Lead	208	ug/L	1	0.1	0.04	6020A

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-05

Analyte	Concentration (ug/L)	Method
Lead 208	3000	6020A

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

Analysis Run Log

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Dilution Factor	Date/Time	Pb
ZZZZZZ	1	01/25/17 11:23	
ZZZZZZ	1	01/25/17 11:26	
ICV	1	01/25/17 11:28	X
CCV	1	01/25/17 11:30	X
ICB	1	01/25/17 11:32	X
CCB	1	01/25/17 11:34	X
ZZZZZZ	1	01/25/17 11:36	
LLICVS	1	01/25/17 11:39	X
ZZZZZZ	1	01/25/17 11:41	
ICSA	1	01/25/17 11:43	X
ICSAB	1	01/25/17 11:45	X
KQ1700722-01MB	5	01/25/17 11:47	X
KQ1700722-02LCS	20	01/25/17 11:50	X
ZZZZZZ	5	01/25/17 11:52	
K1700524-001SDL	25	01/25/17 11:54	X
K1700524-001PS	5	01/25/17 11:56	X
K1700524-001MS	5	01/25/17 11:58	X
K1700524-001DMS	5	01/25/17 12:00	X
ZZZZZZ	5	01/25/17 12:02	
ZZZZZZ	5	01/25/17 12:05	
ZZZZZZ	5	01/25/17 12:07	
CCV	1	01/25/17 12:09	X
CCB	1	01/25/17 12:11	X
ZZZZZZ	5	01/25/17 12:13	
ZZZZZZ	5	01/25/17 12:15	
ZZZZZZ	5	01/25/17 12:18	
ZZZZZZ	5	01/25/17 12:20	
ZZZZZZ	5	01/25/17 12:22	
ZZZZZZ	5	01/25/17 12:24	
ZZZZZZ	5	01/25/17 12:26	
ZZZZZZ	5	01/25/17 12:28	
ZZZZZZ	5	01/25/17 12:31	
ZZZZZZ	5	01/25/17 12:33	
CCV	1	01/25/17 12:35	X
CCB	1	01/25/17 12:37	X
K1700530-001	5	01/25/17 12:39	X
ZZZZZZ	5	01/25/17 12:41	

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

Analysis Run Log

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Dilution Factor	Date/Time	Pb
K1700530-003	5	01/25/17 12:43	X
ZZZZZZ	100	01/25/17 12:46	
CCV	1	01/25/17 12:48	X
CCB	1	01/25/17 12:52	X
ZZZZZZ	1	01/25/17 12:54	
ZZZZZZ	1	01/25/17 12:56	
ZZZZZZ	1	01/25/17 13:01	
LLCCVS 1.0 ppb	1	01/25/17 13:03	X
ZZZZZZ	1	01/25/17 13:05	
ZZZZZZ	1	01/25/17 13:08	
K1700530-002	500	01/25/17 13:11	X
ZZZZZZ	5	01/25/17 13:13	
ZZZZZZ	20	01/25/17 13:15	
ZZZZZZ	5	01/25/17 13:17	
ZZZZZZ	25	01/25/17 13:20	
ZZZZZZ	5	01/25/17 13:22	
ZZZZZZ	5	01/25/17 13:24	
ZZZZZZ	5	01/25/17 13:26	
ZZZZZZ	5	01/25/17 13:28	
ZZZZZZ	5	01/25/17 13:30	
CCV	1	01/25/17 13:32	X
CCB	1	01/25/17 13:35	X
ZZZZZZ	5	01/25/17 13:37	
ZZZZZZ	5	01/25/17 13:39	
ZZZZZZ	5	01/25/17 13:41	
CCV	1	01/25/17 13:43	X
CCB	1	01/25/17 13:45	X
ZZZZZZ	1	01/25/17 13:48	
ZZZZZZ	1	01/25/17 13:50	
LLCCVS 1.0 ppb	1	01/25/17 13:52	X

Client: ARCADIS U.S., Inc. **Service Request:** K1700530

Project: Closed Castner Firing Range/06261038.0001.00400

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Date/Time	Ge72He	Lu175He
ZZZZZZ	01/25/17 11:23		
ZZZZZZ	01/25/17 11:26		
ICV	01/25/17 11:28	99	102
CCV	01/25/17 11:30	99	99
ICB	01/25/17 11:32	98	98
CCB	01/25/17 11:34	97	100
ZZZZZZ	01/25/17 11:36		
LLICVS	01/25/17 11:39	99	102
ZZZZZZ	01/25/17 11:41		
ICSA	01/25/17 11:43	86	91
ICSAB	01/25/17 11:45	84	94
KQ1700722-01MB	01/25/17 11:47	93	96
KQ1700722-02LCS	01/25/17 11:50	97	99
ZZZZZZ	01/25/17 11:52		
K1700524-001SDL	01/25/17 11:54	100	102
K1700524-001PS	01/25/17 11:56	100	102
K1700524-001MS	01/25/17 11:58	98	100
K1700524-001DMS	01/25/17 12:00	98	99
ZZZZZZ	01/25/17 12:02		
ZZZZZZ	01/25/17 12:05		
ZZZZZZ	01/25/17 12:07		
CCV	01/25/17 12:09	100	101
CCB	01/25/17 12:11	99	102
ZZZZZZ	01/25/17 12:13		
ZZZZZZ	01/25/17 12:15		
ZZZZZZ	01/25/17 12:18		
ZZZZZZ	01/25/17 12:20		
ZZZZZZ	01/25/17 12:22		
ZZZZZZ	01/25/17 12:24		
ZZZZZZ	01/25/17 12:26		
ZZZZZZ	01/25/17 12:28		
ZZZZZZ	01/25/17 12:31		
ZZZZZZ	01/25/17 12:33		
CCV	01/25/17 12:35	105	106
CCB	01/25/17 12:37	102	105
K1700530-001	01/25/17 12:39	101	101
ZZZZZZ	01/25/17 12:41		

Client: ARCADIS U.S., Inc. **Service Request:** K1700530
Project: Closed Castner Firing Range/06261038.0001.00400

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: **K-ICP-MS-05** **Analytical BatchID:** **532307**

Sample	Date/Time	Ge72He	Lu175He
K1700530-003	01/25/17 12:43	89	97
ZZZZZZ	01/25/17 12:46		
CCV	01/25/17 12:48	99	102
CCB	01/25/17 12:52	99	103
ZZZZZZ	01/25/17 12:54		
ZZZZZZ	01/25/17 12:56		
ZZZZZZ	01/25/17 13:01		
LLCCVS 1.0 ppb	01/25/17 13:03	97	100
ZZZZZZ	01/25/17 13:05		
ZZZZZZ	01/25/17 13:08		
K1700530-002	01/25/17 13:11	99	102
ZZZZZZ	01/25/17 13:13		
ZZZZZZ	01/25/17 13:15		
ZZZZZZ	01/25/17 13:17		
ZZZZZZ	01/25/17 13:20		
ZZZZZZ	01/25/17 13:22		
ZZZZZZ	01/25/17 13:24		
ZZZZZZ	01/25/17 13:26		
ZZZZZZ	01/25/17 13:28		
ZZZZZZ	01/25/17 13:30		
CCV	01/25/17 13:32	105	106
CCB	01/25/17 13:35	103	107
ZZZZZZ	01/25/17 13:37		
ZZZZZZ	01/25/17 13:39		
ZZZZZZ	01/25/17 13:41		
CCV	01/25/17 13:43	108	110
CCB	01/25/17 13:45	107	107
ZZZZZZ	01/25/17 13:48		
ZZZZZZ	01/25/17 13:50		
LLCCVS 1.0 ppb	01/25/17 13:52	103	103

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Benchsheet

Service Request #: K1700579, K1700577, KQ1700613, K1700554, K1700560, K1700576, K1700515, K1700524, K1700528, K1700530, K1700531

Run #: 531809

Test: TS

Balance ID: K-BALANCE-50

Method: 160.3 Modified

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1700579-005	1.282	5.166	3.542	2.26	43.7	
	K1700577-001	1.277	11.913	12.047	10.8	90.4	
	K1700577-002	1.292	11.131	10.740	9.45	84.9	
	K1700577-002DUP	1.295	12.928	12.726	11.4	88.4	4
	K1700577-003	1.287	10.105	10.097	8.81	87.2	
	K1700577-004	1.270	10.512	10.604	9.33	88.8	
	K1700577-005	1.288	10.164	7.105	5.82	57.2	
	K1700577-006	1.271	11.002	10.181	8.91	81.0	
	K1700554-001	1.281	10.768	10.951	9.67	89.8	
	K1700554-002	1.298	10.605	11.008	9.71	91.6	
	K1700560-001	1.281	11.448	10.039	8.76	76.5	
	K1700560-002	1.287	10.820	8.971	7.68	71.0	
	K1700560-002DUP	1.273	10.775	9.003	7.73	71.7	<1
	K1700560-003	1.292	11.985	11.218	9.93	82.8	
	K1700560-004	1.274	11.013	9.982	8.71	79.1	
	K1700576-001	1.288	10.407	10.283	9.00	86.4	
	K1700576-002	1.292	11.000	11.363	10.1	91.6	
	K1700576-003	1.294	10.163	10.165	8.87	87.3	
	K1700515-001	1.295	10.299	6.798	5.50	53.4	
	K1700515-002	1.290	10.351	8.001	6.71	64.8	
	K1700515-007	1.286	10.945	7.218	5.93	54.2	
	K1700524-001	1.291	10.255	10.502	9.21	89.8	
	K1700524-002	1.287	10.614	10.582	9.30	87.6	
	K1700524-002DUP	1.293	11.374	11.260	9.97	87.6	<1
	K1700524-003	1.277	11.079	11.199	9.92	89.6	
	K1700524-004	1.284	11.162	11.338	10.1	90.1	
	K1700524-005	1.283	12.406	12.477	11.2	90.2	
	K1700528-001	1.285	14.830	14.387	13.1	88.3	
	K1700528-002	1.286	10.257	10.593	9.31	90.7	
	K1700528-003	1.286	13.440	13.227	11.9	88.8	
	K1700528-004	1.289	11.987	12.437	11.1	93.0	
	K1700528-005	1.294	10.109	10.515	9.22	91.2	
	K1700528-006	1.273	10.168	10.051	8.78	86.3	
	K1700528-007	1.293	10.742	11.070	9.78	91.0	
	K1700528-007DUP	1.294	10.689	10.939	9.65	90.2	<1
	K1700528-008	1.292	11.852	11.815	10.5	88.8	
	K1700528-009	1.297	10.105	10.603	9.31	92.1	

Comments: DJM Weight set serial No. 42868 out ap Reviewed by SC 1/24/17

Benchsheet

Service Request #: K1700579, K1700577, KQ1700613, K1700554, K1700560, K1700576, K1700515, K1700524, K1700528, K1700530, K1700531

Run #: 531809

Test: TS

Balance ID: K-BALANCE-50

Method: 160.3 Modified

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1700530-001	1.291	12.446	12.247	11.0	88.0	
	K1700530-002	1.286	11.206	11.282	10.00	89.2	
	K1700530-003	1.285	10.777	10.208	8.92	82.8	
	K1700531-001	1.280	15.733	14.550	13.3	84.3	
	K1700531-002	1.282	10.944	10.779	9.50	86.8	
	K1700531-003	1.288	10.299	9.981	8.69	84.4	
	K1700531-004	1.288	10.179	9.399	8.11	79.7	
	K1700531-005	1.288	11.366	11.342	10.1	88.5	
	K1700531-005DUP	1.287	10.934	10.886	9.60	87.8	<1
	K1700531-006	1.295	15.465	14.456	13.2	85.1	

	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
Oven1	k-oven-07	105	105	1/20/2017	16:25	1/23/2017	08:16	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	K-BALANCE-50	0.999, 99.998	1.000, 99.999	1/20/2017	09:17	1/20/2017	16:24
Calibration2	K-BALANCE-49	1.000, 100.000	1.000, 99.999	1/23/2017	09:30	1/23/2017	09:55

Comments: DJM Weight set serial No. 42868 out ap Reviewed by SC 1/24/17

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information Benchsheet

Prep Run: 280220
Team: Metals
Analyst: (b) (6)

Prep Workflow: MetDigSICP
Prep Method: EPA 3050B
Rush/NPDES: N/A

Status: Prepped
Current Step: Digestion

Prep Date: 01/24/2017 09:35
Due Date: 02/04/2017
Hold Date: 07/15/2017

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1700722-01	Method Blank		1.00 g		100 mL			10% HNO3, 10% HCl
KQ1700722-02	Lab Control Sample				100 mL	2 mL 1 mL 1 mL 1 mL	177744 178641 178642 178652	10% HNO3, 10% HCl
K1700524-001	FTBL-SS-B069-0-6-011617	.01	1.321 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-001: KQ1700722-03	Matrix Spike	.01	1.395 g	As Received	100 mL	2 mL 1 mL 1 mL 1 mL	177744 178641 178642 178652	10% HNO3, 10% HCl
K1700524-001: KQ1700722-04	Duplicate Matrix Spike	.01	1.305 g	As Received	100 mL	2 mL 1 mL 1 mL 1 mL	177744 178641 178642 178652	10% HNO3, 10% HCl
K1700524-002	FTBL-SS-B068-0-6-011617	.01	1.331 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-003	FTBL-SS-B067-0-6-011617	.01	1.284 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-004	FTBL-SS-B070-0-6-011617	.01	1.205 g	As Received	100 mL			10% HNO3, 10% HCl
K1700524-005	FD-011617-2	.01	1.226 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-001	FTBL-SS-B066-0-6-011617	.01	1.411 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-002	FTBL-SS-B065-0-6-011617	.01	1.246 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-003	FTBL-SS-B064-0-6-011617	.01	1.367 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-004	FTBL-SS-B061-0-6-011617	.01	1.118 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-005	FTBL-SS-B062-0-6-011617	.01	1.190 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-006	FTBL-SS-B063-0-6-011617	.01	1.132 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-007	FTBL-SS-B072-0-6-011617	.01	1.210 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-008	FTBL-SS-B071-0-6-011617	.01	1.203 g	As Received	100 mL			10% HNO3, 10% HCl
K1700528-009	FD-011617-1	.01	1.213 g	As Received	100 mL			10% HNO3, 10% HCl
K1700530-001	FTBL-SS-B073-0-6-011717	.03	1.383 g	As Received	100 mL			10% HNO3, 10% HCl
K1700530-002	FTBL-SS-B075-0-6-011717	.03	1.224 g	As Received	100 mL			10% HNO3, 10% HCl
K1700530-003	FTBL-SS-B074-0-6-011717	.03	1.202 g	As Received	100 mL			10% HNO3, 10% HCl

21 Total Samples consisting of 17 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated

with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET SS1	Spike	177744	4/8/2017	K-MET SS4	Spike	178642	8/15/2017
K-MET SS3	Spike	178641	3/18/2017	K-MET SS5	Spike	178652	6/4/2017

Preparation Materials

Step	Name	ID	Step	Name	ID
All	Teflon Chips	69101	All	K-MET HCL	178073
All	K-MET H2O2	175797	All	K-MET 100ml Centrifuge Tube	178771
All	K-MET HNO3	178047			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-Balance-02	Date Checked	1/24/17		Digestion	K-BlockDigester-07	Observed Temperature	95	deg C
Digestion	K-BlockDigester-07	Corrected Temperature	95	deg C	Digestion	K-BlockDigester-07	Thermometer ID 6402142		NONE
Digestion	K-BlockDigester-07	Correction Factor	0	deg C	Digestion	K-BlockDigester-07	Thermometer Location	8	NONE

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Weigh	24-JAN-17 09:35	24-JAN-17 11:30	(b) (6)		N	
Digestion	24-JAN-17 09:35	24-JAN-17 11:30			N	

Comments

1R: 15 mins, 2R: 30 mins, 3R: 15 mins. Balance-50 was also used and checked 1/20/17.

Review

Reviewed by: _____ Date: 1/26/17

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
	V	100*	1000ml	50	
	Zn	100*	1000ml	50	
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	25	500ml	50	
	Mo	50	500ml	100	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	

K-MET GFLCSW	HNO3	10.0	1000ml	-	
	As, Pb, Se, Tl	5.0	1000ml	2.5	
	Cd	-	-	1.25	
	Cu	2.5	1000ml	2.5	
K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.
** Denotes 10,000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

Service Request #	K1700530		
Calibration	012517BMS05		
QC in calibration	012517BMS05		
QC Service Request #	K1700524		
STARLIMS run #	532307		
CAL STD	MS21-41-B	ICSA STD	MS21-38-B
ICV STD	MS21-35-D	ICSAB STD	MS21-38-C
LLICV STD	MS21-35-E	INT STD	MS21-34-B

6020A DOD Data Review Form

	Yes	No	NA
1. Mass calibration <0.1 amu?	X		
2. Resolution <0.9 amu at 10% peak height?	X		
3. Stability RSD ≤5% for five replicates?	X		
4. Appropriate standardization completed?	X		
5. ICV within 10% of true value?	X		
6. CCV's within 10% of true?	X		
7. ICB/CCB's <LOD?	X		
8. Initial Low-level cal. check ± 20%	X		
9. ICSA/ICSAB within ± 20%	X		
10. Method blank <½ the LOQ?	X		
11. LCS within 80-120% DoD limit?	X		
12. Spikes within 80-120% DoD limit?	X		
13. Duplicate Spike RPD <20% DoD limit?	X		
14. Serial dilution within 10%?	X		
15. Post spike within 80-120% DoD limit?	X		
16. Internal standards within 30-120%?	X		
17. Linear range established with High CCV?	X		
18. Adequate rinse out time allowed?	X		
19. Interferences checked?	X		
20. Se over MRL?			X
21. Cd Correction Applied?			X
22. Was run prematurely stopped, If so why?		X	

Comments: LRS= 1000 ppb.

Use mdl = 1.0 ppb = 0.5 mg/kg

Primary Review by _____ Date 1/25/17

Secondary Review by _____ Date 1/26/17

R:\icp\misc\data review forms\icpms review form

Data Review Form

Service Request #:	**K1700530**
Instrument ID#:	**K-ICP-MS-05**
DataFile Name:	**R:\ICP\WIP\DATA\K-ICP-MS-05 (Agilent)\012517B.csv**
RUNNO:	**532307**

There are no issues to report.

Primary Approver: _____ 1/26/17

Secondary Approver: 1/26/17

53 2307

	Sample						
		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
1			001CALB.	1/25/2017 11:23:55 AM	CalBlk	Blank	
2			002CALS.	1/25/2017 11:26:05 AM	CalStd	25ppb	
3			003_ICV.d	1/25/2017 11:28:14 AM	ICV	ICV	
4			004_CCV.	1/25/2017 11:30:23 AM	CCV	CCV	
5			005_ICB.d	1/25/2017 11:32:32 AM	ICB	ICB	
6			006_CCB.	1/25/2017 11:34:41 AM	CCB	CCB	
7	✓		007LICV.d	1/25/2017 11:36:50 AM	LLICV	LLICVS	
8			008LICV.d	1/25/2017 11:39:10 AM	LLICV	LLICVS	
9	✓		009SMPL.	1/25/2017 11:41:20 AM	Sample	LRSTD	
10			010ICSA.d	1/25/2017 11:43:30 AM	ICSA	ICSA	
11			011ICSB.d	1/25/2017 11:45:38 AM	ICSB	ICSAB	
12			012_PB.d	1/25/2017 11:47:48 AM	PB	KQ1700722-01	5
13			013_LCS.d	1/25/2017 11:50:01 AM	LCS	KQ1700722-02	20
14			014_ARF.d	1/25/2017 11:52:11 AM	AllRef	K1700524-001	5
15			015SMPL.	1/25/2017 11:54:20 AM	Sample	K1700524-001L	25
16			016_PDS.d	1/25/2017 11:56:28 AM	PDS	K1700524-001A	5
17			017_Spk.d	1/25/2017 11:58:37 AM	Spike	K1700524-001S	5
18			018_Spk.d	1/25/2017 12:00:47 PM	Spike	K1700524-001S	5
19			019SMPL.	1/25/2017 12:02:56 PM	Sample	K1700524-002	5
20			020SMPL.	1/25/2017 12:05:06 PM	Sample	K1700524-003	5
21			021SMPL.	1/25/2017 12:07:16 PM	Sample	K1700524-004	5
22			022_CCV.	1/25/2017 12:09:26 PM	CCV	CCV	
23			023_CCB.	1/25/2017 12:11:35 PM	CCB	CCB	
24			024SMPL.	1/25/2017 12:13:44 PM	Sample	K1700524-005	5
25			025SMPL.	1/25/2017 12:15:53 PM	Sample	K1700528-001	5
26			026SMPL.	1/25/2017 12:18:02 PM	Sample	K1700528-002	5
27			027SMPL.	1/25/2017 12:20:11 PM	Sample	K1700528-003	5
28			028SMPL.	1/25/2017 12:22:21 PM	Sample	K1700528-004	5
29			029SMPL.	1/25/2017 12:24:32 PM	Sample	K1700528-005	5
30			030SMPL.	1/25/2017 12:26:41 PM	Sample	K1700528-006	5
31	✓		031SMPL.	1/25/2017 12:28:50 PM	Sample	K1700528-007	5
32			032SMPL.	1/25/2017 12:31:01 PM	Sample	K1700528-008	5
33			033SMPL.	1/25/2017 12:33:10 PM	Sample	K1700528-009	5
34			034_CCV.	1/25/2017 12:35:19 PM	CCV	CCV	
35			035_CCB.	1/25/2017 12:37:29 PM	CCB	CCB	

Sample							
		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
36			036SMPL.	1/25/2017 12:39:38 PM	Sample	K1700530-001	5
37			037SMPL.	1/25/2017 12:41:48 PM	Sample	K1700530-002	5
38			038SMPL.	1/25/2017 12:43:57 PM	Sample	K1700530-003	5
39			039SMPL.	1/25/2017 12:46:07 PM	Sample	K1700528-007	100
40			040_CCV.	1/25/2017 12:48:16 PM	CCV	CCV	
41			041_CCB.	1/25/2017 12:52:06 PM	CCB	CCB	
42			042LCCV.	1/25/2017 12:54:16 PM	LLCCV	LLCCVS	
43			043LCCV.	1/25/2017 12:56:25 PM	LLCCV	LLCCVS	
44			044LCCV.	1/25/2017 1:01:01 PM	LLCCV	LLCCVS	
45			045_QC1.d	1/25/2017 1:03:10 PM	QC1	LLCCVS 1.0 ppb	
46			046_QC1.d	1/25/2017 1:05:20 PM	QC1	LLCCVS 1.0 ppb	
47			047_QC1.d	1/25/2017 1:08:20 PM	QC1	LLCCVS 1.0 ppb	
48			048SMPL.	1/25/2017 1:11:27 PM	Sample	K1700530-002	500
49			049_PB.d	1/25/2017 1:13:36 PM	PB	KQ1700728-01	5
50			050_LCS.d	1/25/2017 1:15:45 PM	LCS	KQ1700728-02	20
51			051_ARF.d	1/25/2017 1:17:54 PM	AllRef	K1700531-001	5
52			052SMPL.	1/25/2017 1:20:04 PM	Sample	K1700531-001L	25
53			053_PDS.d	1/25/2017 1:22:14 PM	PDS	K1700531-001A	5
54			054_Spk.d	1/25/2017 1:24:22 PM	Spike	K1700531-001S	5
55			055_Spk.d	1/25/2017 1:26:31 PM	Spike	K1700531-001S	5
56			056SMPL.	1/25/2017 1:28:41 PM	Sample	K1700531-002	5
57			057SMPL.	1/25/2017 1:30:49 PM	Sample	K1700531-003	5
58			058_CCV.	1/25/2017 1:32:58 PM	CCV	CCV	
59			059_CCB.	1/25/2017 1:35:08 PM	CCB	CCB	
60			060SMPL.	1/25/2017 1:37:20 PM	Sample	K1700531-004	5
61			061SMPL.	1/25/2017 1:39:28 PM	Sample	K1700531-005	5
62			062SMPL.	1/25/2017 1:41:37 PM	Sample	K1700531-006	5
63			063_CCV.	1/25/2017 1:43:47 PM	CCV	CCV	
64			064_CCB.	1/25/2017 1:45:57 PM	CCB	CCB	
65			065LCCV.	1/25/2017 1:48:06 PM	LLCCV	LLCCVS	
66			066LCCV.	1/25/2017 1:50:16 PM	LLCCV	LLCCVS	
67			067SMPL.	1/25/2017 1:52:26 PM	Sample	LLCCVS 1.0 ppb	

Analyte				
Name		Mass	ISTD	Tune Mode
1	Zn	66	72	He

Analyte				
Name		Mass	ISTD	Tune Mode
2	[Pb]	206	175	He
3	[Pb]	207	175	He
4	Pb	208	175	He
5	Ge	72		He
6	Lu	175		He

US EPA Tune Check Sample Report

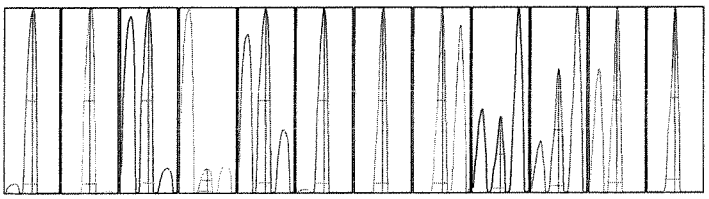
Batch Folder D:\Data\Experiments\012517A.b
Report Comment ALS Tune
Instrument Name G3281A JP13482848

[No Gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	101136	0.44	5.00	
9	20505	0.68	5.00	
24	116656	0.61	5.00	
25	15600	0.49	5.00	
26	17862	1.87	5.00	
59	147033	0.64	5.00	
115	238668	0.90	5.00	
206	72755	0.88	5.00	
207	66275	1.43	5.00	
208	160147	1.17	5.00	
209	236775	0.76	5.00	
238	352471	1.19	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	101518	101670	100982	100631	100878
9	20519	20472	20724	20469	20342
24	116049	116644	116600	117840	116148
25	15701	15521	15548	15662	15569
26	17810	18240	17460	18161	17637
59	147949	147221	146594	145646	147757
115	240755	240794	238674	237124	235993
206	73334	73295	72996	71920	72231
207	67837	66474	65902	65620	65543
208	162828	160751	160240	159048	157865
209	239611	237500	235888	235357	235517
238	357510	354609	353569	349917	346752

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	17603	7.05	6.9 - 7.1		0.771	0.900	
9	3592	9.00	8.9 - 9.1		0.780	0.900	
24	20243	24.00	23.9 - 24.1		0.780	0.900	
25	2692	25.00	24.9 - 25.1		0.779	0.900	
26	3118	26.00	25.9 - 26.1		0.777	0.900	
59	27711	59.00	58.9 - 59.1		0.765	0.900	
115	49959	115.00	114.9 - 115.1		0.727	0.900	
206	15862	206.05	205.9 - 206.1		0.781	0.900	
207	14380	207.00	206.9 - 207.1		0.743	0.900	
208	34877	208.00	207.9 - 208.1		0.752	0.900	
209	51924	209.00	208.9 - 209.1		0.754	0.900	
238	74863	238.00	237.9 - 238.1		0.773	0.900	

X% = 5 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 279 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1600	W	Carrier Gas	0.57	L/min			
RF Matching	1.76	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	5.2	V			
Extract 2	-95.0	V	Cell Entrance	-30	V			
Omega Bias	-55	V	Cell Exit	-50	V			
Deflect	10.2	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	180	V			
Energy Discrimination	5.0	V						

Calibration Blank Report

Sample Table

Sample Name	Blank
Data File Name	001CALB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:23:55-08:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Zn	66	He	21	188.28
[Pb]	206	He	22	38.94
[Pb]	207	He	11	412.30
Pb	208	He	86	26.68

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Ge	72	He	46942	0.89
Lu	175	He	1786880	3.20

Calibration Standard Report

Sample Table

Sample Name	25ppb
Data File Name	002CALS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:26:05-08:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Zn	66	He	5709	0.02
[Pb]	206	He	100971	0.00
[Pb]	207	He	93090	0.00
Pb	208	He	424656	0.00

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46095	1.67	46942	98.20	30	120	
Lu	175	He	1788873	1.76	1786880	100.11	30	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	003_ICV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:28:14-08:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	24.844	5.273	5719	4.42	25	99	
[Pb]	206	He	25.025	1.835	103092	0.85	25	100	
[Pb]	207	He	25.942	1.547	98533	1.25	25	104	
Pb	208	He	25.348	1.715	439183	0.72	25	101	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46466	0.89	46942	98.99	30	120	
Lu	175	He	1824542	1.24	1786880	102.11	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	004_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:30:23-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	24.198	4.339	5553	4.61	25	97	
[Pb]	206	He	25.296	1.605	100800	0.29	25	101	
[Pb]	207	He	25.415	2.216	93364	0.85	25	102	
Pb	208	He	25.474	1.763	426913	0.37	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46304	0.84	46942	98.64	30	120	
Lu	175	He	1764868	1.38	1786880	98.77	30	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	005_ICB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:32:32-08:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.098	45.7	43	26.6	1	
[Pb]	206	He	0.003	103.1	32	33.3	0.1	
[Pb]	207	He	0.004	76.9	27	45.1	0.1	
Pb	208	He	0.005	14.2	162	6.6	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46213	2.84	46942	98.45	30	120	
Lu	175	He	1758957	0.55	1786880	98.44	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	006_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:34:41-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.037	137.6	29	40.5	1	
[Pb]	206	He	-0.001	-158.2	17	52.9	0.1	
[Pb]	207	He	0.001	426.2	13	66.1	0.1	
Pb	208	He	0.000	-478.1	80	38.2	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45732	1.38	46942	97.42	30	120	
Lu	175	He	1795042	1.44	1786880	100.46	30	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICVS
Data File Name	007LICV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:36:50-08:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

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QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.027	8.245	257	7.23	1	103	
[Pb]	206	He	0.127	10.969	541	10.71	0.1	127	
[Pb]	207	He	0.116	23.634	447	22.77	0.1	116	
Pb	208	He	0.121	4.226	2152	3.55	0.1	121	LLICV Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46511	0.93	46942	99.08	30	120	
Lu	175	He	1805087	0.53	1786880	101.02	30	120	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICVS
Data File Name	008LICV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:39:10-08:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.043	27.876	260	25.93	1	104	
[Pb]	206	He	0.113	9.713	488	9.18	0.1	113	
[Pb]	207	He	0.125	14.264	484	15.27	0.1	125	
Pb	208	He	0.116	5.366	2102	6.24	0.1	116	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46417	0.28	46942	98.88	30	120	
Lu	175	He	1822100	1.29	1786880	101.97	30	120	

Sample Report

Sample Table

Sample Name	LRSTD
Data File Name	009SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:41:20-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	1016.644	1.15	226928	0.45	
[Pb]	206	He	1088.484	1.79	4340067	0.03	
[Pb]	207	He	1057.566	0.26	3888033	0.03	
Pb	208	He	1057.391	1.56	17731805	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45209	1.13	46942	96.31	30	120	
Lu	175	He	1766131	0.76	1786880	98.84	30	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	010ICSA.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:43:30-08:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	QC Flag
Zn	66	He	0.512	22.5	120	21.0	
[Pb]	206	He	0.205	6.4	772	6.2	
[Pb]	207	He	0.195	1.7	670	1.3	
Pb	208	He	0.195	4.3	3095	3.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	40199	1.99	46942	85.64	30	120	
Lu	175	He	1628079	1.18	1786880	91.11	30	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	011ICSB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:45:38-08:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	21.188	5.116	4166	4.94	25	84.8	
[Pb]	206	He	0.153	8.117	599	8.45	-1	-15.3	
[Pb]	207	He	0.137	13.777	489	12.98	-1	-13.7	
Pb	208	He	0.139	4.734	2301	4.63	-1	-13.9	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	39656	0.33	46942	84.48	30	120	
Lu	175	He	1677694	0.80	1786880	93.89	30	120	

Prep Blank (PB) Report

Sample Table

Sample Name	KQ1700722-01
Data File Name	012_PB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:47:48-08:00
Sample Type	PB
Dilution	1
Comment	5
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.296	25.6	83	18.3	1	
[Pb]	206	He	0.017	16.1	88	11.0	0.1	
[Pb]	207	He	0.012	48.7	54	37.4	0.1	
Pb	208	He	0.015	16.2	322	11.4	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	43665	1.38	46942	93.02	30	120	
Lu	175	He	1719100	1.76	1786880	96.21	30	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	KQ1700722-02
Data File Name	013_LCS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:50:01-08:00
Sample Type	LCS
Dilution	1
Comment	20
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	55.049	3.016	12409	2.82	50	110.1	
[Pb]	206	He	49.756	0.857	198076	0.63	50	99.5	
[Pb]	207	He	51.377	1.549	188560	0.70	50	102.8	
Pb	208	He	50.506	1.417	845590	0.46	50	101.0	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45582	0.59	46942	97.10	30	120	
Lu	175	He	1763190	1.19	1786880	98.67	30	120	

All Reference Sample Report

Sample Table

Sample Name	K1700524-001
Data File Name	014_ARF.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:52:11-08:00
Sample Type	AllRef
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	100.158	1.52	22980	0.44	
[Pb]	206	He	166.419	0.75	670924	0.02	
[Pb]	207	He	158.057	1.29	587493	0.03	
Pb	208	He	162.124	1.04	2748903	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46428	0.48	46942	98.91	30	120	
Lu	175	He	1785737	1.22	1786880	99.94	30	120	

Sample Report

Sample Table

Sample Name	K1700524-001L
Data File Name	015SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:54:20-08:00
Sample Type	Sample
Dilution	1
Comment	25
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	20.455	3.96	4768	0.43	
[Pb]	206	He	33.487	2.84	138271	0.02	
[Pb]	207	He	32.273	2.03	122872	0.03	
Pb	208	He	32.761	2.01	568990	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47002	0.79	46942	100.13	30	120	
Lu	175	He	1829420	2.50	1786880	102.38	30	120	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name	K1700524-001A
Data File Name	016_PDS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:56:28-08:00
Sample Type	PDS
Dilution	1
Comment	5
QC Ref File Name	014_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	145.866	1.182	33736	1.37	50	91	
[Pb]	206	He	211.673	1.405	872412	0.18	50	91	
[Pb]	207	He	203.658	1.589	773902	0.42	50	91	
Pb	208	He	209.005	1.468	3622952	0.35	50	94	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46814	0.37	46942	99.73	30	120	
Lu	175	He	1825757	1.57	1786880	102.18	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700524-001S
Data File Name	017_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T11:58:37-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	014_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	285.949	1.080	64690	1.20	200	93	
[Pb]	206	He	379.440	0.792	1527647	1.73	200	107	
[Pb]	207	He	367.913	1.227	1365546	0.27	200	105	
Pb	208	He	367.668	0.944	6225050	0.37	200	103	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45806	0.74	46942	97.58	30	120	
Lu	175	He	1783148	0.96	1786880	99.79	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700524-001SD
Data File Name	018_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:00:47-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	014_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	276.491	1.078	63032	1.21	200	88	
[Pb]	206	He	403.264	3.717	1606689	3.66	200	118	
[Pb]	207	He	384.499	0.967	1412444	0.47	200	113	
Pb	208	He	388.733	1.654	6513750	1.05	200	113	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46157	0.13	46942	98.33	30	120	
Lu	175	He	1764840	1.35	1786880	98.77	30	120	

Sample Report

Sample Table

Sample Name	K1700524-002
Data File Name	019SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:02:56-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	123.507	2.31	27540	0.45	
[Pb]	206	He	81.486	1.18	321687	0.03	
[Pb]	207	He	78.058	0.55	284128	0.03	
Pb	208	He	79.629	1.10	1322162	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45146	2.50	46942	96.17	30	120	
Lu	175	He	1748504	0.78	1786880	97.85	30	120	

Sample Report

Sample Table

Sample Name	K1700524-003
Data File Name	020SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:05:06-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	122.697	1.49	28242	0.43	
[Pb]	206	He	176.244	2.66	712411	0.02	
[Pb]	207	He	166.720	2.06	621409	0.03	
Pb	208	He	172.069	1.16	2925879	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46582	0.65	46942	99.23	30	120	
Lu	175	He	1790961	1.94	1786880	100.23	30	120	

Sample Report

Sample Table

Sample Name	K1700524-004
Data File Name	021SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:07:16-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	114.932	1.11	26656	0.43	
[Pb]	206	He	133.230	0.96	551753	0.02	
[Pb]	207	He	127.337	0.98	486231	0.03	
Pb	208	He	129.719	1.29	2259387	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46939	0.39	46942	99.99	30	120	
Lu	175	He	1834350	1.01	1786880	102.66	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	022_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:09:26-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.596	5.623	5934	6.24	25	102	
[Pb]	206	He	25.731	2.536	104746	1.45	25	103	
[Pb]	207	He	25.658	2.152	96299	1.01	25	103	
Pb	208	He	25.630	2.160	438828	0.92	25	103	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46780	0.70	46942	99.66	30	120	
Lu	175	He	1803071	1.26	1786880	100.91	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	023_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:11:35-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.073	58.2	38	27.0	1	
[Pb]	206	He	0.011	38.3	69	24.4	0.1	
[Pb]	207	He	0.009	17.5	44	11.5	0.1	
Pb	208	He	0.009	26.6	241	20.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46522	1.17	46942	99.11	30	120	
Lu	175	He	1820513	2.92	1786880	101.88	30	120	

Sample Report

Sample Table

Sample Name	K1700524-005
Data File Name	024SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:13:44-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	130.903	0.58	30517	0.43	
[Pb]	206	He	142.486	1.26	586520	0.02	
[Pb]	207	He	135.571	2.02	514469	0.03	
Pb	208	He	138.712	1.66	2401313	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47186	1.79	46942	100.52	30	120	
Lu	175	He	1823544	2.42	1786880	102.05	30	120	

Sample Report

Sample Table

Sample Name	K1700528-001
Data File Name	025SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:15:53-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	71.033	2.33	16521	0.43	
[Pb]	206	He	48.214	1.46	196333	0.02	
[Pb]	207	He	45.029	2.13	169047	0.03	
Pb	208	He	46.358	1.35	793958	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47047	0.18	46942	100.22	30	120	
Lu	175	He	1803715	1.46	1786880	100.94	30	120	

Sample Report

Sample Table

Sample Name	K1700528-002
Data File Name	026SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:18:02-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	80.240	2.66	19007	0.42	
[Pb]	206	He	238.289	2.02	968430	0.02	
[Pb]	207	He	229.281	1.36	859199	0.03	
Pb	208	He	233.781	1.15	3996351	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47919	0.38	46942	102.08	30	120	
Lu	175	He	1800431	1.77	1786880	100.76	30	120	

Sample Report

Sample Table

Sample Name	K1700528-003
Data File Name	027SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:20:11-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	73.395	1.12	16755	0.44	
[Pb]	206	He	416.568	0.90	1692114	0.02	
[Pb]	207	He	382.540	0.65	1432688	0.03	
Pb	208	He	393.208	0.91	6717494	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46179	0.09	46942	98.37	30	120	
Lu	175	He	1799131	0.49	1786880	100.69	30	120	

Sample Report

Sample Table

Sample Name	K1700528-004
Data File Name	028SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:22:21-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	55.437	1.05	13311	0.42	
[Pb]	206	He	43.488	1.81	181403	0.02	
[Pb]	207	He	41.020	1.88	157758	0.03	
Pb	208	He	41.883	1.83	734800	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48550	0.68	46942	103.43	30	120	
Lu	175	He	1847564	0.82	1786880	103.40	30	120	

Sample Report

Sample Table

Sample Name	K1700528-005
Data File Name	029SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:24:32-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	58.579	1.20	13830	0.42	
[Pb]	206	He	53.091	0.53	219256	0.02	
[Pb]	207	He	50.189	1.45	191102	0.03	
Pb	208	He	51.545	1.15	895312	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47744	0.33	46942	101.71	30	120	
Lu	175	He	1829019	0.19	1786880	102.36	30	120	

Sample Report

Sample Table

Sample Name	K1700528-006
Data File Name	030SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:26:41-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	88.347	1.68	21301	0.41	
[Pb]	206	He	541.312	2.14	2282138	0.02	
[Pb]	207	He	511.029	2.22	1986700	0.03	
Pb	208	He	512.670	1.20	9090678	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48786	0.69	46942	103.93	30	120	
Lu	175	He	1867493	0.97	1786880	104.51	30	120	

Sample Report

Sample Table

Sample Name	K1700528-007
Data File Name	031SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:28:50-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

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QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	124.979	0.39	29818	0.42	
[Pb]	206	He	1212.935	2.77	5027497	0.02	>LDR
[Pb]	207	He	1146.117	1.38	4381271	0.03	>LDR
~~Pb~~	~~208~~	He	1161.793	2.60	20253194	0.01	>LDR

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QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48289	1.87	46942	102.87	30	120	
Lu	175	He	1836641	2.39	1786880	102.78	30	120	

Sample Report

Sample Table

Sample Name	K1700528-008
Data File Name	032SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:31:01-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	120.366	2.12	28533	0.42	
[Pb]	206	He	122.661	0.91	516623	0.02	
[Pb]	207	He	117.873	0.56	457724	0.03	
Pb	208	He	119.504	0.58	2116898	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47979	0.89	46942	102.21	30	120	
Lu	175	He	1865436	0.67	1786880	104.40	30	120	

Sample Report

Sample Table

Sample Name	K1700528-009
Data File Name	033SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:33:10-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	71.675	3.14	16631	0.43	
[Pb]	206	He	114.600	0.37	470709	0.02	
[Pb]	207	He	109.162	0.34	413394	0.03	
Pb	208	He	111.703	0.41	1929683	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46943	1.95	46942	100.00	30	120	
Lu	175	He	1819165	0.81	1786880	101.81	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	034_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:35:19-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.600	1.671	6230	2.28	25	102	
[Pb]	206	He	25.210	1.097	107406	0.61	25	101	
[Pb]	207	He	24.741	2.202	97170	1.02	25	99	
Pb	208	He	24.809	1.616	444513	0.13	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49111	0.62	46942	104.62	30	120	
Lu	175	He	1886918	1.71	1786880	105.60	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	035_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:37:29-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.051	145.6	33	52.0	1	
[Pb]	206	He	0.015	31.2	89	22.6	0.1	
[Pb]	207	He	0.019	11.0	84	9.9	0.1	
Pb	208	He	0.016	13.1	376	9.8	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47712	0.50	46942	101.64	30	120	
Lu	175	He	1877643	0.42	1786880	105.08	30	120	

Sample Report

Sample Table

Sample Name	K1700530-001
Data File Name	036SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:39:38-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	132.119	1.45	30893	0.43	
[Pb]	206	He	216.337	1.66	880285	0.02	
[Pb]	207	He	206.221	2.41	773619	0.03	
Pb	208	He	210.184	1.35	3597260	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47330	1.58	46942	100.83	30	120	
Lu	175	He	1802628	1.97	1786880	100.88	30	120	

Sample Report

Sample Table

Sample Name	K1700530-002
Data File Name	037SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:41:48-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	84.342	1.81	17899	0.47	
[Pb]	206	He	7204.827	0.83	28827293	0.02	>LDR
[Pb]	207	He	6373.541	1.00	23511837	0.03	>LDR
~~Pb~~	~~208~~	~~He~~	~~6631.892~~	~~0.55~~	~~111602213~~	~~0.01~~	~~>LDR~~

1/25/17

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	42942	1.08	46942	91.48	30	120	
Lu	175	He	1772279	1.87	1786880	99.18	30	120	

Sample Report

Sample Table

Sample Name	K1700530-003
Data File Name	038SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:43:57-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	119.335	1.49	24749	0.48	
[Pb]	206	He	536.461	2.77	2104816	0.03	
[Pb]	207	He	497.119	0.59	1798929	0.03	
Pb	208	He	502.707	1.24	8297403	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	41973	1.13	46942	89.41	30	120	
Lu	175	He	1738535	2.22	1786880	97.29	30	120	

Sample Report

Sample Table

Sample Name	K1700528-007
Data File Name	039SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:46:07-08:00
Sample Type	Sample
Dilution	1
Comment	100
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	5.656	4.13	1330	0.43	
[Pb]	206	He	54.448	1.96	225754	0.02	
[Pb]	207	He	52.565	2.79	200913	0.03	
Pb	208	He	53.226	2.37	928124	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46890	0.95	46942	99.89	30	120	
Lu	175	He	1836936	2.69	1786880	102.80	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	040_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:48:16-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.398	2.261	5829	1.91	25	102	
[Pb]	206	He	26.054	3.099	106898	0.84	25	104	
[Pb]	207	He	25.504	2.752	96477	0.28	25	102	
Pb	208	He	25.609	2.847	441916	0.27	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46318	0.78	46942	98.67	30	120	
Lu	175	He	1817938	2.79	1786880	101.74	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	041_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:52:06-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.088	50.0	41	24.8	1	
[Pb]	206	He	0.027	14.4	136	13.5	0.1	
[Pb]	207	He	0.032	16.4	136	16.4	0.1	
Pb	208	He	0.028	6.6	573	7.3	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46453	0.51	46942	98.96	30	120	
Lu	175	He	1836423	1.68	1786880	102.77	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	042LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:54:16-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.023	20.998	251	16.91	1	102	
[Pb]	206	He	0.130	14.611	546	15.51	0.1	130	
[Pb]	207	He	0.141	9.538	534	10.84	0.1	141	
Pb	208	He	0.141	3.794	2481	4.83	0.1	141	LLCCV Failed

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3/1/2017

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45792	2.58	46942	97.55	30	120	
Lu	175	He	1785277	1.69	1786880	99.91	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	043LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T12:56:25-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

1/25/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.090	14.003	266	13.19	1	109	
[Pb]	206	He	0.128	11.529	549	10.89	0.1	128	
[Pb]	207	He	0.137	3.071	531	3.68	0.1	137	
Pb	208	He	0.136	8.018	2443	7.57	0.1	136	LLCCV Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45548	0.27	46942	97.03	30	120	
Lu	175	He	1821100	1.00	1786880	101.92	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	044LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:01:01-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

B 1/25/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	0.841	1.934	209	1.84	1	84	
[Pb]	206	He	0.122	6.566	526	5.39	0.1	122	
[Pb]	207	He	0.100	7.207	392	5.97	0.1	100	
Pb	208	He	0.112	4.311	2021	3.34	0.1	112	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45412	0.10	46942	96.74	30	120	
Lu	175	He	1822486	1.02	1786880	101.99	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	045_QC1.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:03:10-08:00
Sample Type	QC1
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

Write 6 QC Table

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.386	10.931	333	9.54	2	69	QC1 Main CR1 Failed
[Pb]	206	He	1.165	1.980	4745	1.13	0.2	583	QC1 Main CR1 Failed
[Pb]	207	He	1.165	2.641	4367	3.12	0.2	583	QC1 Main CR1 Failed
Pb	208	He	1.166	0.550	19976	1.27	0.2	583	QC1 Main CR1 Failed

11790

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45747	1.35	46942	97.45	30	120	
Lu	175	He	1795705	0.99	1786880	100.49	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	046_QC1.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:05:20-08:00
Sample Type	QC1
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

1/25/17

3 4/24

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.594	18.766	381	18.21	2	80	
[Pb]	206	He	1.194	2.412	4870	1.71	0.2	597	QC1 Main CR1 Failed
[Pb]	207	He	1.174	4.436	4407	4.82	0.2	587	QC1 Main CR1 Failed
Pb	208	He	1.172	1.589	20105	2.13	0.2	586	QC1 Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45773	0.52	46942	97.51	30	120	
Lu	175	He	1798958	0.97	1786880	100.68	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	047_QC1.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:08:20-08:00
Sample Type	QC1
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

B 1/25/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.300	25.679	316	25.36	1	130	
[Pb]	206	He	1.158	2.739	4741	1.30	1	116	
[Pb]	207	He	1.222	1.677	4603	0.11	1	122	
Pb	208	He	1.192	2.341	20511	1.31	1	119	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	45848	2.24	46942	97.67	30	120	
Lu	175	He	1805233	1.67	1786880	101.03	30	120	

Sample Report

Sample Table

Sample Name	K1700530-002
Data File Name	048SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:11:27-08:00
Sample Type	Sample
Dilution	1
Comment	500
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	0.891	3.25	226	0.40	
[Pb]	206	He	56.163	2.06	232148	0.02	
[Pb]	207	He	51.175	1.45	195036	0.03	
Pb	208	He	52.972	1.44	920944	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46519	0.23	46942	99.10	30	120	
Lu	175	He	1831006	1.56	1786880	102.47	30	120	

Prep Blank (PB) Report

Sample Table

Sample Name	KQ1700728-01
Data File Name	049_PB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:13:36-08:00
Sample Type	PB
Dilution	1
Comment	5
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.353	15.0	103	12.9	1	
[Pb]	206	He	0.019	31.4	102	24.9	0.1	
[Pb]	207	He	0.028	4.1	118	3.3	0.1	
Pb	208	He	0.022	9.6	476	8.4	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47146	1.21	46942	100.43	30	120	
Lu	175	He	1838324	0.50	1786880	102.88	30	120	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name	KQ1700728-02
Data File Name	050_LCS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:15:45-08:00
Sample Type	LCS
Dilution	1
Comment	20
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	56.277	0.337	13257	1.31	50	112.6	
[Pb]	206	He	48.664	0.738	206268	0.52	50	97.3	
[Pb]	207	He	49.772	1.182	194498	0.76	50	99.5	
Pb	208	He	49.049	0.927	874370	0.47	50	98.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47635	1.16	46942	101.48	30	120	
Lu	175	He	1877289	1.06	1786880	105.06	30	120	

All Reference Sample Report

Sample Table

Sample Name	K1700531-001
Data File Name	051_ARF.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:17:54-08:00
Sample Type	AllRef
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	230.077	2.10	52674	0.44	
[Pb]	206	He	63.936	0.45	262331	0.02	
[Pb]	207	He	60.911	0.28	230424	0.03	
Pb	208	He	62.256	0.58	1074315	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46366	2.54	46942	98.77	30	120	
Lu	175	He	1817228	0.60	1786880	101.70	30	120	

Sample Report

Sample Table

Sample Name	K1700531-001L
Data File Name	052SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:20:04-08:00
Sample Type	Sample
Dilution	1
Comment	25
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	47.906	2.57	11246	0.43	
[Pb]	206	He	13.762	3.11	57074	0.02	
[Pb]	207	He	13.196	2.20	50458	0.03	
Pb	208	He	13.424	3.04	234148	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47465	1.31	46942	101.11	30	120	
Lu	175	He	1837086	2.49	1786880	102.81	30	120	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name	K1700531-001A
Data File Name	053_PDS.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:22:14-08:00
Sample Type	PDS
Dilution	1
Comment	5
QC Ref File Name	051_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	272.708	3.000	63703	1.14	50	85	
[Pb]	206	He	114.467	1.432	468933	0.38	50	101	
[Pb]	207	He	110.876	1.265	418796	0.31	50	100	
Pb	208	He	112.557	1.272	1939390	0.67	50	101	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47315	2.20	46942	100.79	30	120	
Lu	175	He	1814707	1.57	1786880	101.56	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700531-001S
Data File Name	054_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:24:22-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	051_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

X PDS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	343.451	1.993	80849	0.48	200	57	Flag
[Pb]	206	He	236.550	1.578	980059	1.65	200	86	
[Pb]	207	He	238.819	1.865	912222	1.26	200	89	
Pb	208	He	238.954	2.482	4163021	0.66	200	88	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47677	2.05	46942	101.57	30	120	
Lu	175	He	1835658	3.14	1786880	102.73	30	120	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name	K1700531-001SD
Data File Name	055_Spk.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:26:31-08:00
Sample Type	Spike
Dilution	1
Comment	5
QC Ref File Name	051_ARF.d
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

* PDS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Zn	66	He	346.888	1.003	79724	1.64	200	58	Flag
[Pb]	206	He	233.012	0.676	948737	0.41	200	85	
[Pb]	207	He	233.960	0.551	878314	0.72	200	87	
Pb	208	He	234.046	0.472	4008004	0.70	200	86	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	46534	0.73	46942	99.13	30	120	
Lu	175	He	1803433	0.57	1786880	100.93	30	120	

Sample Report

Sample Table

Sample Name	K1700531-002
Data File Name	056SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:28:41-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	173.758	1.74	41128	0.42	
[Pb]	206	He	47.366	0.21	197250	0.02	
[Pb]	207	He	44.954	0.89	172588	0.03	
Pb	208	He	46.006	0.99	805720	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47921	1.16	46942	102.09	30	120	
Lu	175	He	1844308	1.13	1786880	103.21	30	120	

Sample Report

Sample Table

Sample Name	K1700531-003
Data File Name	057SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:30:49-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	199.878	1.63	48450	0.41	
[Pb]	206	He	99.726	1.57	420172	0.02	
[Pb]	207	He	94.462	1.71	366936	0.03	
Pb	208	He	97.334	1.64	1724782	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49078	1.10	46942	104.55	30	120	
Lu	175	He	1866429	2.01	1786880	104.45	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	058_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:32:58-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.734	2.739	6308	3.96	25	103	
[Pb]	206	He	25.451	0.725	108798	0.39	25	102	
[Pb]	207	He	25.637	2.229	101025	1.23	25	103	
Pb	208	He	25.433	1.191	457244	0.31	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49461	1.78	46942	105.37	30	120	
Lu	175	He	1893108	0.99	1786880	105.94	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	059_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:35:08-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.081	22.5	41	9.4	1	
[Pb]	206	He	0.018	13.8	101	10.1	0.1	
[Pb]	207	He	0.015	5.6	72	5.3	0.1	
Pb	208	He	0.017	13.3	406	8.3	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48450	1.89	46942	103.21	30	120	
Lu	175	He	1911030	2.26	1786880	106.95	30	120	

Sample Report

Sample Table

Sample Name	K1700531-004
Data File Name	060SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:37:20-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	245.621	1.61	58499	0.42	
[Pb]	206	He	91.106	1.75	387763	0.02	
[Pb]	207	He	86.873	1.41	340913	0.03	
Pb	208	He	88.881	1.18	1591136	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48224	1.31	46942	102.73	30	120	
Lu	175	He	1885411	1.56	1786880	105.51	30	120	

Sample Report

Sample Table

Sample Name	K1700531-005
Data File Name	061SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:39:28-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	129.785	0.94	32376	0.40	
[Pb]	206	He	91.133	3.25	391897	0.02	
[Pb]	207	He	86.104	1.10	341479	0.03	
Pb	208	He	88.700	2.33	1604427	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	50490	0.42	46942	107.56	30	120	
Lu	175	He	1905365	1.87	1786880	106.63	30	120	

Sample Report

Sample Table

Sample Name	K1700531-006
Data File Name	062SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:41:37-08:00
Sample Type	Sample
Dilution	1
Comment	5
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	178.267	2.44	42212	0.42	
[Pb]	206	He	45.055	2.62	189329	0.02	
[Pb]	207	He	43.383	3.10	168070	0.03	
Pb	208	He	44.080	2.75	779043	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	47940	0.88	46942	102.13	30	120	
Lu	175	He	1861496	1.44	1786880	104.18	30	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	063_CCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:43:47-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	25.463	1.750	6416	0.60	25	102	
[Pb]	206	He	25.061	0.424	110812	1.39	25	100	
[Pb]	207	He	24.706	1.153	100704	0.79	25	99	
Pb	208	He	24.801	1.009	461178	0.81	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	50862	2.07	46942	108.35	30	120	
Lu	175	He	1958175	1.82	1786880	109.59	30	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	064_CCB.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:45:57-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Zn	66	He	0.130	22.8	54	12.7	1	
[Pb]	206	He	0.008	42.2	59	26.8	0.1	
[Pb]	207	He	0.017	7.3	81	8.6	0.1	
Pb	208	He	0.015	15.1	362	12.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	50027	0.83	46942	106.57	30	120	
Lu	175	He	1903289	2.45	1786880	106.51	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	065LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:48:06-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.167	11.140	306	10.14	1	117	
[Pb]	206	He	0.107	17.197	479	14.10	0.1	107	
[Pb]	207	He	0.098	13.717	400	13.02	0.1	98	
~~Pb~~	~~208~~	~~He~~	~~0.106~~	~~9.840~~	~~1992~~	~~8.09~~	~~0.1~~	~~106~~	

1/25/17

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	49194	0.22	46942	104.80	30	120	
Lu	175	He	1894052	2.45	1786880	106.00	30	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name	LLCCVS
Data File Name	066LCCV.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:50:16-08:00
Sample Type	LLCCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

1/26/17

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Zn	66	He	1.186	9.275	304	7.77	1	119	
[Pb]	206	He	0.116	0.799	522	2.24	0.1	116	
[Pb]	207	He	0.098	7.354	402	8.78	0.1	98	
Pb	208	He	0.103	1.886	1965	1.97	0.1	103	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48309	0.85	46942	102.91	30	120	
Lu	175	He	1908518	1.63	1786880	106.81	30	120	

Sample Report

Sample Table

Sample Name	LLCCVS 1.0 ppb
Data File Name	067SMPL.d
Data Path Name	D:\Data\Experiments\012517B2.b
Acq Date Time	2017-01-25T13:52:26-08:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	001CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Zn	66	He	3.205	4.38	790	0.41	
[Pb]	206	He	1.124	3.94	4702	0.02	
[Pb]	207	He	1.102	5.99	4239	0.03	
Pb	208	He	1.094	4.36	19233	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	He	48558	0.93	46942	103.44	30	120	
Lu	175	He	1844160	1.98	1786880	103.21	30	120	

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

February 14, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on February 2, 2017. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #38037:

SDG #	**Fraction:**
K1700524, K1700528 K1700530, K1700531	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

EDD 90/10 ADR/IV

LDC #38037 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

LDC	SDG#	DATE REC'D	(2) DATE DUE	Pb (6020A)		Zn (6020A)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	K1700524	02/02/17	02/16/17	0	5	-	-																														
B	K1700528	02/02/17	02/16/17	0	9	-	-																														
C	K1700530	02/02/17	02/16/17	0	3	-	-																														
D	K1700531	02/02/17	02/16/17	-	-	0	6																														
Total	T/PG			0	17	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23

Shaded cells indicate Level IV validation (all other cells are ADR validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\38037ST.wpd

Data Validation Report
Fort Bliss, Castner Range

SDG: K1700524, K1700528, K1700530, and K1700531

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

February 10, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and Level IV data validation results for samples collected during the January 2017 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by Environmental Protection Agency (EPA) SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilutions, laboratory control sample (LCS), field duplicates, split duplicate samples, and internal standards. Approximately 13 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprises a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.

NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software.

VII. Field Blanks

No field blanks were identified in these SDGs.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of zinc in one MS/MSD pair. No data were qualified for zinc MS/MSD %R outside QC limits when the serial dilution was within QC limits.

IX. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The analysis criteria

were met.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XII. Field Duplicates/Split Samples

Three field duplicate pairs were collected and analyzed for metals. All RPDs were within QC limits with the exception of one duplicate pair for lead. The associated sample results were qualified as detected estimated (J). The field duplicate result comparisons are provided in Enclosure I.

Samples FTBL-SS-B066-0-6-011617 and FTBL-SS-B066-0-6-011617-QA (from SDG FA40440) were identified as split duplicate samples. No metals were detected in any of the split samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (≤50)	Qualifiers
	FTBL-SS-B066-0-6-011617 (SDG: K1700528)	FTBL-SS-B066-0-6-011617-QA (SDG: FA40440)		
Lead	18.6	48.8	90	J (all detects)

XIII. Internal Standards

All internal standard areas and percent recoveries were within QC limits.

XIV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to field duplicate RPD and split duplicate sample RPD, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
16-Jan-2017	FD-011617-2	K1700524-005	FD	EPA 3050B	6020A	III
16-Jan-2017	FD-011617-1	K1700528-009	FD	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B066-0-6-011617	K1700528-001	FD	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B065-0-6-011617	K1700528-002	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B064-0-6-011617	K1700528-003	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B061-0-6-011617	K1700528-004	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B062-0-6-011617	K1700528-005	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B063-0-6-011617	K1700528-006	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B072-0-6-011617	K1700528-007	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B071-0-6-011617	K1700528-008	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B069-0-6-011617	K1700524-001	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B069-0-6-011617MS	KQ1700722-04	MS	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B068-0-6-011617	K1700524-002	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B067-0-6-011617	K1700524-003	N	EPA 3050B	6020A	III
16-Jan-2017	FTBL-SS-B070-0-6-011617	K1700524-004	N	EPA 3050B	6020A	III
17-Jan-2017	FD-011717-1	K1700531-006	FD	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SS-B073-0-6-011717	K1700530-001	N	EPA 3050B	6020A	IV
17-Jan-2017	FTBL-SS-B075-0-6-011717	K1700530-002	N	EPA 3050B	6020A	IV
17-Jan-2017	FTBL-SS-B074-0-6-011717	K1700530-003	N	EPA 3050B	6020A	IV
17-Jan-2017	FTBL-SED-072-0-6-011717	K1700531-002	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-073-0-6-011717	K1700531-001	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-073-0-6-011717MS	KQ1700728-04	MS	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-070-0-6-011717	K1700531-003	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-071-0-6-011717	K1700531-004	N	EPA 3050B	6020A	III
17-Jan-2017	FTBL-SED-069-0-6-011717	K1700531-005	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation
N = Normal Sample
FD = Field Duplicate
TB = Trip Blank
FB = Field Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1700524, K1700528, K1700530,

Laboratory: ALS_K

EDD Filename: K1700524_SEDD2A_rev, K1700528_SEDD2A_rev, K1700530_SEDD2A_rev, K1700531_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1700528

Method Category: METALS

Method: 6020A ***Matrix:*** Soil

Sample ID: FD-011617-1 ***Collected:*** 1/16/2017 12:00:00 AM ***Analysis Type:*** Initial ***Dilution:*** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	50.0	=	0.04	LOD	0.45	LOQ	mg/Kg	J	Fd

Sample ID: FTBL-SS-B066-0-6-011617 ***Collected:*** 1/16/2017 2:24:00 PM ***Analysis Type:*** Initial ***Dilution:*** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	18.6	=	0.04	LOD	0.40	LOQ	mg/Kg	J	Fd

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Data Qualifier Summary

Lab Reporting Batch ID: K1700524, K1700528, K1700530,

Laboratory: ALS_K

EDD Filename: K1700524_SEDD2A_rev, K1700528_SEDD2A_rev, K1700530_SEDD2A_rev, K1700531_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

Reason Code	*Description*
Fd	Field Duplicate Precision
Ms	Matrix Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control
Outlier Reports

K1700524

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700524 **Laboratory: ALS_K**

EDD Filename: K1700524_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B070-0-6-011617 (Dry)	**FD-011617-2 (Dry)**			
LEAD	59.7	62.7	5	50.00	No Qualifiers Applied

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 38037A4a
SDG #: K1700524
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 8/30/17
Page: 1 of 1
Reviewer: CA
2nd Reviewer: KK

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data		

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank
SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B069-0-6-011617	K1700524-001	Soil	01/16/17
2	FTBL-SS-B068-0-6-011617	K1700524-002	Soil	01/16/17
3	FTBL-SS-B067-0-6-011617	K1700524-003	Soil	01/16/17
4	FTBL-SS-B070-0-6-011617	K1700524-004	Soil	01/16/17
5	FD-011617-2	K1700524-005	Soil	01/16/17
6	FTBL-SS-B069-0-6-011617MS	K1700524-001MS	Soil	01/16/17
7	FTBL-SS-B069-0-6-011617MSD	K1700524-001MSD	Soil	01/16/17
8				
9				
10				
11				
12				

Notes:

Quality Control
Outlier Reports

K1700528

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700528 **Laboratory: ALS_K**

EDD Filename: K1700528_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SS-B066-0-6-011617 (Dry)	**FD-011617-1 (Dry)**			
LEAD	18.6	50.0	92	50.00	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 38037B4a
SDG #: K1700528
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 2/8/17
Page: 1 of 1
Reviewer: CA
2nd Reviewer: KK

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D (from K1700524)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	SW	Split = 1, FTBL-SS-B066-0-6-011617-QA (from FA4044O)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B066-0-6-011617	K1700528-001	Soil	01/16/17
2	FTBL-SS-B065-0-6-011617	K1700528-002	Soil	01/16/17
3	FTBL-SS-B064-0-6-011617	K1700528-003	Soil	01/16/17
4	FTBL-SS-B061-0-6-011617	K1700528-004	Soil	01/16/17
5	FTBL-SS-B062-0-6-011617	K1700528-005	Soil	01/16/17
6	FTBL-SS-B063-0-6-011617	K1700528-006	Soil	01/16/17
7	FTBL-SS-B072-0-6-011617	K1700528-007	Soil	01/16/17
8	FTBL-SS-B071-0-6-011617	K1700528-008	Soil	01/16/17
9	FD-011617-1	K1700528-009	Soil	01/16/17
10				
11				
12				

Notes:

LDC#: 38037B4b

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: OV

2nd Reviewer: KK

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	
	1	FTBL-SS-B066-0-6-011617-QA		
Lead	18.6	48.8	90	Jdet/A

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\38037B4b.wpd

Quality Control Outlier Reports

K1700530

(No Outliers)

Quality Control
Outlier Reports

K1700531

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1700531 **Laboratory: ALS_K**

EDD Filename: K1700531_SEDD2A **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: **6020A**
Matrix: **Soil**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
FTBL-SED-073-0-6-011717MS (Dry) FTBL-SED-073-0-6-011717MSD (Dry) (FTBL-SED-073-0-6-011717)	ZINC	76	78	82.00-119.00	-	ZINC	No Qual Serial Dilution OK

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700531 **Laboratory: ALS_K**

EDD Filename: K1700531_SEDD2A_rev **eQAPP Name: Arcadis_FtBliss_ALS_160627**

Method: 6020A
Matrix: Soil

Analyte	*Concentration (mg/Kg)*		*Sample RPD*	*eQAPP RPD*	*Flag*
	FTBL-SED-072-0-6-011717	FD-011717-1 (Dry)			
ZINC	77.7	80.6	4	50.00	No Qualifiers Applied

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

LDC #: 38037D4a
SDG #: K1700531
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 2/8/17
Page: 1 of 3
Reviewer: AV
2nd Reviewer: KK

METHOD: ~~Lead~~ Zinc (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D: Zn %R out, SD %D in, no quals
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SED-073-0-6-011717	K1700531-001	Soil	01/17/17
2	FTBL-SED-072-0-6-011717	K1700531-002	Soil	01/17/17
3	FTBL-SED-070-0-6-011717	K1700531-003	Soil	01/17/17
4	FTBL-SED-071-0-6-011717	K1700531-004	Soil	01/17/17
5	FTBL-SED-069-0-6-011717	K1700531-005	Soil	01/17/17
6	FD-011717-1	K1700531-006	Soil	01/17/17
7	FTBL-SED-073-0-6-011717MS	K1700531-001MS	Soil	01/17/17
8	FTBL-SED-073-0-6-011717MSD	K1700531-001MSD	Soil	01/17/17
9				
10				
11				
12				

Notes:

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: February 8, 2017

Parameters: Lead

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1700530

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-SS-B073-0-6-011717	K1700530-001	Soil	01/17/17
FTBL-SS-B075-0-6-011717	K1700530-002	Soil	01/17/17
FTBL-SS-B074-0-6-011717	K1700530-003	Soil	01/17/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Lead - Data Qualification Summary - SDG K1700530

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Lead - Laboratory Blank Data Qualification Summary - SDG K1700530

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Lead - Field Blank Data Qualification Summary - SDG K1700530

No Sample Data Qualified in this SDG

LDC #: 38037C4a
SDG #: K1700530
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 2/8/17
Page: 1 of 1
Reviewer: CA
2nd Reviewer: KK

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	~~ICB/CCB only~~ CA
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D (from K1700524)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SS-B073-0-6-011717	K1700530-001	Soil	01/17/17
2	FTBL-SS-B075-0-6-011717	K1700530-002	Soil	01/17/17
3	FTBL-SS-B074-0-6-011717	K1700530-003	Soil	01/17/17
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

)C #: 380371C4a

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: KR

Method: Metals (EPA SW 846 Method 6010/6020/7000)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were the low standard checks within 70-130%	✓			
Were all initial calibration correlation coefficients within limits as specified by the method?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?			✓	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓	✓		
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.		✓	✓	
Target analytes were detected in the field blanks.				

LDC #: 58037C4

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: CR
2nd Reviewer: KK

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Initial calibration)						
ICV (11:28)	ICP/MS (Initial calibration)	Pb	25.348	25.0	~~101~~	~~101~~	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV (12:35)	ICP/MS (Continuing calibration)	Pb	24.809	25.0	99	99	Y
	CVAA (Continuing calibration)						

Comments:

CALCLC.4C4

LDC #: 38037C4

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: CR
2nd Reviewer: KK

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
N	ICP interference check						
LCS	Laboratory control sample		101.012	100	101	101	Y
N	Matrix spike		(SSR-SR)				
N	Duplicate						
N	ICP serial dilution						

Comments: _____

LDC #: 38032C4a

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 02
2nd reviewer: KK

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Pb were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{10mL(5)(210.184\mu g/L)}{0.88(1.383g)(1000)} = 86.35 mg/kg$$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Pb	86.4	86.4	Y
	2		2430	2430	
	3		253	253	

Note: